

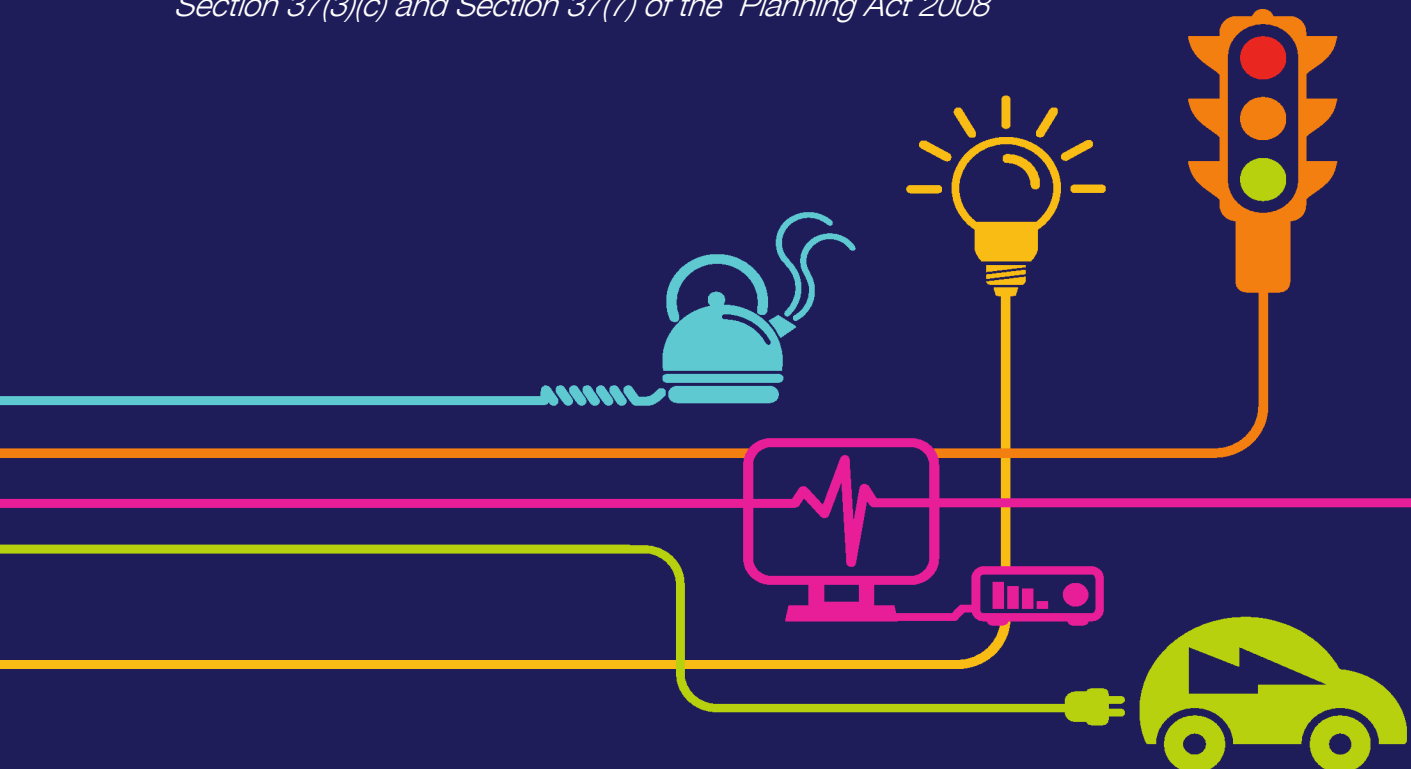
DOCUMENT

# 6.2 (Part 1 of 3)

## Consultation Report Appendices Appendices 1 - 8

National Grid (North Wales Connection Project)

*Regulation 5(2)(q) of the Infrastructure Planning  
(Applications: Prescribed Forms and Procedure) Regulations 2009  
Section 37(3)(c) and Section 37(7) of the Planning Act 2008*







# **North Wales Connection Project**

## **Volume 6**

### **6.2 Consultation Report Appendices (Part 1 of 3)**

National Grid  
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Final

September 2018

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Appendix number	Appendix title	
<b>Non-statutory Stage One Consultation (Autumn 2012)</b>		
1	<b>Stage One Consultation Strategy (2012)</b> The Consultation Strategy explained the community consultation National Grid would undertake for the Stage One Consultation with the local communities in Anglesey and North Gwynedd.	
2	<b>Stage One Consultation Feedback Report (2014)</b> A description of the Stage One Consultation, the comments received and how feedback informed the Project design.	
3	<b>Stage One Consultation Feedback Report Appendices (2014)</b> Appendices to the Stage One Consultation Feedback Report – those listed below are referenced within this Consultation Report:	
	Appendix G	National Grid publication ' <b>Our approach to the design and routeing of new electricity transmission lines</b> ' (2012)
	Appendix H	<b>Stage One Consultation Project News 2012 - dual-language</b> A Project Newsletter and covering letter was issued on 3 October 2012 launching National Grid's Stage One Consultation. It was distributed to just over 89,000 households across Anglesey and Gwynedd.
	Appendix I	<b>Stage One Consultation Feedback forms</b> (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) - dual language. The feedback form included a combination of open and closed questions with space for respondents to communicate additional views or comments.
	Appendix J	<b>Stage One Consultation Feedback form explanation booklets</b> (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) - dual language. The booklet contained a summary of National Grid's Strategic Options Report and maps and detailed explanations of the route corridor and crossing options.
	Appendix M	<b>Stage One Consultation Schedule of 'hard to reach groups'</b>
	Appendix N	<b>Stakeholders Consulted at the Stage One Consultation</b>
	Appendix O	<b>Consultation Zones for the Stage One Consultation</b>
	Appendix Q	<b>Stage One Consultation Advertisements</b> National Grid advertised in Welsh and English in local publications. Advertising ran at the start of Stage One Consultation and shortly before the public exhibitions finished to remind people of the opportunity to attend.
	Appendix R	<b>Holford Rules</b> Guidelines on overhead line routeing.
Appendix S	<b>Horlock Rules</b> An explanation of National Grid's approach to and guidelines for siting and designing substations.	
4	<b>Stage One Consultation Exhibition Panels</b>	

Appendix number	Appendix title
<b>Project Update (January 2015)</b>	
5	<p><b>Project Newsletter: Route Corridor Announcement (January 2015)</b> This newsletter informed residents of the decision that the 'orange' route corridor was selected as the preferred option for the route of the overhead line from Wylfa to Pentir, and that the cables would be placed underground at the Menai Strait.</p>
6	<p><b>Summary of Key Project Changes and Updates (January 2015)</b> Explains the key changes that occurred since October 2012 which required a review of the selection of the preferred strategic option, reflected in the January 2015 version of the Strategic Options Report (Document 9.8.2).</p>
7	<p><b>Information Booklet (January 2015)</b> Summarises the work undertaken to date and the Stage One Consultation, and explains how National Grid looked at all of the route corridor options and identified the preferred 'orange' route corridor.</p>
<b>Project Update (Summer 2015)</b>	
8	<p><b>Project Newsletter (Summer, 2015)</b> A community update was issued to the consultation zone (preferred orange route corridor and 2km buffer zone) across Anglesey and North Gwynedd, along with prescribed and non-prescribed consultees to inform them of the upcoming non-statutory Stage Two Consultation in the autumn of 2015, and to provide details of National Grid's educational outreach activity.</p>

national**grid**

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**6.2.1**

**Appendix 1**

**Stage One Consultation Strategy**

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## **North Wales Connection Project**

### **Consultation Strategy**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

**Winter 2012**



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## APPENDIX SCHEDULE

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## SECTION 1: PROJECT INFORMATION

### 1. INTRODUCTION

- 1.1.1. This document sets out National Grid’s Consultation Strategy for its North Wales Connection Project. It outlines the purpose of and principles underpinning the Consultation Strategy, the methods proposed and provides background information about the Project and National Grid Electricity Transmission plc (National Grid).
- 1.1.2. It outlines the Consultation Strategy for National Grid’s proposals to connect a proposed new nuclear power station of up to 3.6 GW at Wylfa, together with 2 GW of offshore Irish Sea wind, also proposed to connect on Anglesey, to the national transmission network.
- 1.1.3. National Grid’s preliminary preferred option consists of the following three proposed packages of work:
- **An additional overhead connection between Wylfa to Pentir** to connect new low-carbon generation sources to the existing network in North Wales
  - **A new substation in West Gwynedd** to strengthen the network and ensure reliable supplies are maintained in the area, including to the Llŷn Peninsula
  - **An additional underground connection at the Glaslyn Estuary, Gwynedd** to strengthen the network to be able to handle the increased amount of energy in the system
- A number of additional works would also be required to strengthen the electricity network in North Wales. These would include work on existing overhead lines in North Wales, installation of equipment to boost transmission strength and work on existing substations at Wylfa, Pentir and Trawsfynydd. We do not yet know the full details of these works.
- 1.1.4. If National Grid’s preliminary preferred option is taken forward, careful consideration would be given to reducing any effects of these proposed works.
- 1.1.5. However, National Grid believes the preliminary preferred option achieves the best balance between important technical, economic, social and environmental considerations when compared with the others it assessed. However, National Grid will keep its preferred strategic option under review throughout the consultation process to ensure that the most appropriate option is ultimately taken forward. Regardless of what additional generation needs to be connected in North Wales in the future (please see Section 5.2), National Grid anticipates the works proposed as part of its preliminary preferred option would still be required.

## **2. PURPOSE OF THE CONSULTATION STRATEGY**

- 2.1.1. The purpose of this strategy is to set out National Grid's approach to engaging with stakeholders and members of the public within the potential areas of its North Wales Connection Project.
- 2.1.2. This is not a statutory formal stage of planning (see Section 6). However, National Grid is fully committed to the principles of public consultation and undertaking engagement with local communities to ensure their views and opinions can help inform important Project decisions at a suitably early stage.
- 2.1.3. Whilst at this stage this is not a formal Statement of Community Consultation (SoCC), it has been prepared in consultation with the relevant officers at Isle of Anglesey County Council and Gwynedd Council and takes account of their comments. It has also been informed by relevant Government guidance, specifically the Department of Communities and Local Government's "Planning Act 2008 - Guidance on pre-application consultation, 2010"; Planning Inspectorate Advice Note Sixteen, 'The developer's pre-application duties', Chapter 2 of the Planning Act 2008' and its own policy and experience in this area.
- 2.1.4. National Grid does anticipate that a SoCC will ultimately be developed and will be consulted upon as a statutory requirement as per section 47 of the Planning Act 2008.
- 2.1.5. The methodology behind National Grid's consultation strategy, including the main consultation stages, how National Grid will take comments into account and a provisional timetable are set out below.

### **3. METHODOLOGY OF CONSULTATION**

- 3.1.1. National Grid is committed to ensuring the consultation process and associated communications are made as accessible to as many parts of the community as possible.

#### **3.2. DEMOGRAPHICS**

- 3.2.1. The island of Anglesey has a population of 68,600 (2010) and a population density of 96 per sq.km. The largest population centres are Holyhead, Llangefni, Llanerchymedd, Menai Bridge and Amlwch.
- 3.2.2. Major industries are restricted to Holyhead, and the Amlwch area where the existing Wylfa nuclear power station is located and one of the island's single biggest employers.
- 3.2.3. About two million people visit the island each year. Almost the entire coastline of Anglesey is designated as an Area of Outstanding Natural Beauty (AONB).
- 3.2.4. As a local government area, Gwynedd is the second biggest in Wales in terms of geographical area and also one of the most sparsely populated.
- 3.2.5. Gwynedd has a population of 121,900 (2010) and a population density of 47 per sq.km, making it relatively sparsely populated. Larger population centres include Bangor and Caernarfon. Snowdonia National Park falls entirely within Gwynedd's county boundaries.
- 3.2.6. Employment both on Anglesey and in Gwynedd is based predominantly on agriculture and tourism, and in some cases a combination of both.

#### **3.3. WELSH LANGUAGE**

- 3.3.1. In both Anglesey and Gwynedd, Welsh is spoken by around 70 per cent of the population on a day-to-day basis, in and outside the home. This compares to the Wales average of 24.8 per cent.
- 3.3.2. Fully recognising that the region within which National Grid is consulting is bilingual, to ensure the consultation process is made as accessible as possible, and in line with the Welsh Language Act, principal communication materials will be produced in both Welsh and English, including the Project website, newsletters, exhibition panels and feedback forms.
- 3.3.3. Welsh speakers will be in attendance at all of National Grid's consultation events and available when calling the consultation freephone number, where there will be the option of speaking directly with a Welsh speaker.
- 3.3.4. In addition, a video summarising the Project will be made available in both Welsh and English on the Project website.
- 3.3.5. A Welsh audio version of the Project News newsletter will be made available on the Project website, on CD in library packs and upon request.

### **3.4. PUBLIC AWARENESS SURVEY**

- 3.4.1. As well as being informed by consultation with local authority officers and Government guidance (see Section 6.2.3), National Grid's consultation strategy has also been informed by a survey undertaken in August 2011.
- 3.4.2. The geographical area for the survey was Anglesey, as at that time the potential need for works and/or consultation elsewhere had not yet been fully determined.
- 3.4.3. The survey was designed to obtain general information on the public's awareness of new energy generation and why it is needed. It also included a number of specific questions designed to inform the consultation process; including questions relating to the public's perception of community consultation, perceived obstacles to engagement and how the public wished to be informed and kept up to date with Project developments.
- 3.4.4. The survey highlighted that the majority of people recognised the importance of taking part in community consultation. However, almost 50 percent of those surveyed indicated they would not take part; citing ill health or disability as a main reason; particularly in terms of travelling to exhibitions.
- 3.4.5. To help address this, National Grid has ensured a wide geographical spread of exhibition locations to help minimise travelling distance. As part of this approach, National Grid is also utilising a mobile exhibition vehicle. This is being specifically used as a means to take the consultation directly to smaller more remote communities; greatly increasing their ability to meet the National Grid team and take part in the consultation.
- 3.4.6. In addition, National Grid will directly approach a number of groups and organisations that represent a variety of age groups in the area as part of its wider hard to reach group strategy (please see section 3.4).
- 3.4.7. The survey also found that 60 percent of those surveyed preferred to receive information via letter/through the post. This may be reflective of limited internet/broadband connectivity on the island at the time of the survey.
- 3.4.8. To address this, National Grid has taken great care to avoid an over-reliance on web-based consultation. This includes:
  - Posting the Project newsletter to all households on Anglesey and to households who could be affected by the proposed works in Gwynedd
  - Establishing a dedicated freephone number so people can contact the consultation team directly for information
  - Putting key Project documents in public locations across Anglesey and on the mainland
  - Ensuring a reasonable number of consultation events are held in order to maximise direct engagement
- 3.4.9. It is hoped the above activities will also further help to improve accessibility to the consultation process for those who cited ill health or disability as a reason for not taking part.

### 3.5. HARD TO REACH GROUPS

- 3.5.1. National Grid recognises that there are individuals, groups and communities within the consultation zones that may face particular barrier(s) to taking part fully in the consultation process.
- 3.5.2. To identify hard to reach groups, National Grid has consulted with the relevant officers at Isle of Anglesey County Council and Gwynedd Council with regard to hard to reach groups in the area. A list of the groups identified can be found in Appendix 1.
- 3.5.3. These groups include:
- *Young people*: alongside using social media and making material as accessible as possible, National Grid will seek to engage with young people by making both its online and offline consultation visual and interactive, to reduce the reliance on reading and writing
  - *Older people*: National Grid recognises that there may be older people who have health problems or are housebound. Those receiving domiciliary care or in nursing homes generally have a high level of need that makes it much harder for them to attend events
  - *Geographically isolated communities*: the geography of the consultation zones mean there are some areas that are isolated, making it more difficult for those living there to engage without access to personal or private transport
  - *Economically inactive individuals and socially deprived communities*: 27% of people on Anglesey are economically inactive, with a high level of residents without access at home to the internet
  - *Disabled people and those with learning difficulties*: this general term encompasses a wide range of needs and access issues, requiring a combination of consultation methods and information formats to ensure inclusion
  - *Ethnic minorities*: 98-99% of Anglesey and Gwynedd residents are white British, ethnic groups and their cultural and language requirements require careful consideration
  - *Holiday home owners*: while these are an important and distinct group, their transient nature can mean they are particular hard to reach
  - *Time poor*: busy working people, particularly those who have to travel away from the area for periods, can also be regarded as a hard-to-reach group



3.5.4. In engaging with hard to reach groups, National Grid will approach each group directly to advise them of the consultation and seek to obtain feedback with regard to the most appropriate method of engagement. It is anticipated that many groups will be able to engage through the consultation channels National Grid has already put in place (please see section 7). However, it is recognised that other groups may need a more bespoke approach and National Grid is committed to working closely with those groups and will make every effort to ensure the consultation process is as inclusive as possible.

3.5.5. This activity could include:

- Maximising the use of existing methods and networks with which people are already engaged. This is key to reaching people who may not normally engage with traditional channels
- Considering requests for consultation material in different languages and formats, and making them available where appropriate
- Delivering tailored presentations to representative forums and organisations to raise awareness of National Grid's proposals, and increase awareness and understanding of the consultation process
- Attending events that specifically target the identified groups
- Using online and offline channels that specifically targets the identified groups, such as community and sector-specific newsletters and websites
- Consider how best to establish dialogue with appropriate target groups through online media. Ensuring that a reasonable proportion of consultation exhibitions are held in venues visited by target groups
- Provide briefings and updates for relevant support agencies on the Project, the consultation process and how to participate so that they are confident and able to inform and advise service users about National Grid's consultation and possible impact of the proposals
- Targeting holiday parks and second homes with tailored information to encourage seasonal visitors to register to receive fuge information at their home address
- Provide a staffed dual-language telephone enquiry line to deal with any queries about the Project and the consultations process, and give guidance and assistance on submitting feedback
- Ensure distributing of information materials, such as the Project newsletter and advertisements covers grassroots locations and community groups
- Maintain an ongoing dialogue with organisations representing and working with the identified target groups to monitor and review the inclusivity of National Grid's consultation activity
- Review this strategy to inform subsequent stages.

### **3.6. CONSULTEES**

- 3.6.1. Under the requirements of the Planning Act 2008, National Grid is required to consult with those persons identified in Chapter 2 of the 2008 Planning Act and Schedule 1 of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 including people having interests in or living in the vicinity of the land it proposes to develop; those who might be entitled to make a claim in relation to the Project; relevant local authorities and statutory consultees.
- 3.6.2. In order to fulfil the duty to consult the local community, National Grid will consult with members of the public living within broad geographical zones which are set out below. These public consultations form an important part of its wider project-related consultations.
- 3.6.3. National Grid has held initial discussions with a wide range of stakeholders to help inform its proposals to date. This has included engagement with Isle of Anglesey County Council, Gwynedd Council, the Environment Agency Wales, Ministry of Defence, Snowdonia National Park, Countryside Council for Wales and Cadw.
- 3.6.4. National Grid will continue to liaise with these stakeholders to ensure their views on its proposals are fully considered as part of the consultation process. A detailed list of the statutory consultees identified under the 2008 Planning Act and the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 can be found in Appendix 2.
- 3.6.5. In addition to members of the public and statutory consultees, to ensure a comprehensive and robust community consultation process, National Grid will also consult with:
- Community councils
  - Landowners, organisations representing landowners and parties identified as having an interest in land within the primary consultation zones
  - Other relevant community and neighbourhood groups or organisations with a potential interest in the proposals e.g. small businesses and leisure users
- 3.6.6. A list of the community councils identified within National Grid's consultation zones can be found in Appendix 2. Neighbouring community councils have also been included. These councils will be proactively approached and invited to attend preview events ahead of each round of consultation as well as being sent all relevant consultation materials.
- 3.6.7. Wherever appropriate, National Grid will aim to attend meetings of relevant existing public stakeholder groups affected by its proposals. This may include community interest groups, amenity/area focus groups and resident/neighbourhood groups.
- 3.6.8. Where, through consultation with the public and/or local authorities, other bodies with a potential interest in National Grid's proposals are identified, such as local schools or businesses, it will consider how best to make contact and engage with these groups in its consultation.

### **3.7. CONSULTATIONS BEING UNDERTAKEN BY OTHERS IN THE AREA**

- 3.7.1. National Grid is aware that its connectees, Horizon Nuclear Power and Celtic Array, will be carrying out a number of significant consultations in the area within the same timeframe as National Grid. National Grid recognises that other consultations will make demands on the time of the public and their representatives.
- 3.7.2. National Grid has already been working closely with these connectees and other relevant organisations during the Project development to share information and keep one another abreast of plans for consultation.
- 3.7.3. As far as possible, National Grid will work with its connectees to coordinate consultation stages and exhibition dates. By doing so, it is hoped the potential for consultation fatigue and confusion will be reduced, whilst at the same time allowing the public to feedback on each parties' consultation having gained an appreciation of the full extent of works that are being proposed.
- 3.7.4. Other practical measures will be put in place to assist the public in recognition of the potential for confusion between the projects. This will include agreed protocols for directing consultees' enquiries to the relevant organisations should they not be relevant to National Grid, and National Grid attendance at other consultees' public events (and vice versa) where it is agreed this would provide worthwhile to aid public understanding.

## **4. BACKGROUND TO NATIONAL GRID**

- 4.1.1. National Grid owns and operates the high voltage electricity transmission network in England and Wales, a vital position at the centre of the energy system. That puts it at the heart of one of the greatest challenges facing society: the creation of new sustainable energy solutions and the development of an energy system that can underpin economic prosperity in the 21st century.
- 4.1.2. National Grid is regulated by Ofgem, the electricity and gas markets regulator, to ensure value for money and we must satisfy its various statutory duties. It is required under the Electricity Act (1989) to 'develop and maintain an efficient, coordinated and economical electricity system'.
- 4.1.3. It also have a duty to 'consider the desirability of preserving amenity' when undertaking projects which includes consideration of impacts on communities, landscape and visual amenity, cultural heritage and ecological resources. This means, for example, it always seeks to avoid areas which are nationally or internationally designated for their landscape, wildlife or cultural significance, such as National Parks.
- 4.1.4. National Grid recognises that not all sites that are valued by, and important for, the wellbeing of local communities are included in designated areas. National Grid's approach therefore ensures it considers all of the potential economic, environmental and social impacts of proposed projects, not just those relating to designated sites.
- 4.1.5. Satisfying all of its duties can be complex and so National Grid treats each project on a case-by-case basis. You can find out more by reading

its document 'Our approach to design and routing of new electricity transmission lines'. This document can be downloaded from the Project website at [www.nationalgrid.com](http://www.nationalgrid.com) or is available on request.

## **5. NEED FOR THE PROJECT**

- 5.1.1. National Grid has received a number of applications for offers to connect generators to the transmission system within North Wales. Offers have now been made and accepted by the applicants. As such, National Grid has contractual and licence obligations to carry out the necessary transmission works to enable these generators to connect.
- 5.1.2. The generators are Horizon Nuclear Power at Wylfa on Anglesey, a proposed nuclear power station of up to 3.6 gigawatt (GW), and Celtic Array, a 2 GW wind farm to be located in the Irish Sea and connected to the transmission system on Anglesey.
- 5.1.3. Analysis has concluded that modifications must be carried out to the transmission system by 2018 to ensure that National Grid continues to comply with the licence standards.

### **5.2. ADDITIONAL ENERGY SOURCES**

- 5.2.1. An agreement was signed in July 2012 with Greenwire to connect 1 GW of Irish onshore wind energy to Pentir. National Grid is now considering the best way to make this connection. It is also possible that National Grid may need to connect other proposed new energy generation sources to the electricity network in North Wales in the future. Any works required to do this would be subject to a separate planning application, together with the appropriate public consultation. Additionally, a connection agreement has also been signed with Codling Park to connect 1 GW of offshore wind energy to Pentir.
- 5.2.2. As this work moves forward, National Grid will keep people fully informed, and is committed to regularly reviewing its preferred option to ensure the most appropriate option is ultimately taken forward.
- 5.2.3. However, National Grid believes that its preliminary preferred option it has brought forward for Horizon's new nuclear power station and the offshore wind being proposed by Celtic Array represents the best connection option for this power. Regardless of what additional generation needs to be connected in North Wales in the future, National Grid anticipates the works proposed as part of its preliminary preferred option would still be required.

## **6. THE PROJECT**

- 6.1.1. National Grid anticipates that in 2015 it will be making applications for consents necessary to connect proposed new electricity generation in

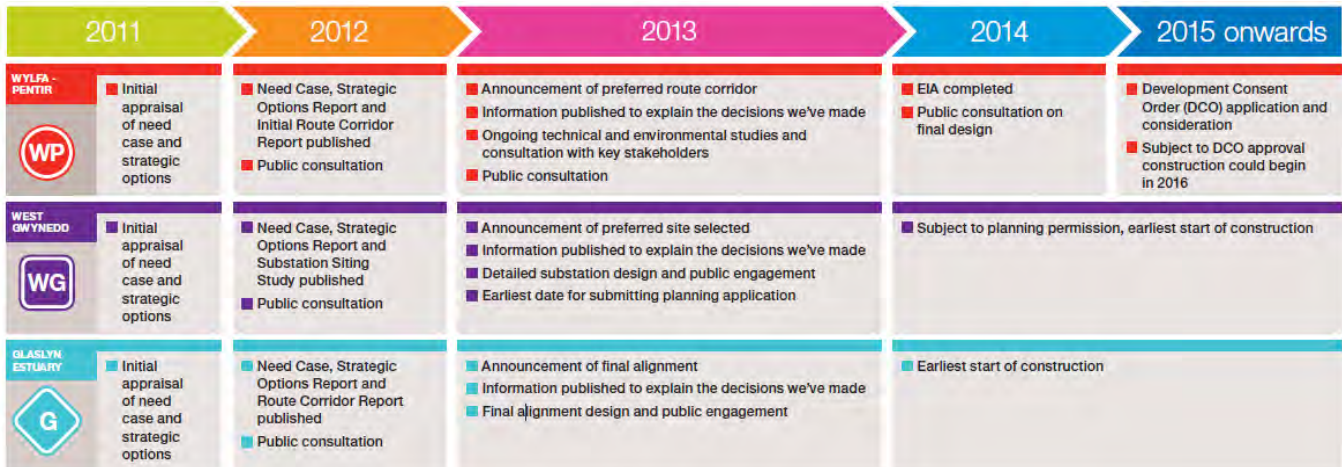
North Wales. Horizon Nuclear Power has a contract with National Grid to connect a proposed 3.6 gigawatt (GW) new nuclear power station at Wylfa on Anglesey. Celtic Array also has a contract to connect 2GW of offshore wind being proposed in the Irish Sea.

- 6.1.2. To identify the best way to connect this proposed new energy generation to the transmission network, National Grid has undertaken a process to identify 'strategic options'. As the result of this process, National Grid has produced a Strategic Options Report. Producing this report forms one of the earliest elements of its work when looking to connect new electricity generation and it involves a number of important stages.
- 6.1.3. During the 'strategic options' process, National Grid identified a large number of potential ways to connect this new energy generation to the transmission network. It reviewed these options against engineering and technical feasibility, environmental and community effects and whole life costs. It also engaged with core stakeholders including Welsh Government, local authority officers, Countryside Council for Wales, Environmental Agency Wales, Ministry of Defence, Snowdonia National Park and Cadw.
- 6.1.4. The core stakeholders' views at this preliminary stage in the process were made without prejudice and do not prevent the individual organisations from presenting their position on the emerging options at the engagement or consultation stages described in this document.
- 6.1.5. You can obtain a copy of National Grid's Strategic Options Report by downloading one from its website or by contacting National Grid directly.
- 6.1.6. Following the strategic options process, National Grid's preliminary preferred option is for an overland connection, which consists of three key packages of work. These are:
  - **An additional overhead connection between Wylfa to Pentir** to connect new low-carbon generation sources to the existing network in North Wales
  - **A new substation in West Gwynedd** to strengthen the network and ensure reliable supplies are maintained in the area, including to the Llŷn Peninsula
  - **An additional underground connection at the Glaslyn Estuary, Gwynedd** to strengthen the network to be able to handle the increased amount of energy in the system
- 6.1.7. A number of additional works would also be required to strengthen the electricity network. These would include work on existing overhead lines in North Wales, installation of equipment to boost transmission strength and work on existing substations at Wylfa, Pentir and Trawsfynydd. National Grid does not yet know the full details of these works but as this becomes clearer, it is committed to keeping people fully informed.
- 6.1.8. Careful consideration would be given to reducing the effects of the works, including careful routeing and screening, screening and planting to reduce visual impact, habitat creation, measures to manage waste and reduce noise and traffic, and consideration of putting sections of overhead connection underground.

- 6.1.9. In National Grid’s first stage of consultation, materials will refer and signpost to each of the consultations taking place allowing the public, should they wish, to comment on all of the proposed works.
- 6.1.10. During the consultation, the generation background may change. Any changes to the background will be checked to ensure the options taken forward are still preferred and the consultation undertaken is valid prior to any planning applications.

**6.2. CONSULTATION STAGES**

- 6.2.1. First and foremost, National Grid’s objective is to undertake a robust and genuine consultation that provides stakeholders and members of the public with the opportunity to engage at an early enough stage in the process so that comments and views can inform the decision making process. National Grid recognises the specialist knowledge members of the public can have about their local community and how this can play an important role in informing the decisions National Grid makes. It is also a key objective to educate and help local communities to understand better what National Grid’s proposals may mean for them, so that any issues or concerns can be resolved early on in the process.
- 6.2.2. The multiphase programme, as illustrated and described below, is National Grid’s best estimate at this stage and may be subject to change as the Project progresses. Changes to the overall programme will be communicated through the methods outlined in Section 10 below.



**a) Pre-Consultation Engagement (Winter-Summer 2011-2012)**

- 6.2.3. Early engagement with relevant officers at the Isle of Anglesey County Council and Gwynedd Council around the development of the Consultation Strategy.
- 6.2.4. Early engagement with stakeholders to provide information on the Project, National Grid’s proposals and the first stage of consultation. Including proposals and the first stage of consultation. Including early engagement with Anglesey’s MP and AM together with the Regional Assembly Members about the Project.

Objectives:

- (i) To undertake early discussion with local authority officers around the development of the Consultation Strategy, to ensure this is a collaborative process and that the advice and expertise of the applicable local authority officers can inform the strategy.
- (ii) To undertake early engagement with representatives of key stakeholders to inform National Grid's proposals ahead of formal consultation.
- (iii) To undertake advance briefings with applicable MPs and AMs to discuss the role of National Grid in connecting new electricity generation in North Wales.

***b) Stage One Consultation - Strategic Options, Wylfa-Pentir Route Corridors, West Gwynedd Substation Site Options, and Glaslyn Estuary Proposed Route Corridor and Potential Route Alignment Consultation - Autumn 2012***

- 6.2.5. National Grid's proposals are at an early stage and the Project is still to be fully defined. Whilst there is no legal requirement to consult with communities at this stage, National Grid feels it represents a key point in the development of its proposals and a stage when community feedback can genuinely influence important decisions.
- 6.2.6. During Stage One Consultation, National Grid will be providing information and consulting upon the options identified for connecting the new electricity generation in North Wales. This consultation will include gathering feedback on:
  - National Grid's preliminary preferred strategic option
  - Potential route corridor options for an additional overhead connection across Anglesey and Gwynedd (from Wylfa to Pentir), including crossing options at the Menai Strait
  - Potential substation siting options in West Gwynedd, in the vicinity of Bryncir
  - A proposed route corridor and potential route alignment for additional underground cables at the Glaslyn Estuary
- 6.2.7. Areas of particular sensitivity that the public wish National Grid to give particular consideration to in reducing the effect of its works e.g. through careful routing, planting and screening measures, habitat creation, alternative pylon designs and consideration of undergrounding
- 6.2.8. National Grid will provide information on the preliminary findings of its Strategic Options Report and Wylfa-Pentir Initial Route Corridor Report, West Gwynedd Substation Siting Study, and Glaslyn Estuary Route Corridor Report. Copies of these documents will be available on the Project website and as set out in paragraph 7.1.28.
- 6.2.9. During this stage, National Grid will provide information concerning the process by which the options have been and will be considered. It will also provide details on the consultation process that will be undertaken on its proposals, before presenting feedback and drawing any conclusions.

- 6.2.10. This will include the key consultation activities set out in section 7, defined feedback and the compilation of a report on that stage of consultation that will be made public before National Grid progresses to the next consultation stage.
- 6.2.11. In total, it is estimated this stage of consultation will last approximately 12 weeks.
- 6.2.12. Throughout the consultation process, National Grid will review its preferred option to ensure it is still the most appropriate to take forward.

#### Objectives

- (i) To explain the background and need case for the Project
- (ii) To explain the process National Grid has gone through to identify its preliminary preferred strategic option and demonstrate why it represents the most appropriate option from engineering, environmental, economic and community perspectives
- (iii) To explain how National Grid has identified the route corridors/alignment and substation site options for consultation and to provide a matter-of-fact appraisal of the characteristics of each
- (iv) To gather the public's views on National Grid's preliminary preferred strategic option and these options, together with any other information the public feel National Grid should be made aware of

#### **c) Further Stages of Consultation**

- 6.2.13. Following the completion of Stage One Consultation, National Grid will review all of the feedback it has received to help inform which options it takes forward. Further stages of consultation on the Wylfa-Pentir package of work will then be held to allow the public and stakeholders to continue to provide feedback on National Grid's proposals as they develop.
- 6.2.14. The timing and scope of further engagement and consultation will be determined following careful consideration of all of the feedback from stage one.
- 6.2.15. As more details on subsequent stages, and their timing, becomes clear National Grid is committed to keeping the public and other stakeholders fully informed.

### **6.3. KEY ACTIVITIES**

#### **a) Pre-Consultation Engagement (Winter-Summer 2011-2012)**

- 6.3.1. Early engagement ahead of formal consultation. Key activities would include:
- Engagement on the draft consultation strategy with relevant officers at Isle of Anglesey County Council and Gwynedd Council



- Taking into account and responding to local authority officer comments on the draft consultation strategy and revising the draft strategy if appropriate
- Early communications on Anglesey including distribution of initial newsletter and briefing local MP and AM

**a) Stage One Consultation - Strategic Options, Wylfa-Pentir Route Corridors, West Gwynedd Substation Site Options, and Glaslyn Estuary Proposed Route Corridor and Potential Route Alignment Consultation - Autumn 2012**

6.3.2. Promotion and launch of stage one consultation. Key activities would include:

- Launch of freephone number, freepost address and e-mail feedback mechanism
- Distribution of stage one newsletter – this will be distributed to all households on Anglesey and to households within the study area used for National Grid’s proposals on the mainland
- Key documentation made available in public locations, such as libraries (this would include a combination of reference copies, for larger technical documents, and copies to take away for core non-technical consultation materials)
- Launch of the Project website – a source of information for members of the public and facilitating online consultation
- A series of Project exhibitions supported by the consultation exhibition vehicle which will target smaller rural communities
- Dedicated presentation/briefing events (and ongoing communications) for key local and national political, statutory and non statutory stakeholders
- Writing to all stakeholder groups to inform them of Stage One and communicate exhibition dates.
- Advertising in local press to promote exhibitions
- Media relations – to provide information to the public through media channels
- Information posters in public and civic buildings (e.g. libraries) and sent to community/town councils to be put up on notice boards and in community/town halls.

#### **6.4. CONSULTATION ZONES**

6.4.1. For the first stage of consultation, the Project has been divided into two consultation zones (also see Appendix 3).

6.4.2. **Zone One** – this zone includes the whole of Anglesey and encompasses all the works that could take place on the island. Given Anglesey’s island context, National Grid feels it is important to engage with the community as a whole. The Project newsletter, for example, will be issued to all households on the island. However, it is fully recognised that communities in closer proximity to the route corridors could be more directly affected by the proposed works and are likely to have a stronger

interest in the Project and the consultation process. As such, whilst National Grid is engaging with the whole island, care has been taken to ensure nearby communities are engaged with as fully as possible; particularly with regard to the location for exhibition events.

- 6.4.3. **Zone Two** - this zone encompasses all areas on the mainland where communities could be affected by the works being proposed. This zone consists of two areas:

Primary – this zone extends 2km either side of the broad Wylfa-Pentir route corridors National Grid is consulting on and the existing substation at Pentir. It also incorporates a 2km radius around each of the West Gwynedd substation site options, and the Glaslyn route corridor.

The primary zone has been developed following analysis of the potential effects of a new transmission connection and includes the areas that would potentially be most affected by one of the route corridor options. These communities could be particularly affected by issues such as construction effects, visual effect and effect on local amenities.

In addition, these communities are likely to have considerable knowledge of local heritage and ecology.

The primary consultation zone will be engaged with through direct contact including Project newsletters and newspaper advertisements. Consultation exhibitions will also be primarily located within this zone.

Secondary - The secondary zone encompasses all those households that are more than 2km from the route corridors and site options. This zone is less likely to be directly affected by the proposals and effects of construction.

- 6.4.4. However, National Grid recognises that people within this zone may be interested in issues, such as construction effect, or may have reason to travel through the directly affected areas and therefore should be included in the consultation. The secondary zone will be engaged primarily through local and regional media channels, including advertising.

## **7. HOW IS NATIONAL GRID CONSULTING AND HOW CAN THE PUBLIC PARTICIPATE?**

- 7.1.1. Throughout the consultation process, National Grid will be inviting communities and interested parties to view, discuss and comment on its proposals.

- 7.1.2. National Grid will endeavour to ensure that public consultation is effective to ensure as many members of the community as possible have the opportunity to express their views. Whilst acknowledging that aspects of the Project may be extremely complicated, National Grid will endeavour to provide clear and concise information about the Project and its effects throughout the pre-application consultation process to enable constructive debate to take place. This will include making all research,

relevant project and technical documents (and non-technical summaries) available as National Grid progresses.

- 7.1.3. National Grid has identified the following ways in which the public can express their views. These will evolve during the consultation process and will be tailored according to feedback on previous events and to the needs of each of the Project development stages leading up to the submission of its application.

**Public Exhibitions**

- 7.1.4. Public exhibitions, where people will be able to view National Grid’s proposals, talk to the Project team and record their comments, will be held at suitable publicly accessible venues/locations within Zone One and Zone Two (primary). These events would be widely publicised through the website, Project newsletters, advertising and through letters issued directly to stakeholders. The locations scheduled for these events are detailed below:

**Consultation Zone One**

Llangefni	Bull Hotel
Llanfairpwll	Neuadd Goffa Memorial Hall
Benllech	Community and Ex-Servicemen’s Hall
Llanfacraeth	Village Hall
Cemaes	Village Hall
Caernarfon	Celtic Royal Hall
Gaerwen	Gaerwen Business Park
Rhosneigr	Village Hall
Llanerchymedd	Community School
Beaumaris	Iorwerth Rowlands Centre
Bangor	Penrhyn Hall
Brynsiencyn	Community Centre
Wylfa	Wylfa Sports and Social Centre
Menai Bridge	Thomas Telford Centre
Amlwch	Memorial Hall
Y Felinheli	Memorial Hall
Holyhead	Town Hall

### **Consultation Zone Two**

Rhosybol	Primary School
Bryncir	Goat Inn
Porthmadog	Glaslyn Leisure Centre
Penrhyndeudraeth	Memorial Hall
Tremadog	Memorial Institute

### **Consultation Vehicle**

- 7.1.5. To support the exhibitions in Consultation Zone One and Two (Primary), a consultation vehicle will be used to target other locations which, for example, may be more remote and poorly served by public transport, making attendance at static exhibitions difficult, or do not have suitable exhibition venues. The vehicle will travel to different locations and provide an opportunity to view National Grid's proposals, talk to the Project team and register comments.
- 7.1.6. The same materials will be available from the consultation vehicle as will be available at the exhibitions. Details of the consultation vehicle can be seen in Appendix 5.
- 7.1.7. The locations for these events are detailed below:
- Bodorgan, Primary School
  - Rhosybol, Primary School
  - Pentir, Vaynol Arms
  - Gaerwen, Gaerwen Business Park
  - Garndolbenmaen, Primary School
  - Gwalchmai, Gwalchmai Hotel
  - Llanfaaethlu, Neuadd Griffith Reade Hall
  - Aberffraw, Llys Llwyn Heritage Centre
  - Bodedern, Village Hall
  - Llanrug, Arvonias Coaches
  - Llanfair-yn-Neubwll, Hotel Cymyran
  - Bryncir, Tile Stop
  - Minffordd, Snowdonia Business Park

### **Project Newsletter**

- 7.1.8. The Project newsletter will be issued at regular intervals throughout the consultation period linked to the consultation stages. A newsletter will be sent out before the start of each consultation stage and following the close of the consultation.

- 7.1.9. This will be the main form of direct communication with the public and will provide information about the Project, promote exhibition events and locations, and provide feedback on how comments are being considered.
- 7.1.10. In Stage One Consultation, the Project newsletter will be posted to all households on Anglesey and all households within Zone Two (primary).
- 7.1.11. A list of the locations where information (including technical information) will be made available to the public is included in Appendix 6.

***Feedback forms and written comments***

- 7.1.12. Feedback forms have been developed for consultees to register their view on each of the packages of work. For stage one, the forms request feedback on National Grid's preliminary preferred strategic option, together with:
- **Wylfa-Pentir** - the route corridor options identified and areas of sensitivity along the routes which the public feel need to be given particular consideration.
  - **West Gwynedd** – the substation site options identified
  - **Glaslyn Estuary**- the proposed route corridor and potential route alignment identified
- 7.1.13. Each form also provides a section for the public to feed back on the consultation process itself.
- 7.1.14. Written comments can be made either online or in writing to the dedicated e-mail address [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com) or [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com) and freepost address – FREEPOST NATIONAL GRID NW CONNECTION.
- 7.1.15. National Grid has also established a dedicated free phone line – 0800 9900 3567 for enquiries (this is a dual language service). However, National Grid will not be analysing verbal feedback as part of the formal consultation process and individuals will be encouraged to put their views in writing.
- 7.1.16. National Grid will make all three Feedback Forms available at all exhibitions and online, enabling consultees to respond on all aspects of the Project.

***Project Website***

- 7.1.17. The Project website will provide information about National Grid's proposals and include a detailed FAQ section. Documents, including relevant technical documents, exhibition materials and summary material will be available for download from the website. The Project website will also allow for online consultation by including a dedicated area for registering views and comments. The website will be regularly updated to reflect the latest stage of the consultation.
- 7.1.18. The address for the Project website is [www.cysylltiadgogleddcymru.com](http://www.cysylltiadgogleddcymru.com) and [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

### ***Social media***

- 7.1.19. National Grid will also endeavour to make best use of social media to reach groups online, such as young people, who may otherwise not engage in the consultation process.
- 7.1.20. National Grid UK has existing Facebook and Twitter channels, and will use these to communicate key information and milestones.
- 7.1.21. A short video, explaining the background to the Project and the proposed option will be created at Stage One, and made available on the Project website and on National Grid's YouTube channel.

### ***Briefings***

- 7.1.22. Briefings with political, statutory and non-statutory consultees will take place throughout the consultation period. Briefings with elected representatives are planned to take place as part of each stage of consultation to ensure they are able to act as effective conduits for information and signpost residents to the relevant information sources such as the Project website and upcoming exhibitions. Where briefings have been unable to take place, National Grid will send detailed Project information.

### ***Letters, E-mails and Phone Calls***

- 7.1.23. Letters and e-mails will be used regularly as a communication tool. These may be issued widely, following a similar approach to the newsletter, and/or issued to individuals who have registered their details as part of the consultation process. Stakeholders will be able to write, e-mail or phone the Project team directly throughout the consultation period to raise comments or discuss questions.

### ***Media Relations***

- 7.1.24. Proactive media relations targeting print, broadcast and online channels will take place throughout the consultation period and it is hoped journalists will report on the consultation and further help to promote the events that are taking place.

### ***Advertising and Other Promotion***

- 7.1.25. In promoting exhibitions, National Grid will advertise in appropriate local/regional newspapers. Information posters will also be put up at public and civic buildings (e.g. libraries) and sent to parish and town councils where they can be put up at community halls and notice boards.

### ***Inspection Copies***

- 7.1.26. Copies of Project information will be made available at:
- National Grid, Company Secretariat Office, 1 – 3 Strand, London, WC2N 5EH (Opening Hours: 08.30 – 16.30 Monday – Friday):
  - Public Libraries, Customer Service Points and Council offices (please see Appendix 6).

## **7.2. FEEDBACK**

- 7.2.1. Regular feedback on consultation, including National Grid's responses to comments made and any actions to be taken as a result will take place throughout the consultation.
- 7.2.2. Feedback and comments made at all stages of the consultation process will be recorded and carefully considered by the Project team. Should other potentially viable options be raised during Stage One Consultation, National Grid will consider their relative merits and report on them.
- 7.2.3. National Grid will also seek to explain how it has considered significant relevant feedback that it does not follow.
- 7.2.4. Communicating feedback at all stages will be extremely important particularly following the Stage One Consultation and a decision on which preferred route corridor is taken forward. A variety of channels and tools will be used to communicate feedback. These include:

### ***Website***

- 7.2.5. The website will be updated following each stage of consultation to provide an overview of that stage, highlight key issues raised, detail National Grid's response and provide answers to common questions.
- 7.2.6. The website will replicate the information and the feedback process as closely as possible. Tools such as interactive maps will also be used to obtain feedback from those who prefer to engage with the process online.

### ***Newsletter***

- 7.2.7. Each newsletter will contain a summary of the consultation process to date, a focus on the latest round of exhibitions and, in line with the website, highlight some of the key issues raised, detail National Grid's response and provide answers to common questions.
- 7.2.8. For feedback following Stage One Consultation, the Project newsletter will be sent to the same distribution base used to promote this stage (see section 6.4 for more information) and directly to everyone who attended the first stage of consultation and provided contact details. As well as an overview of feedback provided, the newsletter will highlight the availability of the full Feedback Report (see below) and how the public can obtain copies.

### ***Feedback Reports***

- 7.2.9. Feedback Reports will be produced following each stage of consultation as appropriate for each package of work, which will serve as a record of the events, outline the comments received during that stage of consultation and show how National Grid has responded.
- 7.2.10. These will be made available to the public and other interested parties via the Project website, at publicly accessible locations (see Appendix 6) and provided on request by the Project team. These feedback reports will provide information for the final Consultation Report which will be produced at the close of the consultation to support the planning application (see below).

### **Exhibitions**

- 7.2.11. Each round of exhibitions will include feedback on the previous round as part of the materials on display and to take away.

### **Consultation Report**

- 7.2.12. Should the application for the Wylfa-Pentir works be submitted under the 2008 Planning Act, how comments received have shaped and influenced the Project will be reported in a Consultation Report prepared by National Grid that will accompany its Development Consent Order application as required by Section 37(3) (c) of the 2008 Planning Act. The Development Consent Order application will be publicised along with the Consultation Report and the Environmental Statement (or a summary as appropriate) will be made available on the Project website and at inspection locations.

## **8. NEXT STEPS**

- 8.1.1. Following the completion of stage one consultation, National Grid will make an announcement on which options it will take forward before proceeding to the next stage of consultation.
- 8.1.2. This next stage of Wylfa-Pentir consultation is currently targeted to take place in Autumn/Winter 2013. Ahead of this stage, the Consultation Strategy will be reviewed and updated. As for Stage One consultation, this process will involve consultation with the appropriate local planning authority officers.
- 8.1.3. It is anticipated that the next stage of consultation for West Gwynedd and Glaslyn Estuary will take place during 2014.

## **9. NATIONAL GRID AND THE PLANNING PROCESS**

- 9.1.1. The Planning Act 2008 introduced a new consenting process to streamline the decision-making process for 'Nationally Significant Infrastructure Projects' (NSIPs), designed to make it fairer and faster for communities and developers alike. Under the terms of the Act, the development of new overhead electricity lines operating at voltages of 132kV and above constitute NSIPs, and as such require the grant of a Development Consent Order (DCO). Applications for the grant of DCOs are submitted to the Planning Inspectorate's National Infrastructure Directorate' (NID) for examination, who then recommend whether or not the Order should be granted. The NID's judgement will be informed by the relevant National Policy Statement's (NPS) on Energy; 'EN-1 Overarching Energy' and 'EN-5 Electricity Networks Infrastructure'. These NPS can be found at <http://bit.ly/iuU6EJ>
- 9.1.2. The final decision as to whether to grant the DCO is then made by the relevant Secretary of State; in the case of overhead lines the Secretary of State for Energy. The process is explained in more detail in the Planning Inspectorate's 'Advice Note 8.1 - How the Process Works', which can be found at <http://bit.ly/QBgeb7>
- 9.1.3. The works National Grid is proposing for the Wylfa-Pentir connection has the potential to be categorised as a NPS for which a DCO would be required.



- 9.1.4. At this stage, the Wylfa-Pentir package of the Project is not formally registered with the Planning Inspectorate. National Grid anticipates the potential for the planning application to ultimately be made under The 2008 Planning Act (please see Section 6 for more information). Accordingly, National Grid has looked to the 2008 Planning Act to help shape its early stages of consultation and to ensure it has been informed by Government consultation best practice.
- 9.1.5. National Grid anticipates the potential for the planning application for other works associated with the North Wales Connections Project, including the proposed substation in West Gwynedd and other developments associated with the construction of overhead lines would require planning permission in accordance with the Planning Act 1990. Planning applications would be submitted to, and determined by, the relevant local planning authority; in this case the Isle of Anglesey or Gwynedd County Councils.
- 9.1.6. National Grid also anticipates the potential for the replacement and upgrade of underground electricity cables at the Glaslyn Estuary, more minor works at existing sites and temporary works are likely to constitute 'permitted development' as defined by the Town and Country Planning General (Permitted Development) Order 1995, and as such would be unlikely to require discrete planning permission.
- 9.1.7. Other works associated with the North Wales Connections Project, such as the construction of new substations and other developments associated with the construction of overhead lines would require planning permission in accordance with the Planning Act 1990. Planning applications would be submitted to, and determined by, the relevant local planning authority; in this case the Isle of Anglesey or Gwynedd County Councils.

## **10. REGULATION OF NATIONAL GRID BY OFGEM**

- 10.1.1. The Office of Gas and Electricity Markets (Ofgem) regulates the gas and electricity industry in Great Britain.
- 10.1.2. Protecting consumers is Ofgem's main priority. This is achieved by promoting competition, where appropriate, and regulating the monopoly companies which run the gas and electricity networks, including National Grid. The remit of Ofgem is to consider the interests of gas and electricity consumers as a whole including the reduction of greenhouse gases and the security of the supply of gas and electricity to consumers. Its other priorities and influences include:
- Promoting competitive gas and electricity markets and regulating these so that there is adequate investment in the networks
  - Contributing to the drive to curb climate change and other work aimed at sustainable development

## **11. NATIONAL POLICY STATEMENTS IN RELATION TO TRANSMISSION INFRASTRUCTURE**

- 11.1.1. As part of the operation of the UK planning system, the government has designated or proposed 12 National Policy Statements (NPSs) for different types of infrastructure projects. These NPSs outline the national need for certain infrastructure and its benefits.
- 11.1.2. These NPSs are the primary basis for decisions by the Planning Inspectorate to inform decisions when considering applications from developers and other organisations responsible for infrastructure development. The NPSs set out how the Planning Inspectorate should take into account the effect of infrastructure development upon the local area.
- 11.1.3. There are a total of six Energy Infrastructure NPSs. NPS EN-1 is the Overarching National Policy Statement for Energy and EN-5 is the NPS for Electricity Networks Infrastructure.
- 11.1.4. NPS EN-1 outlines the need for new energy infrastructure. It describes how the diversification of the UK's energy sources and the greater use of renewable forms of generation will create a significant national need for expansion and reinforcement of the UK's transmission and distribution networks. NPS EN-1 also describes the generic impacts that could be associated with the development of energy infrastructure. These include air quality and emissions, biodiversity and geological conservation, civil and military aviation, flood risk, historic environment, landscape and visual, land use, noise and vibration, socio-economic traffic and transport, waste management and water quality and resources.
- 11.1.5. NPS EN-5 is concerned with impacts and other matters which are specific to electricity networks infrastructure. It describes factors influencing site selection including general assessment principles, impacts of electricity networks, consideration of good design, biodiversity, geological conservation, landscape, visual and noise considerations and Electro-Magnetic Fields (EMFs).

## **12. FURTHER INFORMATION**

- 12.1.1. For further information about National Grid and/or its plans for the North Wales Connection Project, please contact the Project team via the dedicated freephone information number 0800 990 3567 or at the following freepost address; FREEPOST NATIONAL GRID NW CONNECTION or via the Project website on

North Wales Connection Project – Consultation Strategy

[www.cysylltiadgogleddcymru.com](http://www.cysylltiadgogleddcymru.com) or [www.nationalgrid.com/northwales](http://www.nationalgrid.com/northwales)  
[connection](http://www.cysylltiadgogleddcymru.com)

**ENDS**

## Appendix 1      **Hard to Reach Groups**

### **Anglesey**

#### **Young People:**

Anglesey Children and Young People's Partnership  
IoACC Education Department  
Llwyddo'n Lleol Project Officer  
Children's Services  
Ynys Mon County Federation of Young Farmers  
Digartref Ynys Mon  
David Hughes Secondary School  
Llangefni Secondary School  
Syr Thomas Jones Secondary School  
Bodedern Secondary School  
Holyhead Secondary School

#### **Older People:**

Isle of Anglesey's Council's Older People's Strategy Officer  
Age Cymru Gwynedd a Mon  
Anglesey Agewell

#### **Unemployed:**

JobCentre Plus (North Wales)  
Citizens' Advice Bureau

#### **Disadvantaged**

##### **Communities:**

Anglesey Communities First  
Cymdeithas Tai Eryri  
Tai Gogledd Cymru

#### **Holiday Makers/Tourism Operators:**

Tourism Section, IoACC

#### **Voluntary Sector:**

Medrwn Mon  
Taran Disability Forum

#### **Minority Ethnic Groups:**

IoACC Policy and Strategy Officer

#### **Caravan Parks:**

Capel Elen Caravan Park  
Rhos Caravan Park  
Ty Newydd Leisure Park and Country Club  
Glan Gors Holiday Park  
Nant Newydd Caravan Park  
Pen Parc Caravan Park  
Plas Coch Holiday Homes  
Talacre Beach  
Penrhyn Point Holiday Site  
Tyddyn Isaf Caravan & Camping Site  
Plas Uchaf Touring & Camping Park  
Lee Caravan Park  
Shoreside Caravan & Camp Park  
Bagnol Caravan Park  
Pigeon House Caravan Park  
Penrhyn Bay Caravan Park  
Golden Sunset Holidays

### **Gwynedd**

#### **Young People:**

Gwynedd Children and Young People's Partnership  
Eryri County Federation of Young Farmers  
Llwyddo'n Lleol Project Officer  
Gisda  
Ysgol Brynrefail  
Ysgol Syr Hugh Owen  
Ysgol Dyffryn Ogwen

Ysgol Friars  
Ysgol Dyffryn Nantlle  
Ysgol Tryfan  
Ysgol Glan y Mor  
Ysgol Eifionydd  
Ysgol Botwnnog  
Ysgol y Moelwyn  
Ysgol Ardudwy  
Ysgol y Gader

Ysgol y Berwyn  
Ysgol Uwchradd Tywyn

**Older People:**

Age Cymru Gwynedd a Mon  
Gwynedd Agewell  
Gwynedd Older People  
Strategy Officer

**Unemployed:**

JobCentre Plus  
Citizens' Advice Bureau

**Disadvantaged  
Communities:**

Communities First Officer  
Cymdeithas Tai Eryri  
Tai Gogledd Cymru

**Holiday Makers/Tourism  
Operators:**

Gwynedd Council Tourism  
Section

**Voluntary Sector:**

Mantell Gwynedd

## **Appendix 2      Community councils**

### **Anglesey**

Abberffraw Community Council  
Amlwch Town Council  
Beaumaris Town Council  
Bodedern Community Council  
Bodffordd Community Council  
Bodorgan Community Council  
Bryngwran Community Council  
Cwm Cadnant Community Council  
Cylch-y-Garn Community Council  
Holyhead Town Council  
Llanbadrig Community Council  
Llanddaniel Fab Community Council  
Llanddona Community Council  
Llanddyfan Community Council  
Llaneilian Community Council  
Llaneugrad Community Council  
Llanfachraeth Community Council  
Llanfaelog Community Council  
Llanfaethlu Community Council  
Llanfair Mathafarn Eithaf Community Council

Llanfairpwll Community Council  
Llanfair yn Neubwll Community Council  
Llanfihangelesceifiog Community Council  
Llangefni Town Council  
Llangoed and Penmon Community Council  
Llangristiolus Community Council  
Llanidan Community Council  
Llannerchymedd Community Council  
Mechell Community Council  
Menai Bridge Town Council  
Moelfre Community Council  
Penmynydd and Star Community Council  
Pentraeth Community Council  
Rhoscolyn Community Council  
Rhosybol Community Council  
Rhosyr Community Council  
Trearddur Community Council  
Tref Alaw Community Council  
Trewalchmai Community Council  
Valley Community Council

### **Gwynedd**

Caernarfon Community Council  
Pentir Community Council  
Bangor Community Council  
Llandygai Community Council

Llanddeiniolen Community Council  
Y Felinheli Community Council  
Llanrug Community Council

### Appendix 3 List of Consultees

<b>Statutory Stakeholders</b>
Isle of Anglesey County Council
Gwynedd Council
Snowdonia National Park
Welsh Government Energy and Environment Sector Panel
WG Head of Planning
Campaign for the Protection of Rural Wales (CPRW) - Anglesey
Campaign for the Protection of Rural Wales (CPRW) - Meirionnydd
Campaign for National Parks
North Wales Wildlife Trust
National Trust Wales
Cadw
Ofgem - Wales
The Health and Safety Executive
North Wales Fire and Rescue Authority
North Wales Police Authority
The Environment Agency Wales
Equality and Human Rights Commission
Royal Commission on Ancient and Historical Monuments of Wales
Countryside Council for Wales (CCW)
The Joint Nature Conservation Committee
Maritime and Coastguard Agency
Civil Aviation Authority
Transport Division
AONB Management Partnership
Defence Land Services
Forestry Commission Wales
Network Rail
Welsh Highland Railway Ltd.
North Wales Taith (Integrated Transport Authority)
North Wales Trunk Road Agency
Disabled Persons Transport Advisory Committee (DPTAC)
Office of Rail Regulation
Ofwat (Water Services Regulation Authority)
Trinity House
Wales Resilience Forum
The Crown Estate Commissioners
Existing Generators in each site

<b>Community Councils – Anglesey</b>
Abberffraw Community Council
Amlwch Town Council
Beaumaris Town Council
Bodedern Community Council
Bodffordd Community Council
Bodorgan Community Council
Bryngwran Community Council

Cwm Cadnant Community Council
Cylch-y-Garn Community Council
Holyhead Town Council
Llanbadrig Community Council
Llanddaniel Fab Community Council
Llanddona Community Council
Llanddyfan Community Council
Llaneilian Community Council
Llaneugrad Community Council
Llanfachraeth Community Council
Llanfaelog Community Council
Llanfaethlu Community Council
Llanfair Mathafarn Eithaf Community Council
Llanfairpwll Community Council
Llanfair yn Neubwll Community Council
Llanfihangelesceifiog Community Council
Llangefni Town Council
Llangoed and Penmon Community Council
Llangristiolus Community Council
Llanidan Community Council
Llannerchymedd Community Council
Mechell Community Council
Menai Bridge Town Council
Moelfre Community Council
Penmynydd and Star Community Council
Pentraeth Community Council
Rhoscolyn Community Council
Rhosybol Community Council
Rhosyr Community Council
Trearddur Community Council
Tref Alaw Community Council
Trewalchmai Community Council
Valley Community Council

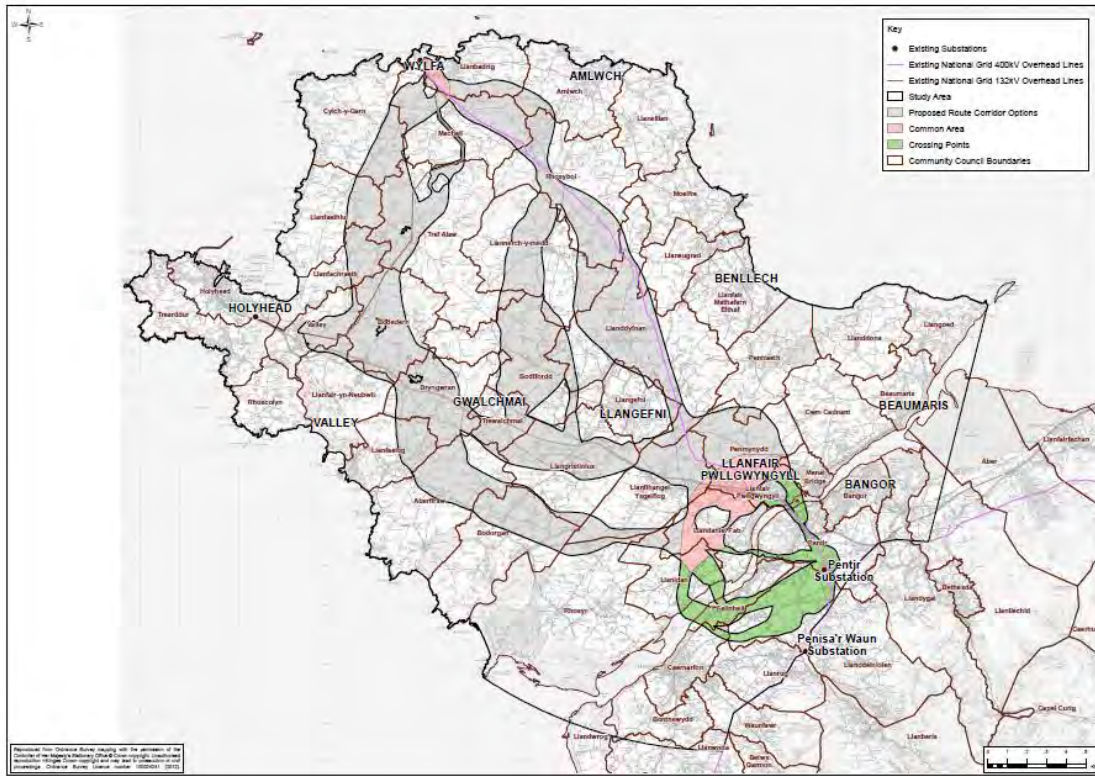
<b>Community Councils – Gwynedd</b>
Caernarfon Community Council
Pentir Community Council
Bangor Community Council
Llandygai Community Council
Llanddeiniolen Community Council
Y Felinheli Community Council
Llanrug Community Council

<b>Non Statutory Stakeholders</b>
<b>Business</b>
CBI Wales
North Wales Chamber of Commerce
Federation of Small Businesses
<b>Cultural Heritage</b>
Anglesey Antiquarian Society and Field Club
Bangor Civic Society
Council for British Archaeology in Wales
Gwynedd Archaeological Trust

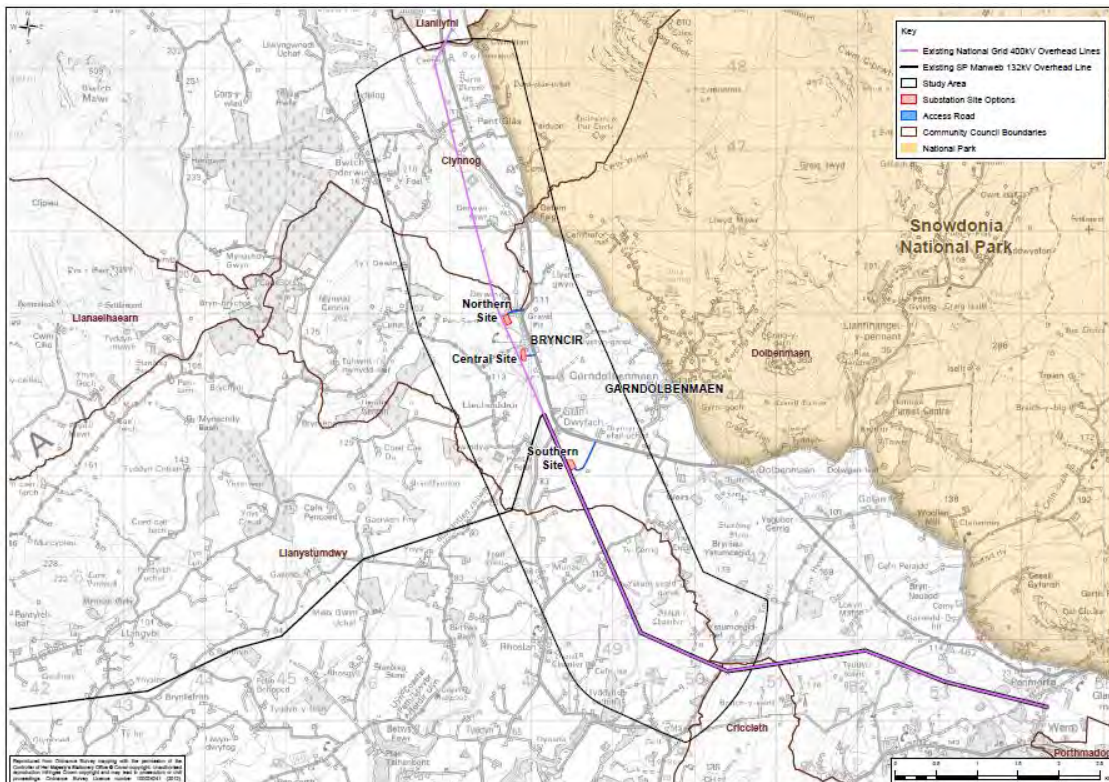


## Appendix 4 Consultation Zones

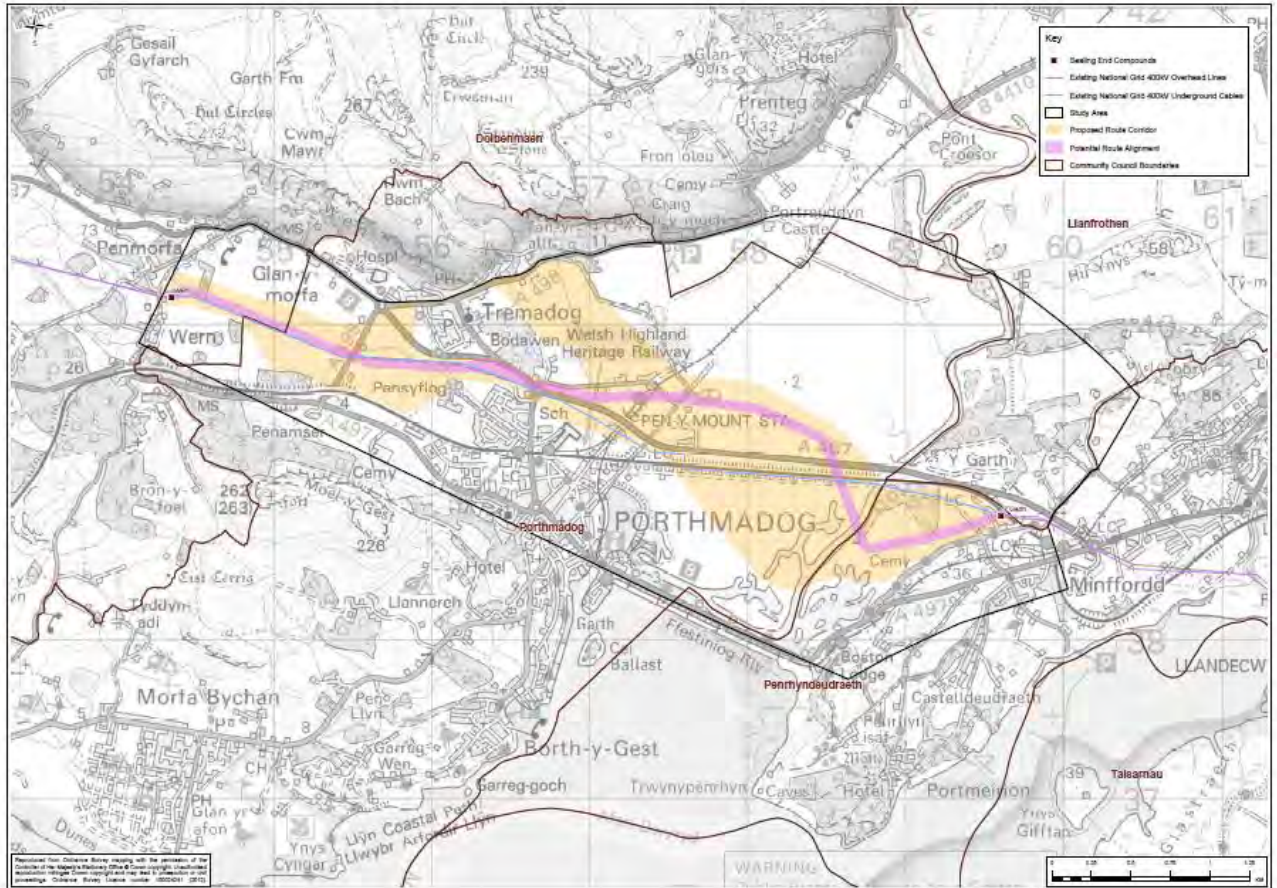
### Wylfa to Pentir :



### West Gwynedd:



**Glaslyn Estuary:**





## Appendix 5 Consultation Vehicle Details

Recognising the need to consult with all demographics and in more remote locations, National Grid has created a mobile exhibition vehicle designed specifically for the North Wales Connection Project.

The vehicle is an adapted Ford Luton long wheelbase van as is designed for consultation with around 15 people per day. The vehicle will be operated between 11am and 4pm.

It has steps and an access ramp. Internally, it features adjustable tables, Velcro wall panels for display material and a DVD player and screen for exhibiting audio visual materials.



## Appendix 6 – Consultation Material Inspection Copy Locations

### ***Anglesey - Libraries***

Amlwch Library	Lon Parys	Amlwch
Beaumaris Library	David Hughes Community Centre	Beaumaris
Cemaes Library	Glascoed Road	Cemaes Bay
Holyhead Library	Newry Fields	Holyhead
Llangefni Library	Lon y Felin	Llangefni
Menai Bridge Library	Wood Street	Menai Bridge
Moelfre Library	Y Ganolfan	Moelfre
Newborough Library	Prichard Jones Institute	Newborough
Rhosneigr Library	High Street	Rhosneigr
Anglesey County Council	Council Offices	Llangefni
Anglesey Business Centre	Bryn Cefni Business Park	Llangefni
Benllech Library	Bangor Road	Benllech

### ***Gwynedd – Libraries***

Bangor Library	Gwynedd Road	Bangor
Caernarfon Library	Pavillion Hill	Caernarfon
Bethesda Library	Coetmor Road	Bethesda
Llanberis Library	Capel Coch Road	Llanberis
Penygroes Library	Dyffryn Nantlle Technology Centre	Penygroes
Blaenau Ffestiniog Library	Canolfan Maenofferen	Blaenau Ffestiniog
Porthmadog Library	Chapel Street	Porthmadog
Gwynedd Council	Council Offices	Caernarfon
Gwynedd County Council Planning Department	Ffordd Y Cob	Pwllheli

### ***Other – Libraries***

Colwyn Bay Library	Woodland Road West	Colwyn Bay
Conwy Library	Civic Hall	Conwy
Llandudno Library	Mostyn Street	Llandudno
Llandudno Junction Library	Maes Derw	Llandudno Junction
Deganwy Library	Station Road	Deganwy
Conwy County Borough Council	Bodlondeb Council Offices	Bodlondeb

## **Appendix 6      Consultation material inspection copy locations**

### **Anglesey**

Amlwch Library  
Beaumaris Library  
Benllech Library  
Cemaes Library  
Holyhead Library  
Llangefni Library  
Menai Bridge Library  
Moelfre Library  
Newborough Library  
Rhosneigr Library

### **Gwynedd**

Bangor Library  
Caernarfon Library  
Criccieth Library  
Penygroes Library  
Porthmadog Library

### **Other Locations**

Isle of Anglesey County Council  
Anglesey Business Centre  
Gwynedd County Council



nationalgrid

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**6.2.2**

**Appendix 2**

**Stage One Consultation Feedback Report**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

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# **North Wales Connection Project**

## **Stage One Consultation Feedback Report**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV6 3DA

June 2014

## Executive summary

In North Wales, a number of new sources of low carbon energy have been proposed:

- Horizon Nuclear Power's 3.6 GW nuclear power station at Wylfa
- Celtic Array's 2 GW connection for an offshore wind farm in the Irish Sea

National Grid has to connect this proposed new generation to the electricity network.

Together, this new generation could produce up to five times as much energy as the current Magnox nuclear power station. The existing electricity network would be unable to handle such a large increase.

National Grid looked at a range of options to connect this proposed new generation to the electricity network and an overview of these can be found in our **Strategic Options Report (SOR)** (available to download from [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). Following this process, we identified our initial preference which consists of three packages of work:

- An additional overhead connection between Wylfa and Pentir;
- A new substation in West Gwynedd; and
- An additional underground connection at the Glaslyn Estuary.

### Stage One Consultation

During our first stage of consultation, we sent dual-language newsletters (Appendix H) to around 89,000 households on Anglesey and in Gwynedd. The newsletters provided information on our plans and how people could take part in the consultation process. English and Welsh language consultation websites – [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) - were also developed.

Briefings were also held with local Members of Parliament, Assembly Members, local authorities and stakeholders to provide information about the Project and encourage participation in the consultation.

Three feedback forms (Appendix I), one for each package of work, were developed in both English and Welsh along with corresponding feedback form explanation booklets (Appendix J) which were designed to help people fill in the feedback forms. Feedback forms could be completed online via the consultation website and were available at our exhibitions. Feedback could also be submitted via the Project email address and by letter through the Project freepost address.

During the first stage of consultation, we held **35 exhibitions** across Anglesey and Gwynedd which were attended by 736 people.

### Feedback

The views of local people, organisations and bodies are very important to us. We received 1,549 pieces of feedback during this stage of consultation. This included 1,057 campaign postcards and responses from 38 stakeholder organisations. Every feedback form, letter and email received was recorded, analysed and has been responded to in this **Feedback Report**. We're continuing to consider all of the feedback received as part of our decision making process.

### Comments on the strategic options National Grid considered

It was clear from the feedback received that the majority of respondents felt we should put the connection in the sea. Respondents felt a subsea connection would have the least visual impact and the least impact on tourism and the wider economy, as well as being a better option environmentally. To read all of the responses received on the options we considered, please see Appendix A and for our responses please see chapter seven.

### **Comments on the Wylfa-Pentir package of work**

The Wylfa-Pentir feedback form asked respondents to select the route corridor and the Menai Strait crossing option they felt was the most appropriate and to identify locations they consider sensitive. Of those who expressed a preference from the four route corridor options we presented – orange, purple, yellow and blue – the highest number, 121 out of 153 members of the public, selected the orange corridor. Of the five Menai Strait crossing options presented: A, B, C, D and E – the highest number, 92 out of 131 members of the public, felt option B was the most suitable.

However, many of the respondents did express concerns about the visual effect an additional overhead line on Anglesey would have, particularly in sensitive areas such as the Anglesey Area of Outstanding Natural Beauty and at the Menai Strait. Additionally, a number of locations on Anglesey and in Gwynedd were identified as being sensitive due to their environmental, visual, historic, local, community or tourist importance.

To read all of the responses received on the Wylfa-Pentir package of work, please see Appendix B and for our responses please see chapter eight. To see all the sensitive locations respondents identified, please see National Grid's *Sensitive locations map* and to see the geographical distribution of people who responded to this question, please see our *Sensitive locations postcode response map*. Both maps can be found in Appendix T.

### **Comments on the West Gwynedd package of work**

The West Gwynedd feedback form asked respondents to select the substation site they felt was the most appropriate. Three sites were provided; Northern, Central and Southern. The highest number, nine out of 18 people, selected the Southern site as their preference. Respondents also asked what measures National Grid would take to reduce the visual impact of the substation. To read all of the responses received on the West Gwynedd package of work, please see Appendix C and for our responses please see chapter nine.

### **Comments on the Glaslyn Estuary package of work**

The Glaslyn Estuary feedback form asked respondents to comment on our proposed route corridor and potential route alignment for the additional underground connection at the Glaslyn Estuary. Respondents said they had concerns about the railway in the area and the effect the construction process could have. To read all of the responses received on the Glaslyn Estuary package of work, please see Appendix D and for our responses please see chapter 10.

### **Comments on National Grid's consultation in North Wales**

All three feedback forms also asked respondents to comment on National Grid's consultation. Respondents told us that the information we presented was useful. However, they also challenged the consultation as a subsea/underground connection was not put forward as an option. To read all of the responses received on our consultation, please see Appendix E and for our responses please see chapter 11.

### **Next steps**

We're continuing to consider all of the feedback we received and are continuing to speak with statutory consultees, expert bodies and organisations regarding our plans.

Since the Need Case and SOR were developed, other new sources of energy generation have been proposed which we will need to connect to the electricity network in North Wales. An agreement has been signed with Codling Wind Park Ltd to connect 1GW of offshore wind energy sited off the coast of Ireland. This is in addition to the agreement that had previously been signed with Greenwire to connect 1GW of Irish offshore wind energy to our existing substation at Pentir, Gwynedd. This substantial increase in generation means that we are now checking our initial proposals carefully to ensure they still remain appropriate.

Since the consultation, Horizon has changed ownership and has indicated the amount of energy the nuclear power station will generate will change together with its timeframes.

We are working closely with all of the energy generators to understand their requirements and we will be keeping communities up to date as our proposals move forward. There will also be further opportunities for people to provide feedback as part of the consultation process.

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<b>Appendix B:</b>	<b>Wylfa-Pentir responses</b> – sets out the analysis of the representations received from stakeholders and the public on the route corridor options from Wylfa, the Menai Strait crossing options and sensitive locations
<b>Appendix C:</b>	<b>West Gwynedd responses</b> – sets out the analysis of the representations received from stakeholders and the public on the proposed new substation site options in West Gwynedd
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<b>Appendix I:</b>	Feedback forms (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) – dual language
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<b>Appendix K:</b>	Public exhibition attendance
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<b>Appendix T:</b>	Sensitive locations map & Sensitive locations postcode response map
<b>Appendix U:</b>	Anglesey Energy Island Programme advertorial
<b>Appendix V:</b>	Abbreviations

## **1.0 INTRODUCTION TO THE FEEDBACK REPORT**

### **1.1 Overview**

- 1.1.1 The purpose of this Feedback Report on Stage One Consultation is to provide an account of the first stage of the pre-application process, a summary of the consultation representations received, National Grid's response to those representations, and how they will be taken into account by National Grid in developing the North Wales Connection Project. The scope of Stage One Consultation was to invite the views of statutory and non-statutory consultees and the public and local communities living in the vicinity of the proposed works on a range of issues.
- 1.1.2 This Stage One Consultation Feedback Report will inform the Project's final Consultation Report, which will be provided to the National Infrastructure Directorate of the Planning Inspectorate (as required under Section 37 (3) (c) of the Planning Act 2008), should an application for a Development Consent Order (DCO) be made.
- 1.1.3 For the avoidance of doubt, this stage of consultation is not intended to fulfil the statutory requirements of Section 37 and Section 47 of the Planning Act 2008 to consult about any proposed application. Stage One Consultation provides stakeholder organisations and the public with an opportunity to shape the design of the Project at a very early stage.
- 1.1.4 In preparing the Stage One Consultation Feedback Report, regard has been given to guidance and advice notes prepared by the IPC/NID and Government, in particular the Department for Communities and Local Government (DCLG) Guidance on pre-application consultation under the Planning Act 2008 (September 2009).
- 1.1.5 This Feedback Report details the consultation activities undertaken during Stage One Consultation.

### **1.2 National Grid**

- 1.2.1 National Grid operates the national electricity transmission system across Great Britain and owns and maintains the network in England and Wales, transmitting electricity supplies from generating stations to local distribution companies and large industrial consumers. National Grid does not distribute electricity to individual domestic premises, but its role in the wholesale market is fundamental to ensuring a reliable and quality supply of electricity to all.
- 1.2.2 National Grid's high voltage electricity system, which operates at 400,000 (400 kV) and 275,000 (275 kV) volts, is made up of approximately 22,000 pylons with an overhead line route length of approximately 4,470 miles; approximately 870 miles of underground cable and 329 substations. Separate regional companies own and operate the electricity distribution networks that comprise overhead lines and cables at 132,000 (132 kV) volts and below. It is the role of these local distribution companies to distribute electricity to homes and businesses.

### **1.3 National Grid's commitment to engagement**

- 1.3.1 Stakeholder and public involvement is an important component of the UK planning system. Legislation and government guidance aims to ensure that the public, local communities, statutory and other consultees and interested parties have an opportunity to have their views taken into account throughout the planning process.
- 1.3.2 National Grid is committed to engaging those communities affected by its activities in effective and meaningful consultation as reflected in its '*Stakeholder, Community and Amenity Policy*' (Appendix F), which incorporates National Grid's Schedule 9 Electricity Act 1989 Statement relating to the preservation of amenity when undertaking electricity works. In so doing, National Grid hopes to develop proposals in a way that best meet society's requirements.
- 1.3.3 Under Section 38 and Schedule 9 of the Electricity Act 1989, National Grid has a duty, when putting forward proposals for new development, to have regard to the desirability of the preservation of amenity, the natural environment, cultural heritage, landscape and visual quality, as well as the effect of works on communities.
- 1.3.4 National Grid aims to ensure effective, inclusive and meaningful engagement with local communities, statutory consultees, stakeholders and interested parties, when undertaking electricity works, through the ten commitments as set out in National Grid's '*Stakeholder, Community and Amenity Policy*' (Appendix F).



## 2.0 INTRODUCTION TO THE PROJECT

### 2.1 The Project

- 2.1.1 National Grid received a number of applications to connect generators to the transmission system in North Wales. Offers to connect have now been made and accepted by the applicants. As such, National Grid has contractual and licence obligations to carry out the necessary transmission works to enable these generators to connect.
- 2.1.2 The Need Case and Strategic Options Report (SOR) were based on National Grid's contractual need at the time to connect 5.6 gigawatts (GW) of new generation to the national electricity transmission network at or in the vicinity of Wylfa. Horizon Nuclear Power has a connection agreement for a new nuclear power station at Wylfa with a generation capacity of 3.6 GW. Celtic Array has an agreement to connect 2 GW of grid capacity from the Rhiannon Wind Farm in the Irish Sea to Anglesey. The Need Case and SOR were prepared before an agreement with Greenwire was signed to connect 1 GW of Irish onshore wind energy. As a result, the reports focus on the connection of the 5.6 GW to be connected on Anglesey and section 15 of the SOR recognises that a connection for Greenwire was still being evaluated. A further agreement has also since been signed with Codling Wind Park Ltd to connect 1 GW of offshore wind energy sited off the coast of Ireland. National Grid proposes to connect both of these projects to its existing substation at Pentir. National Grid is also aware that Horizon Nuclear Power's development proposals have changed and is working with our customer to understand whether this might alter their connection requirements.
- 2.1.3 The UK Government stated in its July 2009 White Paper '*The UK Low Carbon Transition Plan – National Strategy for Climate Change*' that the UK electricity network needs to expand to connect new sources of generation required to achieve the Government's carbon and energy goals. The report also noted that the Electricity Networks Strategy Group (ENSG), the DECC-Ofgem co-chaired industry group, has produced a vision for network investments that would be required in order to meet its 2020 renewable energy targets. The ENSG documents were updated in January 2012.
- 2.1.4 National Grid is obliged by its transmission licence to provide a connection to parties seeking to use the transmission system. In making these connections, National Grid seeks to ensure that they are efficient, coordinated and economical, maximising utilisation of the existing infrastructure wherever possible.
- 2.1.5 In order to comply with its transmission licence, National Grid needs to undertake work to connect the new sources of generation to the transmission system in a secure and reliable way. Following its strategic options process, National Grid's preliminary preferred option is for an overland connection, which consists of three key packages of work:
- **An additional overhead connection between Wylfa and Pentir** to connect new low-carbon generation sources located at Wylfa and in the Irish Sea to the existing network in North Wales.
  - **A new substation in West Gwynedd to provide an alternative means of maintaining reliable supplies in the area**, including to the Llŷn Peninsula, allowing National Grid to release spare capacity on the existing transmission line.
  - **An additional underground connection at the Glaslyn Estuary** to strengthen the network to be able to handle the increased amount of energy in the system.
- 2.1.6 **Wylfa to Pentir** – the existing 400 kilovolt (kV) overhead line on Anglesey runs between a National Grid substation at Wylfa and one at Pentir, Gwynedd. Even when the existing 1 GW Magnox nuclear power station has been decommissioned, the existing overhead line would not be able to accommodate all of the new generation that is being proposed.
- 2.1.7 National Grid's *Wylfa-Pentir Initial Route Corridor Report* (available to download on the Project website – [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) identified four possible route corridors across Anglesey and five possible options across the Menai Strait to Pentir. A route corridor is a broad width of land within which the new connection could be built. The corridor could be very wide in some places (up to 4km) while in others it may be more restricted as a result of constraints such as towns and villages, population density and designated environmental areas.
- 2.1.8 **West Gwynedd** – a new substation in West Gwynedd would be needed to maintain reliable supplies to homes and businesses in the area. National Grid currently shares the existing overhead line in West Gwynedd with local energy supplier SP Manweb.

- 2.1.9 To accommodate the extra power being proposed in North Wales, National Grid would need to make use of the wires on both sides of the overhead line between Pentir and Trawsfynydd. To allow this to happen, a new substation near to the existing line is proposed to strengthen the network, ensuring reliable electricity supplies are maintained to surrounding areas including the Llŷn Peninsula.
- 2.1.10 National Grid's *West Gwynedd Substation Siting Study* (available to download on the Project website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)), took account of amenity and environmental considerations, the effects on local communities and suitability for transport access. After conducting a thorough search of 20 potential sites, three suitable site options near Bryncir have been identified for a substation: Northern (north of the village), Central (west of the village) and Southern (south of the village). Only one of these substation sites will be taken forward.
- 2.1.11 **Glaslyn Estuary** – to handle the increased energy in the network, an additional connection would be needed at the Glaslyn Estuary. The existing overhead electricity line in West Gwynedd runs from Pentir to Trawsfynydd. It changes to underground cables at Wern, to the west of Tremadog. The connection then remains underground for approximately 6km, recognising the environmental sensitivities of the estuary and views into Snowdonia National Park. It then resurfaces at Y Garth near Minffordd and changes to an overhead line again, before continuing to Trawsfynydd.
- 2.1.12 National Grid's *Glaslyn Estuary Route Corridor Report* (available to download on the Project website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)), identified a potential route for the new connection to take. A route corridor is a broad width of land within which the new connection could be built. National Grid calls the actual path the cables could take a route alignment.
- 2.1.13 In identifying the route corridor and potential route alignment, careful consideration has been given to environmental and social factors, possible impacts on local communities, as well as financial and engineering constraints.
- 2.1.14 Details on the Project drivers, strategic options considered for the North Wales Connection Project and the identification of route corridors, crossing options and substation sites can be found in the following documents, all of which are available to download from the North Wales Connection Project website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru):
- **Need Case** – explains why the project is needed.
  - **Strategic Options Report** – explains National Grid's selection and appraisal of the options it considered for connecting the proposed new energy generation.
  - **Wylfa to Pentir Initial Route Corridor Report** – examines and identifies the preliminary potential overhead route corridors between Wylfa and Pentir.
  - **West Gwynedd Substation Siting Study** – examines and identifies suitable site options for a substation in West Gwynedd.
  - **Glaslyn Estuary Route Corridor Report** – examines National Grid's preliminary preference for an underground connection and identifies a proposed route corridor and potential route alignment at the Glaslyn Estuary.

## 2.2 Project development to Stage One Consultation

2.2.1 The development of the North Wales Connection Project involved the following stages:

- **Strategic options** – to identify where and by what means the proposed new energy generation might be connection to the electricity network in North Wales.
- **Route corridor and substation siting study** – to define potential route corridors, crossing options and substation siting areas based on consideration of relevant constraints.
- **Stage One Consultation** – to obtain the views of statutory and non-statutory consultees, and the public and local communities living in the area on National Grid's preliminary preferred connection option.

2.2.2 At each stage of the Project, consultation responses will be considered and previous decisions reconsidered and 'back checked' to determine if National Grid's decision is still appropriate.

## 2.3 Planning requirements

2.3.1 The three key packages of work are subject to different planning requirements.

2.3.2 **Wylfa to Pentir** – the proposed works between Wylfa and Pentir are likely to be a Nationally Significant Infrastructure Project (NSIP) as defined under the Planning Act 2008. This would require National Grid to make a DCO application to the Planning Inspectorate for the Secretary of State to make a final decision on.

2.3.3 Under the requirements set out in the Planning Act 2008, National Grid is required to undertake consultation on the Wylfa to Pentir package of work. In order to give the public opportunity to comment on the Project as a whole, National Grid extended its Stage One Consultation and sought views on all three packages of work.

2.3.4 **West Gwynedd** – the proposed new substation and other associated works in West Gwynedd would require planning permission in accordance with the Town and Country Planning Act 1990. Planning applications would be submitted to, and determined by, Gwynedd Council.

2.3.5 **Glaslyn Estuary** – the installation of underground electricity cables are likely to constitute 'permitted development' as defined by the Town and Country Planning General (Permitted Development) Order 1995. This would include minor works at existing compound sites and temporary works. However, there is the prospect that some of the temporary works associated with construction activities may require planning consent.

## 3.0 STAGE ONE CONSULTATION

### 3.1 Overview

- 3.1.1 Stakeholder and public involvement is an important component of the UK planning system. Legislation and government guidance aims to ensure that the public, local communities, statutory consultees and other interested parties are given an opportunity to have their views taken into account throughout the planning process.
- 3.1.2 National Grid believes that early consultation with stakeholders and the public can have significant benefits in developing a project. It enables the most acceptable solution for society to be taken forward and will result in proposals being modified such that the final solution is of the highest quality and properly addresses all the relevant considerations.
- 3.1.3 In order to achieve this, National Grid has aimed to ensure effective, inclusive and meaningful engagement with the local community, statutory consultees and other interested parties. National Grid is committed to engaging with those communities affected by its activities in effective and meaningful consultation, as reflected in its '*Stakeholder, Community and Amenity Policy*' (Appendix F) which incorporates National Grid's Schedule 9 Electricity Act 1989 Statement relating to the preservation of amenity.
- 3.1.4 The consultation process for the North Wales Connection Project will consist of three main stages:
- **Stage One** – Strategic options and route corridor consultation
  - **Stage Two** – Preliminary preferred corridor and draft route consultation
  - **Stage Three** – The proposed application consultation
- 3.1.5 On 3 October 2012, National Grid publicly launched its Stage One Consultation, which ran until 18 January 2013. In this first stage of consultation National Grid asked the public for their opinions on its strategic options and preliminary preferred option for the North Wales Connection Project, which consists of three key packages of work listed above. The objective of the Stage One Consultation was to:
- Explain the background and need case for the Project.
  - Explain the process National Grid has used to identify its preliminary preferred strategic option and demonstrate why it believes this is the most appropriate option based upon engineering, environmental, economic and community considerations.
  - Invite the views of statutory and non-statutory consultees, other bodies, the public and local communities about the proposed works and, specifically, views on National Grid's preliminary preferred option.
  - Explain how National Grid has identified the route corridor options between Wylfa and Pentir, the route corridor and potential route alignment at the Glaslyn Estuary and the potential sites for a new substation in West Gwynedd.
  - Gather views on the preliminary preferred strategic option, route options and substation sites, together with any other information stakeholders and the public felt National Grid should be made aware of.
- 3.1.6 This section of the report sets out the details of early pre-consultation stakeholder engagement conducted by National Grid, the development of the *Consultation Strategy* and the consultation activities undertaken during Stage One Consultation.

### 3.2 Early pre-consultation stakeholder engagement

- 3.2.1 National Grid considered it important to engage with statutory and non-statutory consultees at an early stage in the development of the North Wales Connection Project. At the commencement of the Project, National Grid consulted with selected statutory and non-statutory consultees, including officers from the relevant local authorities. This was to enable a greater understanding of the local area and to develop the best approach to consultation.

Those consulted included:

- Isle of Anglesey County Council
- Gwynedd Council
- Environment Agency Wales
- Welsh Assembly Government
- Ministry of Defence (MoD) – Defence Estates
- Countryside Council for Wales (CCW)
- Snowdonia National Park
- Cadw
- Ofgem Wales
- Gwynedd Archaeological Trust
- NFU Wales
- Farmers Union of Wales
- Campaign for the Protection of Rural Wales (CPRW)
- Magnox North
- National Trust
- County Land & Business Association

3.2.2 During the period from winter 2011 to summer 2012, early pre-consultation engagement took place with North Wales Members of Parliament (MPs) and Assembly Members (AMs) to provide an overview of the background to the Project and why it is needed. During this phase, meetings were also held with Isle of Anglesey County Council and Gwynedd Council.

3.2.3 Building on this stakeholder engagement, National Grid ensured that relationships with relevant local authorities, statutory consultees and other bodies remained strong by meeting and updating them regularly. National Grid meets with local authority officers and members from Isle of Anglesey County Council and Gwynedd Council and will continue to do so throughout the Project. This is an ongoing process which influences and shapes National Grid's approach to the Project and to consultation.

### **3.3 Approach to Stage One consultation**

3.3.1 The Planning Act 2008 places a requirement on a developer of Nationally Significant Infrastructure Projects (NSIP) to consult with interested parties including the public, local authorities and statutory bodies regarding any proposed application. As part of these requirements a developer is required to produce a *Statement of Community Consultation (SoCC)* that sets out its approach to consultation. If the National Grid North Wales Connection Project proceeds with its preliminary preferred option of an overhead line, the application for the new transmission connection would be made under the Planning Act 2008.

3.3.2 Underground cables in England and Wales are considered as permitted development which means they do not require a discrete planning permission. Any planning applications for associated above-ground infrastructure such as sealing end compounds and substations are determined by the relevant local planning authority, usually under the Town & Country Planning Act. Should an application in Wales go to appeal, a decision would be considered under joint jurisdiction of the Welsh Government and the Department of Energy and Climate Change (DECC) as to whether permission should be granted; in England appeal decisions would be made by the relevant Secretary of State.

3.3.3 Given the range of options currently being considered, and the consequent uncertainty around the final form of any application, it was not appropriate for Stage One Consultation to be treated as formal pre-application consultation. Accordingly, National Grid produced a *Consultation Strategy* rather than a formal SoCC for its Stage One Consultation. A SoCC will be prepared at a later stage of the Project should the proposed connection be constructed wholly or partly overhead.

3.3.4 The *Consultation Strategy* was developed with relevant local authorities and includes the following information: the Project description; background information on National Grid; a description of National Grid's consultation approach including the various engagement techniques that would be utilised; and an explanation of how feedback could be submitted.

3.3.5 National Grid considered the information received from the local authorities to be vital in shaping its overall approach to consultation. National Grid has worked, and continues to work with, Isle of Anglesey County and Gwynedd Council to ensure that they are kept fully informed.

- 3.3.6 To ensure the consultation programme was made as accessible as possible to the wider community the following actions were undertaken:
- 3.3.7 **Conducting a ‘public awareness survey’** - National Grid decided that research would be undertaken at various stages throughout the lifetime of the Project to gain further insight into the views of people in North Wales and monitor the effectiveness of the consultation process. As such, a telephone survey was conducted in August 2011 targeting 500 randomly selected respondents across Anglesey (sub-divided into five survey areas – see Appendix L), with a £2 charity donation given to the RNLI for each completed survey.
- 3.3.8 The first wave of research was a means of investigating the views of local residents on low carbon energy projects, both nationally and locally in North Wales. It was designed to assess the baseline level of understanding and knowledge about the electricity transmission network and the role of National Grid, as well as being an opportunity to obtain feedback on the most appropriate method of communicating information about new projects. Respondents were able to conduct the survey in Welsh and eight out of 500 chose to do so. Five people chose not to take part in the survey. The first wave of research highlighted the following:
- Residents gave an average rating of 5 out of 10 to reflect their level of concern about the development of the electricity transmission system
  - 62 percent were aware that upgrades to the transmission infrastructure will be necessary for new energy generation
- 3.3.9 There was recognition by participants of the importance of taking part in consultation. However almost 50 percent of those questioned indicated that they would not take part, citing ill health or disability as the main reason, particularly in terms of travelling to exhibitions. To address this, National Grid provided a wide geographical spread of exhibition locations to help minimise travelling distance. In addition, a mobile exhibition vehicle was used to take the consultation directly to more remote communities and in doing so provide an accessible consultation.
- 3.3.10 The survey concluded that 60 percent of people preferred to receive information via letter or through the post. Therefore, National Grid did not depend solely on web-based consultation and:
- Posted the Project newsletter to all households on Anglesey and those that could be potentially affected by the proposed works on the mainland;
  - established a freephone number to enable direct contact with the consultation team for information and;
  - placed key Project documents in public locations across Anglesey and the mainland and;
  - made sure a reasonable number of geographically spread public consultation events were held in order to maximise direct engagement.
- 3.3.11 **Hard to reach groups** – through consultation with Isle of Anglesey County Council and Gwynedd Council, National Grid developed its schedule of ‘hard to reach groups’ (Appendix M). National Grid approached each group directly to advise them of its consultation and to obtain feedback with regard to the most appropriate method of engagement. It was recognised that some groups would need a bespoke approach and National Grid made every effort to ensure the consultation process was as inclusive as possible.
- 3.3.12 **Profile raising** – National Grid attended ten Horizon Nuclear Power public consultation events in November 2010. Additionally, National Grid attended Horizon Nuclear Power’s monthly drop-in surgeries throughout 2011 and 2012 in order to engage with the public and to provide updates on its work.
- 3.3.13 **Anglesey Show** – National Grid has attended the Anglesey Show since 2010 in order to engage with the public and to provide an update on its work and responsibilities in the local community. This county show is one of the largest community events held on the island and attracts approximately 58,000 visitors across two days.
- 3.3.14 **Schools engagement** – in order to reach a wide sector in the local community, National Grid engaged with Ysgol Syr Thomas Jones, Amlwch, in July 2011 and conducted interactive workshop lessons about the Project.
- 3.3.15 **The Anglesey Energy Island Programme** – National Grid has attended regular meetings with Anglesey Energy Island Programme representatives to discuss the North Wales Connection Project, its progress and consultation approach. As part of this, an advertisement was produced with the Anglesey Energy Island Programme outlining the Project proposals (Appendix U).

### **3.4 Who did National Grid consult**

3.4.1 Appendix N identifies the stakeholders that National Grid consulted during Stage One Consultation.

#### ***Local Authorities***

3.4.2 National Grid approached the following local planning authorities and offered them the opportunity to take part in its Stage One Consultation:

- Isle of Anglesey County Council
- Gwynedd Council
- Conwy County Borough Council
- Flintshire County Council
- Denbighshire County Council
- Wrexham County Borough Council

3.4.3 Of the above, engagement primarily took place with Isle of Anglesey County Council and Gwynedd Council as the authorities within which National Grid's works is proposed. Consultation and discussions with both authorities has been extensive, regular and ongoing and has included briefing sessions and stakeholder previews ahead of the Stage One Consultation events. This includes meetings held with officers and members at both councils.

3.4.4 Prior to the start of the public exhibition events, National Grid held dedicated exhibition evenings on Anglesey and in Gwynedd, to which all statutory consultees, MPs and AMs, local authority members and community councils were invited. The exhibition evenings took place on 17, 18 and 19 October 2012. National Grid also sent all planning authorities a CD containing the Project's key technical documents in early December 2012.

#### ***Statutory Consultees***

3.4.5 A full list of the relevant statutory consultees identified for the Project can be found in Appendix N. Advance discussions took place ahead of the public launch of Stage One Consultation and helped inform National Grid's preliminary preferred option on which it consulted. National Grid remained in regular contact with statutory consultees throughout Stage One Consultation. Prior to and during Stage One Consultation briefings were held with:

- Isle of Anglesey County Council
- Gwynedd Council
- Environment Agency Wales
- Plaid Cymru and Welsh Assembly Government
- Labour Party, Central Government
- Snowdonia National Park
- Countryside Council for Wales
- Cadw
- Gwynedd Archaeological Trust
- Ministry of Defence

3.4.6 In line with the launch of the Project, statutory consultees were sent information about the Project including the Project newsletter (Appendix H).

### **Local Members of Parliament (MPs) and Assembly Members (AMs)**

3.4.7 Early in the consultation process National Grid identified MPs and AMs whose constituencies could be affected by its proposed works. Advance briefings on the Project were offered to all of the MPs and AMs identified, and information about the Project including the Project newsletter and FAQ were sent directly to them. See *Table 1 'AM and MP Briefings'* for a list of the AMs and MPs that were briefed on the project. National Grid remains in regular contact with these representatives.

#### **3.4.8 Table 1 'AM and MP Briefings'**

<b>Briefings held with:</b>
Ieuan Wyn Jones AM
Hywel Williams MP
Alun Ffred Jones AM
Dafydd Elis-Thomas AM
Albert Owen MP
Elfyn Llwyd MP
Rt Hon Lord Dafydd Wigley
Antoinette Sandbach AM
Aled Roberts AM

3.4.9 At the point of the Project launch, newsletters along with the FAQ were sent to the following AMs:

- Llyr Huws Gruffydd AM
- Mark Isherwood AM
- Aled Roberts AM
- Antoinette Sandbach AM
- Ieuan Wyn Jones AM

### **Community Councillors**

3.4.10 At the point of the Project launch, National Grid sent Isle of Anglesey County Council and potentially affected Gwynedd Council community council clerks Project information including the Project newsletter and FAQ. Clerks were also sent invitations for issue to community councillors inviting them to dedicated presentations organised for political stakeholders.

3.4.11 As Stage One Consultation progressed, National Grid engaged with several community councillors who directly contacted National Grid, submitted feedback or spoke to a Project team member at an exhibition.

3.4.12 Following the launch of Stage One Consultation, National Grid conducted briefings with community councils as requested. See *Table 2 'Details of meetings and briefings with community councillors'* for details of the community councils that were briefed. National Grid remains in regular contact with community councils.



### 3.4.13 Table 2 'Details of meetings and briefings with Community Councils'

Date	Body
13 November 2012	Plaid Cymru public meeting, (invitation received 9 November 2012). The Project team was unable to attend due to short notice but sent a statement on behalf of National Grid to be read out during the meeting.
19 November 2012	Menai Bridge Community Council
20 November 2012	Llanddyfnan Community Council
N/A	Mechell Community Council: A letter requesting attendance at one of Mechell Community Council's meeting was received on 28 October 2012; National Grid responded to arrange a meeting. A representative from Mechell Community Council attended National Grid's exhibition on 5 November 2012.

#### **Other non-statutory consultees**

- 3.4.14 National Grid wrote to its existing grantors (landowners with National Grid equipment on their land) within the Project area to introduce the North Wales Connection Project and Stage One Consultation.
- 3.4.15 At the point of the Project launch, National Grid sent letters to its hard-to-reach groups explaining the Project and including the Project newsletter and FAQ. National Grid followed up with phone calls to all groups offering a briefing on the Project (for list of hard-to-reach groups see Appendix M).
- 3.4.16 Following on from the Project launch, Gwynedd Disability Forum contacted National Grid requesting further information on the Project. National Grid's Lead Project Manager presented to the Forum on 10 December 2012.
- 3.4.17 During Stage One Consultation National Grid regularly attended the Wylfa Project Liaison Group meetings and open surgery days held by Horizon Nuclear Power.

#### **Local communities**

- 3.4.18 In identifying which communities National Grid would consult with as part of the Stage One Consultation, National Grid considered the scope of its work. Consultation zones were identified and agreed as part of the discussions with Isle of Anglesey County Council and Gwynedd County Council on the Consultation Strategy.
- 3.4.19 Following this, National Grid identified two consultation zones for the Wylfa-Pentir works which are summarised below and shown in the maps in Appendix O.

**Consultation Zone One** – this zone includes the whole of Anglesey and encompasses all the works that could take place on the island with variations of engagement depending on proximity to the route corridors and crossing options.

**Consultation Zone Two** – this zone encompasses all areas on the mainland where communities could be affected by the Wylfa-Pentir works being proposed. The zone consists of two areas:

- **Primary Consultation Zone** – this zone extends 2km either side of the broad route corridors National Grid is consulting on and the existing substation at Pentir. The primary consultation zone was engaged via direct contact including Project newsletters and newspaper advertisements. Consultation exhibitions were primarily located within this zone.

- **Secondary Consultation Zone** – this zone encompasses all those households that are more than 2km from the route corridors and crossing options. This zone was identified as being less likely to be affected by National Grid’s proposals. The secondary zone was engaged primarily through local and regional media channels, including newspaper advertisements.

Consultation zones for West Gwynedd and Glaslyn Estuary were also developed and are shown in the maps in Appendix O.

3.4.20 When consulting and engaging with local communities a variety of communication tools were used including direct mail, public exhibitions and through online channels.

### **3.5 How did National Grid consult**

3.5.1 National Grid’s approach to consultation is in accordance with the IPC Guidance Note 1 on Pre-Application Stages (March 2010) (Now NID Advice Note 16) and the Department for Communities and Local Government (CLG) Guidance on Pre-Application Consultation (September 2009).

3.5.2 In accordance with this guidance, a range of methods and techniques were used during National Grid’s Stage One Consultation to ensure as many sections of the community were involved as possible. The consultation approach National Grid undertook was informed by discussions with the relevant local planning authorities. Stage One Consultation activities were intended to ensure that people:

- Had access to Project information
- Were able to put forward their own views and feel confident that there was a process in place for considering any issues raised
- Played an active role in developing National Grid’s proposals
- Could comment on and influence formal proposals
- Received responses and were informed about progress and outcomes

3.5.3 A list of the locations where Project information was made available to the public can be found in Appendix P.

3.5.4 National Grid is committed to ensuring the consultation process and associated communications are made as accessible to as many parts of the community as possible. In accordance with this and in line with the Welsh Language Act, all key consultation materials for Stage One Consultation were produced in English and Welsh. This included:

- Project newsletter (including audio versions) and covering letters
- FAQ
- Feedback forms and feedback form explanation booklet
- Project maps
- Adverts and posters
- Project website

3.5.5 All other documents, with the exception of technical documents, were available in Welsh on request.

3.5.6 As part of this, Welsh speaking members of the Project team were in attendance at every public exhibition. National Grid also provided the option to speak to a Welsh speaker when calling the consultation freephone number and, as advised by Isle of Anglesey County Council, provided a facility for stakeholders unable to attend public meetings to speak with a Welsh-speaking member of the National Grid team upon request.

### **Public Exhibitions**

3.5.7 A total of 35 public exhibitions were held throughout the consultation area at publicly accessible venues and locations. This comprised of 23 static exhibitions and 12 mobile exhibitions using the consultation vehicle. The public exhibitions ran from 20 October to 1 December 2012 and were widely publicised through the Project website, Project newsletters, local newspaper advertising and letters sent directly to stakeholders (see below). The locations and dates of the public exhibitions are detailed in Appendix Q.

- 3.5.8 At the public exhibitions, people were able to view National Grid's proposals and talk to the Project team. Comprehensive information about the Project was made available at the public exhibitions with copies of key Project materials and maps available to take away. All materials available at the exhibitions were also available on the Project website – [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)
- 3.5.9 National Grid fielded large consultation teams for each public exhibition to ensure as many people as possible had the opportunity to engage directly with the Project team. These typically comprised between six and 12 individuals depending on the location of the exhibition and the anticipated level of interest. At least one Welsh-speaking team member was present at every exhibition.
- 3.5.10 National Grid ensured the consultation team contained individuals with specialist expertise in key areas including planning, environment, health, construction (including overhead and underground line construction), the consultation process and transport to help ensure as many people as possible received comprehensive answers to their questions.
- 3.5.11 National Grid produced information request forms that were available at every exhibition. Using these, respondents could request additional copies of any of the materials displayed at the public exhibitions.
- 3.5.12 During National Grid's period of public exhibitions, Celtic Array carried out its Stage 1 statutory consultation between 29 October to 20 December 2012. As part of this consultation, Celtic Array held public exhibitions where National Grid provided information on its proposals. Additionally, at the public exhibitions held for the Wylfa-Pentir package of work there was a member of the Horizon Nuclear Power Project team available to answer any questions on the proposed nuclear power station at Wylfa.
- 3.5.13 During Stage One Consultation, National Grid liaised with Holyhead and Bangor shopping area managers to use empty shop units to display Project materials. However, this was not possible due to the festive period and the lack of suitable space.

### **Consultation vehicle**



- 3.5.14 To support the static public exhibitions, a mobile consultation vehicle was used to take the consultation to locations where, for example, suitable exhibition venues may not exist or areas that may not have accessible public transport links. 12 locations were visited by the consultation vehicle to provide local people with an opportunity to view National Grid's proposals, talk to the Project team and register comments. The locations and dates of the consultation vehicle exhibitions are detailed in Appendix Q.
- 3.5.15 National Grid ensured all the materials available at the static exhibitions was also available at the mobile exhibitions.

3.5.16 National Grid also researched areas with high footfall, such as garden centres, supermarkets and shopping centres with a view to making use of the consultation vehicle in these locations. After researching these areas however this was not possible due to lack of suitable space.

### **Project newsletter**

3.5.17 A covering letter and Project newsletter was issued on 3 October 2012 launching the Stage One Consultation. This newsletter provided an overview of the Project, explained National Grid's work to date, set out the purpose of the Stage One Consultation and how to take part in the consultation. The Project newsletter represented National Grid's main form of direct communication with local communities. A copy of the newsletter can be found in Appendix H.

3.5.18 The Project newsletter was distributed to just over 89,000 residents across Anglesey and Gwynedd in consultation zones one and two. The newsletter was timed to be received on Wednesday 3 October, two weeks ahead of the first exhibition.

3.5.19 Copies of the newsletter were made available at public and civic buildings and on the consultation website. Copies were also sent directly to all political, statutory and non-statutory stakeholders.

### **Feedback form**

3.5.20 Three feedback forms were developed for stakeholders and the public to provide their feedback and formally register their views as part of the Stage One Consultation. The three packages of work that form National Grid's preliminary preferred connection each had a separate feedback form. As part of the Stage One Consultation, the feedback forms asked for feedback on National Grid's preferred strategic option together with:

- **Wylfa-Pentir feedback form** – sensitivities and areas of concern within the study area and a preferred route corridor and crossing point across the Menai Strait
- **West Gwynedd feedback form** – the substation site options identified
- **Glaslyn Estuary feedback form** – the proposed route corridor and potential route alignment identified

3.5.21 Each feedback form provided a section for the public to provide feedback on the consultation process itself.

3.5.22 The feedback forms included a combination of open and closed questions with space for respondents to communicate additional views or comments. Copies of the feedback forms can be found in Appendix I.

### **Feedback form explanation booklet**

3.5.23 To sit alongside the feedback forms and help people to provide feedback that was as informed as possible, National Grid produced feedback form explanation booklets for the three packages of work. Copies of the feedback form explanation booklets can be found in Appendix J.

3.5.24 All three booklets contained a plain-language summary of National Grid's *Strategic Options Report*. Additionally, the booklets contained information on:

- **Wylfa-Pentir feedback form explanation booklet** – a summary and map of the route corridors and crossing options brought forward for Stage One Consultation
- **West Gwynedd feedback form explanation booklet** – a summary and map of each of the substation location options National Grid brought forward for Stage One Consultation
- **Glaslyn Estuary feedback form explanation booklet** – a summary and map of the proposed route corridor and potential route alignment brought forward for Stage One Consultation

### **Project website**

- 3.5.25 The address for the Project website is [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru). The website provided comprehensive information about the proposed development and included an FAQ section. All documents including relevant technical documents, exhibition materials and Project maps were available for download from the website.
- 3.5.26 The website also allowed for online consultation and included a dedicated area whereby visitors could complete and submit the Stage One Consultation feedback forms along with an interactive project map. The website was regularly updated throughout Stage One Consultation to reflect Project updates and will be continually updated as the Project progresses.
- 3.5.27 During Stage One Consultation, the English website received 2,979 hits and the Welsh website received 151 hits.

### **Social media**

- 3.5.28 National Grid's corporate Twitter account '*National Grid UK*' tweeted on 3 October 2012 in Welsh and English; '*National Grid begins first stage of consultation on proposals to connect new electricity generation in North Wales*' and included a link to the consultation website.
- 3.5.29 A short video explaining the background to the Project and National Grid's preliminary preferred option was made available on the Project website and on National Grid's YouTube channel.

### **Media relations**

- 3.5.30 To coincide with the launch of Stage One Consultation, a press release was issued to key media throughout the Project area. Additionally, a media day was held on 17 October 2012 at which members of the Project team were available at a location in the Project area for media interviews.
- 3.5.31 National Grid believes it is important that as many people as possible take part in the consultation process and worked closely with the local and regional media to publicise the Project and to reach out to communities.

### **Advertising and other promotion**

- 3.5.32 In promoting the Stage One Consultation, dual-language advertisements were placed in the *Holyhead and Anglesey Mail* (approx. circulation figure: 7,354) and *Caernarfon and Denbigh Herald* (approx. circulation figure: 9,154) for two consecutive weeks. These adverts listed the dates and locations of all of the public exhibitions. National Grid placed a third advert towards the end of the consultation advertising the remaining consultation events. Copies of the adverts can be found in Appendix Q.
- 3.5.33 Posters, identical to the press adverts, were also put up at each of the exhibition venues and were sent to community council clerks so they could be put up at community halls and village notice boards.

### **Inspection copies**

- 3.5.34 Project information packs including inspection copies of the newsletter, FAQ, feedback forms, consultation maps and key technical documents including the *Need Case*, *Strategic Options Report*, *Wylfa to Pentir Initial Route Corridor Report*, *West Gwynedd Substation Siting Area*, *Glaslyn Estuary Route Corridor Report* and '*Our approach to the design and routeing of new electricity transmission lines (2012)*', were made available to view free of charge from the start of Stage One Consultation at the locations identified in Appendix P.

### ***Close of Stage One Consultation***

- 3.5.35 National Grid has listened to people's concerns and believes that this Feedback Report represents a first step in addressing the issues that were raised during the Stage One Consultation. Chapters six to 11 of this Report set out National Grid's response to the issues raised and how National Grid has taken into account the feedback received.
- 3.5.36 Stage One Consultation closed on 21 December 2012. National Grid recognised the implications of the Christmas period and the potential for delay in postal responses and in response, continued to accept feedback up until 18 January 2013.

## 4.0 PROCESS FOR MANAGEMENT OF REPRESENTATIONS

### 4.1 Mechanisms for feedback

- 4.1.1 Three feedback forms were developed for respondents to formally register their views as part of the Stage One Consultation. Copies of the feedback forms can be found in Appendix I.
- 4.1.2 To sit alongside the feedback forms and help people give feedback that was as informed as possible, National Grid produced three feedback form explanation booklets for the three packages of work that form National Grid's preliminary preferred option. Copies of the feedback form explanation booklets can be found in Appendix J.
- 4.1.3 There were generic questions on all three feedback forms that sought views on the conclusions of National Grid's *Strategic Options Report* and National Grid's consultation process. Additionally the three feedback forms sought views on the three packages of work as detailed in above.
- 4.1.4 For this reason National Grid has presented the responses to the different questions and packages of work in the appendices as detailed below:
- **Appendix A - Strategic Options Report responses**
  - **Appendix B - Wylfa and Pentir responses**
  - **Appendix C - West Gwynedd responses**
  - **Appendix D - The Glaslyn Estuary responses**
  - **Appendix E – Consultation in North Wales responses**
- 4.1.5 Representations were received from both the public, statutory and non-statutory consultees. For the purpose of this Feedback Report, within each appendix set out above, the responses have been separated into '*stakeholder organisations*' and '*public*' to ensure the full range of views are reflected in the analysis and reporting.
- 4.1.6 Chapter 3 of this Feedback Report describes the methods of engagement used during the Stage One Consultation. There were a number of mechanisms by which responses to National Grid's proposals could be given to the Project team during the consultation period. These included:
- Emails to the dedicated Project email address
  - Completing the feedback forms, copies of which are available in Appendix I. All three feedback forms and the accompanying feedback form explanation booklets in Appendix J were available at the public exhibitions and could be handed in at events or returned later using the Project freepost address. The feedback forms could also be completed and submitted online
  - Letters submitted via the freepost address
  - In discussion with a member of the Project team, if this was the most appropriate mechanism for capturing an individual's feedback

### 4.2 Processing responses and correspondence

- 4.2.1 Responses to Stage One Consultation were received in two main formats, those that responded to the questions on the feedback forms and those that were received by other mechanisms which included letter or email. As a number of the questions on the feedback forms were open ended, and designed to allow for unconstrained comment on the proposals, it was felt that representations received in these separate formats could be analysed together.
- 4.2.2 A data protection statement informed the respondent that any comment made by them could be made available to the Infrastructure Planning Commission/National Infrastructure Directorate.
- 4.2.3 National Grid received a wide range of responses to its consultation that included responses answered directly to the questions on the feedback forms, responses that were brief and addressed only a single issue, to responses that were comprehensive, technical and related to a wide-range of concerns and issues.
- 4.2.4 All responses were logged, to record and store all correspondence with respondents and all representations. Once logged, consultation representations were then transferred to an electronic analysis system managed by Dialogue by Design. Each representation was analysed and all issues raised were captured, logged and coded.

4.2.5 To code responses the analysis team prepared an initial list of anticipated themes, which were then split into further codes enabling the analysts to understand the broader context of the response.

Codes were allocated to each theme and as the analysts reviewed the representations, questions, themes and issues were identified, recorded and coded. Location specific issues were also identified. The use of this two-tiered coding framework (themes and codes) assisted the efficient analysis of the representations and assisted further in-depth interrogation of the findings and data reporting.

4.2.6 Each consultation response was responded to with a standard acknowledgement. Where appropriate, factsheets, plans, maps and other publicly available material providing information about technical issues were sent back to the respondent with the response letter. For each response, National Grid's Project team would assess the representations received and determine which materials, if any, were appropriate to use.

4.2.7 The contact details of those making representations were recorded and used to build a communication database.

4.2.8 Any further representations received were (and continue to be) recorded and reviewed. National Grid will also continue to re-evaluate decisions in light of any new considerations raised.



## 5.0 OVERVIEW OF STAGE ONE CONSULTATION RESPONSES RECEIVED

### 5.1 Representations received

5.1.1 During the consultation period, 35 exhibitions were held from 20 October 2012 to 1 December 2012. A total of 736 visits were recorded at public consultation events. Appendix K details the number of attendees at each consultation event.

5.1.2 1,549 representations were received through different response mechanisms.

5.1.3 1,057 campaign letters were received in the form of postcards. These were processed, logged and analysed. The postcards were distributed by Plaid Cymru and invited members of the public to support certain statements.

5.1.4 Table 3 below identifies the number of representations received through the different response mechanisms.

#### 5.1.5 **Table 3 – Representations received between 20 October 2012 and 18 January 2013**

<b>Response type</b>	<b>Count</b>
Feedback forms Wylfa to Pentir	205
Feedback forms with attachment Wylfa to Pentir	8
Feedback forms West Gwynedd	9
Feedback forms with attachment West Gwynedd	1
Feedback forms Glaslyn Estuary	6
Feedback forms with attachment Glaslyn Estuary	3
Multi feedback forms	7
Campaign postcards	1,057
Letters	23
Online feedback forms	159
Emails	71
<b>Total</b>	<b>1,549</b>

5.1.6 89 representations were received in Welsh. These representations were digitalised with the other representations and sent to a professional translating service. The English translation received back was entered into the database along with the corresponding original Welsh representation, and analysis of the translation was carried out.

5.1.7 Consultation representations were all received, logged, processed and analysed by Dialogue by Design, a specialist in data analysis. Letters and paper feedback forms sent to the freepost address were logged and scanned and the data entered into an analysis database. Email submissions were forwarded to Dialogue by Design from the consultation website email box.

5.1.8 Online representations were exported from the website and imported directly into Dialogue by Design's analysis tool.

5.1.9 Four percent of the responses received were classified as null responses. A description of the null response types is below:

- Blank letter or letter without name or only an illegible signature
- Blank feedback form or feedback form without name or only an illegible signature

- Not a consultation response – wrong address or consultation
- Request for document/form

5.1.10 Any requests for documentation received by Dialogue by Design through the freepost address were logged, processed and uploaded to a secure server for the attention of National Grid. National Grid then issued the information requested accordingly. In total, approximately 300 requests for additional information were made, either in writing, via the freephone number or email. These were predominantly for extra copies of consultation maps and additional comment forms.

## 5.2 Stakeholder responses

5.2.1 A total of 38 stakeholders and stakeholder organisations made representations during the Stage One Consultation. CCW, Snowdonia National Park, CPRW, Ynys Môn Ramblers Group and Mechell Community Council all sent more than one representation.

5.2.2 Responses were received from the following stakeholders:

### **Statutory stakeholders**

- Asiantaeth yr Amgylchedd Cymru / Environment Agency Wales
- Bangor City Council
- Countryside Council for Wales (CCW)
- Cyngor Tref Porthaethwy / Menai Bridge Town Council
- Gwynedd Council's Cabinet
- Horizon Nuclear Power
- Isle of Anglesey County Council
- Network Rail
- North Wales Fire & Rescue Service
- Snowdonia National Park

### **Non-statutory stakeholders**

- Anglesey Economic Regeneration Partnership
- Anglesey Tourism Association
- Campaign for the Protection of Rural Wales (CPRW)
- CPRW Anglesey Branch
- CPRW Caernarfonshire Branch
- CPRW Meirionnydd Branch
- Cymdeithas Eryri – Snowdonia Society
- Federation of Small Businesses, Ynys Môn branch
- Ffestiniog Railway Company
- Malltraeth Ymlaen
- Môn a Gwynedd Friends of the Earth
- NFU Cymru
- RSPB
- The National Trust
- Welsh Highland Railway Ltd
- Wylfa PLG
- Ynys Môn Ramblers Group

### **Community councils**

- Aberffraw Community Council
- Cyngor Cymuned Llanddaniel-fab/Llanddaniel-fab Community Council
- Cwm Cadnant Community Council (Vice Chairman)
- Cyngor Cymdeithas Llanfaethlu a Llanfwrog / Llanfaethlu a Llanfwrog Community Council
- Y Felinheli Community Council<sup>1</sup>

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<sup>1</sup> Y Felinheli Community Council's feedback to National Grid's consultation was received following the close of Stage One Consultation. Its feedback has been analysed and all of the themes and issues raised by the council were themes already raised by other respondents so have been responded to in Chapters 6-11.

- Llanbadrig Community Council
- Llanddeiniolen Community Council
- Llanddyfnan Community Council
- Llanfairpwllgwyngyll Community Council
- Mechell Community Council
- Penmynydd Community Council
- Trewalchmai Community Council

### **Online feedback form error**

- 5.2.3 For a period at the beginning of the consultation, due to technical faults, the Wylfa-Pentir feedback form was not available online. The error was immediately identified and the feedback form was taken off the consultation website. National Grid ensured the hard copy of the Wylfa- Pentir Feedback form was available to download and respondents could print this off and post it back via the freepost address. The fault was fixed within two weeks and the online form was available from this point.

### **Comments received following 18 January 2013**

- 5.2.4 Stage One Consultation was held between 3 October and 21 December 2012. National Grid allowed four weeks (18 January 2013) after the close of consultation for representations to be processed through the Royal Mail postal system and also allowing for any delays as a result of the Christmas period. Representations received from 18 January 2013 up to the publication of this Report, are considered as *'post consultation feedback'*.
- 5.2.5 National Grid logged, analysed and considered all responses received following 18 January 2013 as part of its wider consideration and analysis of consultation feedback. Post 18 January 2013 responses were logged separately to those comments received during formal consultation.
- 5.2.6 Post 18 January 2013 consultation feedback generally raised matters/themes which were consistent with consultation feedback received during the formal consultation period, and a summary of these matters/themes, together with National Grid's response (where relevant) are included in Chapter 13. As such, common themes raised by respondents during the post consultation feedback period are included in the response analysis, which is used to inform National Grid's decision making process.

## **6.0 NATIONAL GRID'S RESPONSE TO GENERIC THEMES RAISED DURING THE CONSULTATION**

### **6.1 Overview of responses**

6.1.1 The following chapters address the themes and issues raised by respondents in response to Stage One Consultation, provide National Grid's considered response to these themes and issues, and how the issues raised will be taken into account by National Grid. The responses received are set out in detail in Chapters 7-11.

### **6.2 Introduction to generic themes raised**

6.2.1 From the 1,549 consultation responses received (including the 1,057 campaign postcards) a number of common themes emerged. These have been separated and analysed under a series of headings. The Project team has taken into account all the responses received. These have been through a rigorous back-check process to ensure all of the representations received have been considered.

6.2.2 These chapters do not address every specific issue raised. Instead responses are grouped together under thematic headings. National Grid will take into account all representations received, but it is not possible to list every single comment in this report. This is in accordance with Government guidance on '*pre-application consultation*', which sets out that:

*"The consultation report should set out a summary of relevant responses to consultation (but not a complete list of responses)".*

6.2.3 The responses from National Grid seek to address the questions and issues raised during Stage One Consultation, and not the specific person or group that made them. It may be that respondents other than those specifically identified have also raised the same question or made the same point. The aim of the responses from National Grid is to provide clear responses to the comments, questions and issues raised during Stage One Consultation.

## 7.0 STRATEGIC OPTIONS REPORT

### 7.1 Overview

- 7.1.1 During Stage One Consultation, respondents were asked to comment on whether they agreed with the preliminary findings of National Grid's *Strategic Options Report (SOR)* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) and asked to provide reasons for their response along with their comments on the SOR.
- 7.1.2 The following themes emerged from the comments received from the Wylfa-Pentir, West Gwynedd and Glaslyn Estuary feedback forms and the independent responses (including the pre-printed postcards).
- Strategic Options Report
  - Underground/Overhead
  - Subsea connection
  - Alternative options
  - National Grid's cost assessment
  - Need Case
  - Environmental impacts
  - Socio-economic impacts
  - Health, safety and security impacts
  - Engineering / Design and construction
  - West Gwynedd proposed substation
  - Glaslyn Estuary proposed underground connection
  - Policy and guidance
- 7.1.3 National Grid has considered respondents comments and responded to them below.

### 7.2 Strategic Options Report

- 7.2.1 The topics which are identified under this sub-theme include:
- Strategic Options process
  - Findings of the Strategic Options Report (SOR)

#### ***Strategic Options process***

##### **Summary of responses**

- 7.2.2 Generally, respondents asked for further information on the strategic options process National Grid undertook for the North Wales Connection Project. As part of this, respondents queried if National Grid had consulted with stakeholders regarding the process.
- 7.2.3 A number of respondents identified designated areas and questioned how these had been considered by National Grid during its strategic options process. These included; Liverpool Bay Special Protection Area (SPA), Dee Estuary and Marine Special Area of Conservation (SAC) in Pembrokeshire.

##### **National Grid's response**

- 7.2.4 When developing new projects, National Grid identifies a range of high level strategic options that could address the need to reinforce the transmission system. This process is regularly revisited to ensure the appropriate high level option is being taken forward at the time of application. This is in line with the process outlined in National Grid's *'Our approach to the design and routing of new electricity transmission lines (2012)'* (Appendix G). The approach set out in this document complies with the requirements of the Planning Act 2008 and the National Policy Statements (NPSs) on Electricity Networks Infrastructure (EN-5) and retains the principles of the Holford 'Rules' (Appendix R).
- 7.2.5 Early on in the strategic options process, National Grid ensures that all of the potential strategic options would work on its network and it rejects any that would not meet technical standards. National Grid then filters the number of options by making sure that every potential option it taken forward has some benefit over another.

Each strategic option is then analysed for technical risk, potential effects on the environment, sustainability, impact on communities and overall cost (both capital and lifetime) by internal and external specialists within their fields. All aspects of the assessment are taken into consideration using National Grid's professional judgement and experience to identify the preliminary preferred option.

- 7.2.6 Consultation with organisations with particular expertise also forms an important part of the process. National Grid has consulted with them on the strategic options it is considering and how it should assess them. In the case of North Wales, National Grid held initial discussions with representatives from local planning authorities, the Welsh Government, Natural Resources Wales (formally the Countryside Council for Wales and the Environment Agency Wales), Cadw, the generators and SP Manweb.
- 7.2.7 National Grid can confirm that the following designated sites were included in its environmental assessment of each Strategic Option; Liverpool Bay SPA, Dee Estuary and Marine SAC in Pembrokeshire – along with many others. National Grid has considered the potential high level impacts on these and other designated areas.
- 7.2.8 Through National Grid's 'back check' process, the impact of its proposals on designated areas by each Strategic Option will be reviewed and this will form part of National Grid's decision on which Strategic Option to move forward with.

## **Findings of the SOR**

### **Summary of responses**

- 7.2.9 Whilst a number of respondents acknowledged the need for new secure electricity generation in order to meet current electricity demand and, as part of this, that there may be the need for new electricity grid infrastructure and/or reinforcements of the existing electricity network, they generally did not agree with the findings of National Grid's Strategic Options Report (SOR) (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)).
- 7.2.10 Respondents requested further information on the strategic options identified and whether National Grid had taken into account the impacts on the environment and visual amenity of each option identified. As part of this, a number of respondents identified **Option 1** (three subsea HVDC circuits between Wylfa and Deeside substations) and **Option 2** (two subsea HVDC circuits between Wylfa and Deeside and one HVDC circuit between Wylfa and Pembroke) as described in the SOR as having the least visual impact and preferred these connection options to National Grid's preliminary preferred strategic option.
- 7.2.11 There was a suggestion that there is a legal restriction regarding the number of overhead lines permitted to cross the Menai Strait and therefore undergrounding should be looked at closely in this area.

### **National Grid's response**

- 7.2.12 The Strategic Options Report (SOR) outlined the high level strategic options considered for the North Wales Connection Project – which was made available publicly at the start of the Stage One Consultation.
- 7.2.13 Through its Strategic Options process, National Grid identified and assessed a number of strategic options for the reinforcement of the electricity transmission system in North Wales (details of these can be found in Chapter 6 of the *Strategic Options Report* available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). Through this process, National Grid assessed high level impacts to the environment including landscape and ecology alongside socio-economic impacts.
- 7.2.14 National Grid acknowledges that **Option 1** (three subsea HVDC circuits between Wylfa and Deeside substations) and **Option 2** (two subsea HVDC circuits between Wylfa and Deeside and one HVDC circuit between Wylfa and Pembroke) would, at a high level assessment, have the least visual impact, especially within Anglesey and Gwynedd (although other communities within Wales unaffected by the preliminary preferred strategic option would experience impacts).

This is also the case with all subsea and underground elements. However, National Grid has to consider a wide range of factors including environmental, technical, socio-economic and cost when making its overall decision on which strategic option would best satisfy societies needs. Balancing these competing considerations is a difficult judgement especially when solutions that may be better from an environmental perspective would result in substantially higher costs.

- 7.2.15 With regard to the view expressed from a number of respondents that there is a legal restriction regarding the number of overhead lines permitted to cross the Menai Strait, National Grid is unaware of any such restriction. However, National Grid does have a statutory duty to have regard to the purposes of the Anglesey Area of Outstanding Natural Beauty (AONB) which borders the Strait.

### **7.3 Underground/Overhead**

7.3.1 The topics identified under this sub-theme include:

- Preference for undergrounding
- Opposition to overhead lines
- Reasons for undergrounding/overhead

#### ***Preference for undergrounding***

##### **Summary of responses**

- 7.3.2 Respondents generally expressed a preference for an underground connection as opposed to any overhead connection.
- 7.3.3 There was strong and widespread opposition to overhead line development – mainly owing to perceived environmental, landscape and visual, economic and health effects, which were suggested as being associated with an overhead line (these matters are all considered further under subsequent themes; notably Socio-economic 7.9, Environment 7.8 and Health 7.10 ). In light of these perceived effects, it was suggested that any connection close to homes and populated areas should be underground.
- 7.3.4 Respondents suggested that any disruption caused by the construction effects of undergrounding would be offset by the longer term gains. Conversely, a number of respondents raised concerns about the impacts of undergrounding, particularly during the construction phase with respondents citing the detrimental effects that installing underground cables would have on the countryside.
- 7.3.5 Respondents suggested that National Grid should follow guidance provided by the Holford ‘Rules’ (Appendix R) and avoid areas of high amenity including the Menai Strait. Respondents stated such guidance is clear in directing National Grid to avoid environmentally and visually sensitive areas.

##### **National Grid’s response**

- 7.3.6 Deciding where and how to build new lines is complex and National Grid starts with no technology preference. Its approach is to always work with all of its stakeholders and local communities to establish the right balance between keeping costs down for consumers, with the need to minimise the visual effect of a new connection. This assessment is done on a case by case basis to ensure that all considerations are fully understood and accounted for.
- 7.3.7 Further information on National Grid’s approach to undergrounding is provided in its *‘Our approach to the design and routeing of new electricity transmission lines (2012)’* in Appendix G.

## **Opposition to overhead lines**

### **Summary of responses**

- 7.3.8 Generally, there was strong and widespread opposition to overhead line development. Respondents expressed opposition mainly owing to perceived environmental, landscape and visual, economic and health effects, which were suggested as being associated with an overhead line (these matters are all considered further under subsequent themes; notably Socio-Economic 7.8, Environment 7.8 and Health 7.10).
- 7.3.9 A number of stakeholders expressed opposition to an overhead line due to the impact it would have on the entire Project area. Additionally, specific locations were referenced including: the Menai Strait, Anglesey Area of Outstanding Natural Beauty, the Dwyryd Estuary, Snowdonia National Park and across public rights of way.
- 7.3.10 As part of this, respondents suggested that National Grid should follow guidance provided by the Holford 'Rules' (Appendix R) and areas of high amenity including the Menai Strait should be avoided. Respondents stated such guidance is clear in directing National Grid to avoid environmentally and visually sensitive areas with an overhead line.
- 7.3.11 One respondent pointed towards the *Countryside Rights of Way Act (2000)* which requires *'infrastructure developments to conserve and enhance the natural beauty of designated areas and safeguard their settings'* and believed a new overhead line would be in direct conflict with this Act.

### **National Grid's response**

- 7.3.12 Most of the existing high voltage network takes the form of overhead lines, as these provide the most economical solution and therefore have the least effect on consumer bills<sup>2</sup>. Operationally, overhead lines offer higher reliability; for example, when faults occur on lines they can be more easily and quickly located and repaired.
- 7.3.13 National Grid recognises the need to balance requirements for secure and reliable energy supplies with affordability for bill-payers and the visual and environmental effect of the network. Consideration is therefore given to other technologies to avoid or mitigate the effects of overhead lines, including undergrounding.
- 7.3.14 National Grid is regulated by Ofgem, the electricity and gas markets regulator, to ensure value for money for consumers and National Grid must satisfy its various statutory duties. National Grid is required under the Electricity Act (1989) to *'develop and maintain an efficient, coordinated and economical electricity transmission system, and to facilitate competition in the supply and generation of electricity'* and therefore need to be responsible for the cost of projects which National Grid promotes as those costs will ultimately be passed on to electricity users.
- 7.3.15 Whenever National Grid proposes overhead lines it looks carefully at how it can reduce the visual effect through careful routeing. This includes consideration of any existing infrastructure in the area such as main roads and built-up areas, as well as natural topography, which can offer some means of mitigation. Additionally, National Grid seeks to avoid areas which are nationally or internationally designated for their wildlife or cultural significance, such as Areas of Outstanding Natural Beauty, National Scenic Areas, Special Areas of Conservation and Scheduled Ancient Monuments. However, this is not always possible and in such cases detailed consideration will be given to the most appropriate means of mitigation.
- 7.3.16 National Grid will take into account the significance of these and other areas through consultation with local authorities and other stakeholders with particular interests in such sites.

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<sup>2</sup> See Appendix D 'Economic appraisal' of **North Wales Strategic Options Report** (available to download from the Project website [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) for National Grid's comparative assessments of the lifetime costs associated with each technology option that is considered to be feasible.



## **Reasons for undergrounding/overhead**

### **Summary of responses**

- 7.3.17 Generally, respondents suggested National Grid considers undergrounding parts of the route at designated or particularly sensitive areas.
- 7.3.18 A number of respondents cited areas National Grid has already undergrounded in the UK. For example, CPRW Caernarfonshire Branch refers to examples of transmission lines being placed underground at the Olympic Park in London and National Grid's decision to underground in the Glaslyn Estuary.
- 7.3.19 As part of this, several respondents expressed a preference for undergrounding in specific areas such as designated or environmentally sensitive areas. Specific locations identified by respondents included the Menai Strait.
- 7.3.20 Conversely, a number of respondents expressed opposition to underground cables as it was felt an overhead line would have less of an impact on the environment than underground cables, which was felt would require substantial groundwork that could potentially contaminate the land.

### **National Grid's response**

- 7.3.21 National Grid has a duty under Schedule 9 of the Electricity Act (1989) to '*consider the desirability of preserving amenity*' when undertaking projects (which includes effects on communities, landscape and visual amenity, cultural heritage and ecological resources). To satisfy this duty, National Grid seeks to avoid areas which are nationally or internationally designated for their landscape, wildlife or cultural significance. However, this is not always possible and in such cases detailed consideration will be given to the most appropriate means of mitigation. National Grid recognises that not all sites that are valued by and are important for the wellbeing of local communities are necessarily designated. National Grid's '*Our approach to the design and routing of new electricity transmission lines (2012)*' (Appendix G) therefore seeks to ensure that all potential economic, environmental and social impacts of proposed projects are considered and not just those relating to designated sites. It also sets out how National Grid identifies the most appropriate location and technology for any new connection in order to best satisfy society's needs.
- 7.3.22 National Grid's approach to developing connections is to consider every case on its merits, balancing often conflicting environmental, socio-economic, technical and cost considerations. The most appropriate technology for any new connection will be identified through a process of iterative design and consultation as the project progresses.
- 7.3.23 Overhead lines generally have advantages over underground cables in terms of reliability, capability, cost, construction impacts and land use. However, the use of underground cables can provide significant benefits in terms of reduced landscape and visual impacts. In some locations, such as nationally designated landscapes, this benefit could be a primary consideration that would outweigh the disadvantages of undergrounding such as restrictions on land use and possible impacts to archaeological and ecological sites and features.
- 7.3.24 All of the route corridors brought forward need to cross the Anglesey Area of Outstanding Natural Beauty (AONB) and Menai Strait and how National Grid does this presents a number of environmental, socio-economic, technical and economic considerations. National Grid will carry out further technical and environmental studies to better understand these issues and identify credible design options for crossing the Menai Strait and passing through the Anglesey AONB.
- 7.3.25 National Grid acknowledges the effects of a wholly underground route would be largely limited to the construction phase. However, when National Grid looked at a wholly onshore underground AC connection costs would be £924 million more than the equivalent project based on an overhead line route.
- 7.3.26 National Grid will continue to back-check its proposals up to the point of application to the relevant authorities, and review all items that could materially affect the connection proposals. Consultation feedback received relating to overhead/underground matters will continue to inform the decision making process going forward.

7.3.27 National Grid considered both overhead and underground options when it looked at connection options at the Glaslyn Estuary. The existing connection at the Glaslyn Estuary is made up of one underground circuit, which was originally installed in the 1960s. This runs from Wern to the west of Tremadog and remains underground for approximately 6km before resurfacing at Y Garth, where the connection changes to an overhead line which continues to Trawsfydd. National Grid acknowledges that a wholly overhead connection would have a high landscape and visual impact, particularly with regard to Snowdonia National Park.

## 7.4 Subsea connection

7.4.1 The topics which are identified under this sub-theme include:

- Subsea connection

### **Subsea connection**

#### **Summary of responses**

- 7.4.2 The main theme to emerge from Stage One Consultation was the opposition to an overhead line and a desire for a subsea connection.
- 7.4.3 Opposition was largely based on perceived landscape damage and the potential visual, health, heritage, economic and wildlife impacts of an overhead line. Respondents suggested that an overhead line would have a perceived negative impact on tourism and a subsea connection would avoid this.
- 7.4.4 Respondents provided examples of where subsea connections are already in existence or being considered for other projects, including the possible Heysham-Sellafield link in the UK, subsea connections from France, Ireland and Iceland, and the Element Power Greenwire project plans to connect the Republic of Ireland with the national grid at Pentir and Pembroke.
- 7.4.5 As part of this, a number of respondents expressed a preference for a subsea connection from Wylfa to either Deeside or Pembroke (Strategic Options 1 and 2) and considered that any associated technical difficulties of utilising HVDC (High Voltage Direct Current) cables could be overcome.
- 7.4.6 Generally, respondents questioned National Grid's cost assessment of the subsea connection options and considered that once the lifetime costs of an overhead line, as well as effect on environment and mitigation costs had been taken into account, a subsea connection would be affordable in the long term, especially when costs were spread out across UK electricity consumers.
- 7.4.7 It was suggested by respondents that a subsea connection would enable National Grid to facilitate future energy projects and allow for the removal of existing overhead lines on Anglesey.

#### **National Grid's response**

- 7.4.8 Through its Options Appraisal process National Grid identified and assessed a number of options, including both wholly underground and subsea options (please see the *Strategic Options Report* for more detail which is available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). Through this process, potential high level impacts on the environment (including landscape and ecology) and socio-economic impacts were assessed.
- 7.4.9 With regard to subsea connections to Deeside or Pembroke, National Grid would need to use HVDC (High Voltage Direct Current) cables. For a subsea connection to Pentir, National Grid could use HVDC or AC (Alternating Current) cables due to the distance being much shorter. It is important to note that HVDC of the type needed for the Project (Voltage Source Converter) is an evolving technology and there are no HVDC systems of this type and capacity installed anywhere in the world. For both options this represents a technical and financial risk. Additionally, for HVDC connections, new converter stations would be required at the ends of each connection. A typical converter station would be the size of a large DIY warehouse and so would give rise to its own, albeit localised, effects.

- 7.4.10 With regard to a subsea connection, there are environmental considerations that National Grid needs to consider when it lays subsea cables – such as the potential effect on marine and coastal environments. However, National Grid recognises that a design could probably be developed that would not affect the integrity of designated European habitat sites.
- 7.4.11 Additionally, National Grid has to consider the cost of the Project as this is ultimately passed onto consumers in their electricity bills. The overall capital cost for the project if subsea cables were used is estimated at between £1.6 billion and £2 billion for HVDC, and between £2.2 and £2.5 billion for AC subsea connections. This compares to £750 million if an overhead line was used between Wylfa and Pentir, and £1.7 billion for a wholly underground option. When taking into account lifetime costs, the cost difference widens further. The high costs and technical risk associated with subsea connections were taken into account when determining National Grid’s preliminary preferred option.
- 7.4.12 With regard to the subsea connections being considered for other projects, each project is considered on its own merits and National Grid will keep any such considerations under review.
- 7.4.13 During Stage One Consultation, National Grid received feedback on a number of sensitive locations (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T). These areas as well as designated areas (such as the Anglesey Area of Outstanding Natural Beauty) will be considered as part of National Grid’s strategic options back-check. National Grid recognises the difficulty of balancing environmental, community, cost and technical considerations when reaching its judgement on the best overall solution for society. National Grid will need to demonstrate that any final proposal would comply with relevant government policy.
- 7.4.14 New energy generation is continually being proposed to meet the country’s need for new, low carbon, sources of electricity. It is therefore possible that National Grid may need to connect other proposed new energy generation sources to the electricity network in North Wales in the future. As such, National Grid will review its preferred strategic option in the light of any future developments to ensure it takes forward the most appropriate option.

## 7.5 Alternative options

- 7.5.1 The topics which are identified under this sub-theme include:
- Upgrading the existing 400 kV line
  - Tidal energy
  - Former Shell oil pipeline from Amlwch to Stanlow
  - Hybrid options

### ***Upgrading the existing 400 kV line***

#### **Summary of responses**

- 7.5.2 Respondents suggested that National Grid should upgrade the existing 400 kV overhead line which runs between National Grid’s substations at Wylfa and Pentir, Gwynedd. Respondents commented that this would mean that no new transmission connections would need to be built, as the existing overhead line could accommodate the additional low carbon energy being proposed in North Wales.

#### **National Grid’s response**

- 7.5.3 Even when the existing 1 GW Magnox nuclear power station has been decommissioned, the existing overhead line would not be able to accommodate the 5.6 GW of new generation that is being proposed. As of April 2014, the maximum amount of generation National Grid can connect by only two circuits (cables on both sides of one pylon line) will be 1.8 GW. This is in order to comply with the Security and Quality of Supply Standards, by providing a second means of exporting the power from Anglesey. This would ensure that nationwide power supplies would not be put at risk in the event of a fault on the existing line off the island, which would otherwise lead to the instant loss of a significant amount of Britain’s overall generation.

## ***Tidal energy***

### **Summary of responses**

- 7.5.4 Respondents expressed a desire for tidal power to be used as an alternative to the nuclear power station that is being proposed on Anglesey.

### **National Grid's response**

- 7.5.5 National Grid has no influence on the type of generation developed in the UK or its location. Decisions on the type of energy generation to be developed are ultimately matters for the Government, which seeks to incentivise the market to achieve its aims. National Grid's role in this is to facilitate energy generation and development by providing a secure network for the transmission of bulk electricity, but it is not responsible for influencing the type, location or scale of energy generation sources.

## ***Former Shell pipeline from Amlwch to Stanlow***

### **Summary of responses**

- 7.5.6 Respondents queried why the former Shell pipeline from Amlwch to Stanlow on Merseyside could not be utilised by National Grid for an alternative underground connection option.

### **National Grid's response**

- 7.5.7 National Grid is aware of the existence of the pipeline and did consider this as an option. Placing the cables inside a pipe gives rise to a number of technical challenges which National Grid considers to be insurmountable. These include, among other things, installation and jointing difficulties, access for repairs following faults and poor heat dissipation.

## ***Hybrid options***

### **Summary of responses**

- 7.5.8 Respondents suggested National Grid should explore hybrid options for the North Wales Connection Project – primarily focusing on a hybrid of an underground and subsea connection. Respondents felt a hybrid option would reduce the risks that a wholly subsea connection could pose in both technical and financial terms.

### **National Grid's response**

- 7.5.9 National Grid includes the appraisal of hybrid technologies at a point when sufficient information is available to identify a distinct option for assessment. There are an unlimited number of hybrid combinations that could be appraised, to identify hybrid options for this project further detail was required through consultation on the initial strategic options which appraised end to end solutions using a wholly overhead line, land based and offshore AC cabling and HVDC subsea cabling. Options identified as hybrid solutions are to be taken into account in the next stage of appraisal.

## **7.6 National Grid's costs assessment**

7.6.1 The topics which are identified under this sub-theme include:

- Funding of projects
- Costs to consumer
- General cost benefit analysis
- Lifetime costs

### ***Funding of projects***

#### **Summary of responses**

7.6.2 Respondents queried how National Grid funds new transmission projects.

#### **National Grid's response**

- 7.6.1 National Grid builds, owns and operates its own transmission circuits and associated infrastructure. It pays the many millions of pounds it costs to build a new power transmission line up-front. New transmission infrastructure is built based on the signals we get from our customers on the future connection of new generation and demand.
- 7.6.2 The funding for these up-front costs comes from National Grid's shareholders and the institutions that lend it money. National Grid's investment in vital infrastructure in the UK amounts to many billions of pounds. National Grid's shareholders invest because they expect National Grid will make a sufficient profit to provide an appropriate return on investment and eventually pay them back. This brings a major benefit to electricity bill payers as it allows the recovery of the cost of National Grid's investment to be spread out over many years, rather than having a spike in electricity bills when National Grid builds a large new transmission line. National Grid then receives returns on these investments which are set by Ofgem.

### ***Costs to consumer***

#### **Summary of responses**

- 7.6.3 It was suggested that, on a UK-wide basis, the actual cost of a subsea or underground connection would not be significant for annual household electricity bills. As part of this, it was suggested that National Grid should cover the cost for a subsea connection in North Wales.
- 7.6.4 It was also suggested that if subsidies for wind farms were used for the North Wales Connection Project, the subsidies would be able to cover the additional costs for a subsea or underground connection.

#### **National Grid's response**

- 7.6.5 It is relevant to note that the costs of developing and operating the electricity transmission system are ultimately borne by the consumer, both domestic and commercial. Accordingly, National Grid has a statutory and licence duty to develop and maintain an economical system of electricity transmission. This is also in keeping with the guidance outlined in National Policy Statement for Electricity Networks Infrastructure (EN5). Both for consent of proposals through the planning inspectorate and recovery of costs through Ofgem, additional costs of subsea or underground connection would have to be fully justified.
- 7.6.6 Government subsidies for infrastructure development do not apply to National Grid transmission infrastructure.

### ***General cost-benefit analysis***

#### **Summary of responses**

- 7.6.7 There was general concern amongst respondents that short term capital costs have only been considered by National Grid in its appraisal of each option. Respondents therefore suggested that a thorough cost benefit analysis should be undertaken to inform National Grid's decision making process and should take into account all alternative connection options.

### **National Grid's response**

- 7.6.8 National Grid's appraisal methodology does not include a 'cost-benefit' analysis. To carry out an effective cost-benefit analysis, the quality of data needs to be reasonably consistent across the different elements of the analysis. Many of the factors considered as part of the options appraisal process cannot be readily monetised (landscape, nature conservation, etc). Therefore, there is a risk that if a cost-benefit approach was taken decisions may be skewed towards technical and cost factors which are more easily expressed in monetary terms. In light of these factors, National Grid has developed an options appraisal methodology, where the significant issues under each factor are considered qualitatively with no weighting or scoring of factors. Therefore, no monetary value is applied to visual amenity or any other environmental topic, because such costs are hard to define and any assessment will be very subjective in its nature.
- 7.6.9 This ensures that environmental and socio-economic factors are compared on an even footing with technical and financial issues, and reasoning for selecting a preferred Strategic Option is clear and not obscured by any mechanistic scoring process.
- 7.6.10 At the initial appraisal stage, National Grid prepared indicative estimates of the capital costs. These are based on the high level scope of works defined for each strategic option in respect of each technology option that is considered to be feasible.

### **Lifetime costs**

#### **Summary of responses**

- 7.6.11 A number of respondents recognised that the costs of the connection will be 'long term'. As such, the 'lifetime costs' of any connection should be an important consideration when National Grid decides a technology and connection preference.
- 7.6.12 Respondents also suggested that the lifetime costs should include consideration of all cost matters including maintenance costs.

#### **National Grid's response**

- 7.6.13 As part of the economic appraisal of strategic options, National Grid makes comparative assessments of the lifetime costs associated with each technology used in the new routes.
- 7.6.14 The costs provided to date are only estimates as it would not be possible or appropriate to provide detailed cost breakdowns at this stage. Even so, the cost estimates provided thus far reflect the costs incurred by previous projects which have been subject to verification by Ofgem. National Grid uses these estimates with confidence and factors them into our considerations at an early stage in the development of a project.
- 7.6.15 The cost of maintenance for the required new transmission circuits are included in the lifetime cost estimates presented in the *Strategic Options Report* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)).
- 7.6.16 As the actual transmission routes have yet to be identified, it has not been possible to estimate costs for mitigation measures. Once a technology and the associated route alignments have been determined, more detailed cost estimates, including any required environmental mitigation works, will be produced. National Grid carries out regular 'back-checks' of the process leading to selection of a given technical solution for a project. This means that whilst the cost of mitigation cannot be assumed at this stage, it will be fully considered as the selected Strategic Option(s) evolve.
- 7.6.17 Therefore, if mitigation costs seem likely to make a preferred Strategic Option more expensive than another Strategic Option not pursued, the decisions taken up to that point will be reviewed.

## 7.7 Need Case

7.7.1 The topics which are identified under this sub-theme include:

- Need for the connection

### ***Need for the connection***

#### **Summary of responses**

- 7.7.2 Many respondents acknowledged the need for new secure electricity generation in North Wales to meet current energy demand and that, as part of this, there may be the need for new electricity grid infrastructure and/or reinforcements of the existing electricity network.
- 7.7.3 Generally, respondents challenged the suitability of nuclear power due to safety, economic and environmental reasons. Respondents also questioned the viability of wind generation.
- 7.7.4 Respondents also questioned if the existing National Grid infrastructure on Anglesey would be enough for the proposed increase in energy generation following the closure of Wylfa A.
- 7.7.5 Respondents also stated that Wales could be more energy efficient with the resources it already has which would negate the need for further infrastructure to be built – with one respondent citing Germany as a model for community power use.

#### **National Grid's response**

- 7.7.6 National Grid is obliged to respond to all applications to connect new generation to its transmission system. Under Section 9 (2) of the Electricity Act, National Grid also has a duty, *'to develop and maintain an efficient, coordinated and economical system of electricity transmission in England and Wales'* and *'to facilitate competition in the supply and generation of electricity'*.
- 7.7.7 Decisions on energy policy and the type of energy generation to be developed are ultimately matters for the Government, which seeks to incentivise the market to achieve its aims. The UK Government is committed to achieving significant reductions in the UK's CO<sub>2</sub> emissions by 2020. As electricity generation makes up more than a quarter of the UK's total emissions, the Government is seeking to switch to low carbon sources of energy generation – such as wind and nuclear. In 2011, the Government published its National Policy Statement on nuclear power generation which identified the Wylfa site as being *'potentially suitable for the deployment of new nuclear stations..... by the end of 2025.'*
- 7.7.8 It is for the generating companies to decide, within the parameters set by Government, where emissions by their particular development proposals would be cost competitive within the energy market.
- 7.7.9 National Grid will continue to back-check its proposals up to the point of application to the relevant authorities, and review all items that could materially affect the connection proposals. This includes, but is not limited to, technology developments, cost updates and changes to the connection dates of new generators in the region.
- 7.7.10 The existing 400 kV overhead line, which runs between National Grid's substations at Wylfa and Pentir, would not be able to accommodate the additional low carbon energy being proposed in North Wales. Even when the existing 1 GW Magnox nuclear power station has been decommissioned, the existing overhead line would not be able to accommodate all the new generation that is being proposed. As of April 2014, the maximum amount of power National Grid can connect by two circuits (cables on both sides of one pylon line) will be 1.8 GW. This is in order to comply with the Security and Quality of Supply Standards, by providing a second means of exporting the power from Anglesey. This would ensure that nationwide power supplies would not be put at risk in the event of a fault on the existing line off the island, which would otherwise lead to the instant loss of a significant amount of Britain's overall generation.
- 7.7.11 The UK's embedded electricity generation accounts for around 15% of the total generation capacity and while this proportion is expected to increase over the coming years there will still be a need for large scale power stations connected to the transmission system to provide essential security of supply.

7.7.12 The need for each element of the Project, and the feasibility of any other alternatives which may arise as a result of developments in technology, will be kept under review.

## **7.8 Environmental impacts**

7.8.1 The topics identified under this sub-theme include:

- Landscape and views
- Cultural heritage and historic sites
- Biodiversity
- Designated sites

### ***Landscape and views***

#### **Summary of responses**

- 7.8.2 Respondents expressed concern regarding the visual effect associated with pylons, overhead lines and substations. The majority of respondents felt that any new National Grid infrastructure in the area would have an adverse effect on visual amenity and as a result would directly affect tourism and the local economy. As part of this, a number of respondents were concerned that the cumulative impact of the existing overhead line and infrastructure in the area would have a particularly detrimental visual effect.
- 7.8.3 A number of respondents suggested ways to mitigate the perceived visual effect with the use of tree screening; utilising topography for screening purposes and running the new overhead line close to the existing 400 kV overhead line. Despite this, a large proportion of respondents felt that the visual effect of any overhead line couldn't be mitigated through screening and suggested the only way to mitigate the effects of an overhead line was through undergrounding or putting the connection in the sea.
- 7.8.4 A number of respondents were keen that an Environmental Impact Assessment of the Project should be undertaken to fully assess landscape and visual effect.
- 7.8.5 In landscape and visual amenity terms, there was strong support for a subsea connection and/or the use of undergrounding, as a means to avoid perceived negative visual effect of overhead lines – with many respondents stating that they believed the steel lattice pylons are an outdated technology and have a significant negative landscape and visual effect.
- 7.8.6 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include: designated areas (including designated cultural heritage Sites, Sites of Special Scientific Interest (SSSI), designated wildlife sites and listed buildings and structures). Specific locations referenced included:

#### ***Wylfa-Pentir***

- Anglesey Area of Outstanding Natural Beauty
- Snowdonia National Park
- Britannia bridge
- Anglesey coastal path

#### ***Glaslyn Estuary***

- Dwyrdd Estuary
- Glaslyn Marshes

7.8.7 Where the comments were presented on the sensitive locations map (provided as part of the consultation feedback forms) these have been combined and are presented in Appendix T of this report.



### **National Grid's response**

- 7.8.8 National Grid seeks to minimise effects on the visual amenity of people, including residents, users of important tourist routes, key recreational areas and public rights of way where possible. This is achieved through careful routeing, including making use of natural features such as woodland blocks, changes in topography to help screen and act as a backdrop, and consideration of connection infrastructure design.
- 7.8.9 Should the North Wales Connection Project be a Nationally Significant Infrastructure Project (NSIP) National Grid will be required to produce an Environmental Impact Assessment (EIA) when applying for a Development Consent Order (DCO) (or other consent as required). The EIA would detail the probable environmental impacts of National Grid's proposals and would also look at the cumulative impacts of National Grid's work and any other development proposed in the surrounding area. The developments that need to be assessed alongside National Grid's work will be discussed and agreed with Isle of Anglesey County Council and Gwynedd County Council at the start of the EIA process.
- 7.8.10 The *Wylfa-Pentir Initial Route Corridor Report*, *West Gwynedd Substation Siting Study* and *Glaslyn Estuary Route Corridor Report* which are available online (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) took into account primary considerations and secondary considerations in identifying potential route corridors for an overhead line and substation areas. Primary considerations (which National Grid seeks to avoid) include: Areas of Outstanding Natural Beauty, European Habitat Sites, World Heritage Sites, Scheduled Monuments and Registered Parks and Gardens. Secondary Considerations include: Listed Buildings, Conservation Areas and locally designated areas.
- 7.8.11 These issues were set out in the above documents and should National Grid progress with its preferred strategic option, this will be considered in the selection of a preferred route corridor between Wylfa and Pentir, preferred substation site in West Gwynedd and the final underground cable route alignment at the Glaslyn Estuary. National Grid would consider the visual effects upon the setting of scheduled monuments and listed buildings as part of its overall landscape and visual assessment.

### **Cultural heritage and historic sites**

#### **Summary of responses**

- 7.8.12 In general terms, many respondents felt the Project area is a place of rich cultural heritage. As part of this, respondents suggested that the route should be placed in the sea or underground cables used, as they considered that overhead lines and pylons would have a negative effect on views from historic and/or registered landscapes across North Wales, especially views across the Menai Strait, along with views of Listed Buildings and Scheduled Monuments.

#### **National Grid's response**

- 7.8.13 National Grid acknowledges the historic environment as important and takes into account appropriate guidance and legislation when developing its proposals. National Grid's objective towards cultural heritage is to limit adverse effects on cultural heritage interests, historic parks and gardens and historic landscapes of highest value.
- 7.8.14 During the Environmental Impact Assessment for any new overhead line, National Grid would undertake a cultural heritage assessment of the Project area, working closely with local authorities (including Gwynedd Archaeological Trust) and other statutory organisations such as Cadw and Natural Resources Wales to identify a connection design and any measures required to prevent, reduce and where possible offset any adverse effects on cultural heritage interests.
- 7.8.15 Effects on the setting of listed buildings, Scheduled Monuments, conservation areas and other heritage assets will be considered by National Grid when developing the final design proposals.

## **Biodiversity**

### **Summary of responses**

- 7.8.16 In general terms, many respondents felt the Project area is rich in ecological and biodiversity resources. Respondents suggested that any new infrastructure in the Project area should avoid effects on protected and sensitive areas and species.
- 7.8.17 Respondents expressed concern that overhead lines would have a negative effect on wildlife and result in habitat disturbance and requested National Grid undertakes further studies and assessments to identify the potential impacts.
- 7.8.18 Respondents also expressed concern that any construction of overhead lines and underground connections would result in habitat change and potentially interfere with hydrological patterns or flows on wetland and peatland sites.
- 7.8.19 Resident species recorded by respondents include: whooper swan herd, ospreys, large numbers of wildfowl including the Red Book Listed Bittern – with concerns regarding the potential for bird strikes.

### **National Grid's response**

- 7.8.20 Biodiversity interests were considered in the *Wylfa-Pentir Initial Route Corridor Report*, the *West Gwynedd Substation Siting Study* and the *Glaslyn Estuary Route Corridor Report* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) with reference to Special Protection Areas/Special Areas of Conservation (SPAs)/(SACs), Ramsar Sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), ancient woodlands and locally designated sites, Biodiversity Action Plan (BAP) habitats and sensitive species. National Grid will seek to avoid these areas as far as reasonably practicable.
- 7.8.21 Further ecological assessment will be undertaken as the Project progresses. National Grid will also work closely with relevant local authorities and other statutory organisations such as Natural Resources Wales to identify a connection design and any measures required to prevent, reduce and where possible offset any adverse effects on biodiversity interests.
- 7.8.22 Effects on important ecological receptors (e.g. ancient woodland, Sites of Nature Conservation Interest (SINC), Wildlife Trust Reserves, etc), areas of valuable vegetation, protection species, BAP species, other notable species or valuable assemblages of species would be assessed during the EIA process and any impacts identified avoided where possible or reduced.

## **Designated sites**

### **Summary of responses**

- 7.8.23 In general terms, many respondents expressed concern over the perceived potential for effect on designated sites and areas. Respondents suggested that National Grid should generally seek to avoid and/or mitigate effect on Areas of Outstanding Natural Beauty, Sites of Specific Scientific Interest (SSSIs), National Nature Reserves (NNRs), Ramsar Sites, Registered Historic Landscapes, conservation areas, listed buildings, World Heritage Sites and Scheduled Monuments.

### **National Grid's response**

- 7.8.24 National Grid will undertake a review of designated sites and effects on individual habitats and species when identifying its connection design.
- 7.8.25 National Grid considers the potential effect on designated sites in the *Wylfa-Pentir Initial Route Corridor Report*, the *West Gwynedd Substation Siting Study* and the *Glaslyn Estuary Route Corridor Report* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). These include National Parks, Areas of Outstanding Natural Beauty, Special Protection Areas/ Special Areas of Conservation (SPAs/SACs), Ramsar Sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), World Heritage Sites, Scheduled Monuments, Welsh Historic Landscapes, Registered Parks and Gardens. National Grid undertook site visits to build on and verify the information provided by desk study investigations.

7.8.26 Effects on designated sites (including local designations) will be considered in identifying the final connection design. During the Environmental Impact Analysis process, National Grid would undertake detailed assessments of ecological and designated sites and important habitats. As part of this, National Grid would work closely with the relevant local authorities and other statutory organisations such as Natural Resources Wales to identify a connection design and any measures required to prevent, reduce and where possible offset any adverse effects on designated sites.

## **7.9 Socio-economic impacts**

7.9.1 The topics which are identified under this sub-theme include:

- Proximity of overhead line to areas of high amenity
- Impact of proposals on property values
- Impacts on landowners/farmers/public rights of way
- Impacts on businesses/tourism/economy
- Compensation
- Future generations

### ***Proximity of overhead line to areas of high amenity***

#### **Summary of responses**

- 7.9.2 Respondents raised concern about the siting of National Grid's infrastructure within close proximity to areas of high amenity, schools, residential areas, homes and existing infrastructure.
- 7.9.3 A number of respondents claimed that the route corridors and substation sites brought forward conflict with the principles outlined in the Holford 'Rules' (Appendix R) and Horlock 'Rules' (Appendix S). Respondents requested further information on the minimum distance for new overhead lines to residential properties.

#### **National Grid's response**

- 7.9.4 When routing new infrastructure through areas of high amenity, National Grid gives careful consideration to a number of factors including landscape character, views to and from adjacent areas and designated sites, effects on ecology, cultural heritage, local communities and tourism. National Grid also gives consideration to the presence of existing communication and utilities infrastructure.
- 7.9.5 In accordance with the Holford 'Rules' (Appendix R) and Horlock 'Rules', (Appendix S) - National Grid's guidance on the siting and routing of its infrastructure - the corridors and substation siting areas brought forward in Stage One Consultation, seek to avoid residential areas, schools and settlements as far as reasonably practicable on the grounds of general amenity. The proposals brought forward by National Grid are defined to maximise the distance from other smaller centres of population as far as possible.
- 7.9.6 National Grid has no minimum distance for the proximity of pylons close to homes. However, it always seeks to route new connections away from residential property on grounds of general amenity. The effect on every home would be considered individually when assessing possible route alignments within the preferred route corridor.

### ***Impact of proposals on property values***

#### **Summary of responses**

- 7.9.7 Respondents throughout the Project area expressed concerns that the siting of infrastructure close to properties would have a significant detrimental effect on property values, due to its visual impact and its potential health effects. A number of respondents expressed the opinion that this would lead to a loss of quality of life for homeowners in the region.
- 7.9.8 A number of respondents were concerned about the impact an overhead line would have on homes within 200 metres. The specific location of Llanfairpwllgwyngyll was referenced.

- 7.9.9 There was a general sense that loss in property value throughout the Project area would result in economic decline. Many respondents questioned whether National Grid would provide compensation for any loss in property values including purchasing individual residential properties.
- 7.9.10 Due to concerns surrounding the perceived effect of overhead lines on property values, respondents were also keen to see any infrastructure placed away from properties, villages and schools and/or use of subsea/undergrounding.

#### **National Grid's response**

- 7.9.11 At this stage in the Project, it is difficult to determine what effect, if any, this Project would have on individual properties. National Grid always aims to limit the visual impact of overhead lines and avoid properties and built up areas.
- 7.9.12 The relevant legislation details in what circumstances compensation is payable and provides that those whose property will have National Grid equipment sited on or across (e.g. if a pylon is located on the land or the conductors / wires sail over a landholding) are entitled to compensation. National Grid works to negotiate compensation terms if this is appropriate. More information on the theme of **Compensation** can be found in 7.9 of this report.
- 7.9.13 Any proposed overhead line would be designed so as to limit any adverse impacts upon properties. Each property will be considered individually and possible means of reducing any adverse effects will be discussed. This could include screening and planting measures and discussion on the precise siting of pylons.

#### **Impacts on landowners/farmers/public rights of way**

##### **Summary of responses**

- 7.9.14 It was widely suggested that the North Wales Connection Project would result in a loss of landscape and amenity value – in terms of countryside – and have an adverse effect on agriculture. As part of this, a number of respondents questioned the ability to carry out normal farming practices in the vicinity of overhead lines.
- 7.9.15 The role of farming is seen as a particularly important consideration for the area and a number of respondents requested compensation for farmers to take into account loss of income, access for routine maintenance and disruption to farming activities.
- 7.9.16 In general terms, respondents suggested that the construction phase of either overhead lines or underground cables may cause considerable disruption to farming operations. Reference was made to a variety of perceived specific effects from infrastructure respondents considered to be a hindrance to farming activity, including potential effect of Electric and Magnetic Fields (EMFs) on wildlife and farm animals; adverse effect on health and the impact of weed burdens that could build up around the bases of pylons.
- 7.9.17 A number of respondents also expressed concern about the effect an overhead line would have on the public rights of way in the local area.

#### **National Grid's response**

- 7.9.18 National Grid is aware that the agricultural sector accounts for more than 3 percent of the total employment on Anglesey, and more than 22 percent of the businesses on the island, and as such it is an important component of the island's economy. Whilst any connection is unlikely to affect the sector as a whole, there would inevitably be impacts upon individual farming businesses.
- 7.9.19 National Grid understands that the corridor and crossing options presented contain large areas of agricultural land and for this reason it works very hard to engage with local and national stakeholders so that they can help shape the Project and minimise any local effect. This includes consultation with the public and a number of national and regional bodies, such as the National Farmers Union Wales. Their feedback, together with that of the public and all affected landowners and occupiers is considered in National Grid's decision making process.

- 7.9.20 With regard to compensation for any infrastructure placed on farmland, National Grid will work closely with any landowners and farmers on whose land its equipment is sited to negotiate compensation terms, if this is appropriate. More information on the theme of **Compensation** can be found in 7.9 of this report.
- 7.9.21 National Grid would always seek to agree the precise siting of pylons, and any other infrastructure, with landowners and occupiers, to ensure the effect on farming operations is minimised. For example it may be more appropriate to site pylons on field boundaries or to locate them away from 'tram lines' to accommodate established cultivation and spraying practise.
- 7.9.22 In addition, National Grid will also seek to agree the routes and timing of temporary access tracks and construction compounds to avoid disturbance to farming operations and farm animals. Access for ongoing maintenance would only be required occasionally and would also be planned around cropping patterns. It is not anticipated that there will be any significant ongoing impact on agricultural operations. National Grid will consult with all those with an interest in land during the next rounds of consultation.
- 7.9.23 With reference to the effect of Electric and Magnetic Fields on wildlife and farm animals, please see National Grid's response in section 7.10.
- 7.9.24 With regards to the concern raised regarding weed burdens, it would be up to the farmer to deal with these as it would form part of the general maintenance of the land. National Grid's compensation payment covers additional maintenance that could potentially be required.
- 7.9.25 National Grid seeks to minimise effects on the visual amenity of people, including residents, users of important tourist routes, key recreational areas and public rights of way when possible. This is achieved through careful routeing where possible, (including making use of natural features such as woodland blocks and changes in topography to help screen and act as a backdrop) and consideration of connection infrastructure design.

## **Impacts on businesses/tourism/economy**

### **Summary of responses**

- 7.9.26 Many respondents stated their belief that an overhead connection would have a detrimental effect on tourism, which was cited as one of the main sources of income in the Project area. Tourism was cited as a vital contributor to the local economy, providing the main source of income for a large number of people.
- 7.9.27 As part of the effect on tourism, respondents cited a variety of landmarks and landscapes that should be avoided, including the Menai Strait and the Anglesey Area of Outstanding Natural Beauty. Respondents also expressed concern the effect an overhead line would have on public rights of way.
- 7.9.28 The economic benefits the proposals would bring to the area was questioned by a number of respondents, particularly in respect of jobs for the local community during the construction phase.

### **National Grid's response**

- 7.9.29 National Grid understands that landscape and scenic qualities are part of the attraction of some tourist destinations and that any new development can have an adverse effect on these qualities. Furthermore, National Grid appreciates the value of tourism to the local economy. However, there are many sections of overhead lines in National Parks and Areas of Outstanding Natural Beauty that area designated for landscape and scenic qualities which attract tourists. National Grid takes care when developing the final design of any connection in order to minimise effects on landscape and views, including those valued for tourism.
- 7.9.30 In investigating its proposals, National Grid seeks to avoid or minimise impacts upon settlements, designated sites, features and areas of tourism and recreational importance – such as public rights of way – wherever possible. Potential impacts on views to and from significant viewpoints, sites, features and areas of tourism and recreational importance have also been considered in assessing landscape and visual impacts and have influenced the identification of the Project area. In seeking to reduce and mitigate the overall environmental effects any adverse impacts upon the general appeal of the island therefore the tourist section would also be minimised.

- 7.9.31 National Grid recognises the importance of the opportunities its work provides for local businesses. Much of National Grid's construction work is carried out by its Alliance partners but there may be some opportunities for local businesses and its Alliance partners may have requirements for sub-contracted services. National Grid is not yet in a position to place main work contracts, but in the meantime interested parties can visit: [www.nationalgrid.com/uk/electricity/project](http://www.nationalgrid.com/uk/electricity/project) for more information about who National Grid's Alliance partners are.
- 7.9.32 Much of Anglesey's tourist appeal is founded upon the attractive coastline which is designated both an ANOB and Heritage Coast. The island's main recreation footpath also follows the coast. The presence of popular beaches and small coastal resorts has led to the concentration of tourist accommodation and visitor attractions close to the coast. The route corridors identified by National Grid avoid the most sensitive zones wherever possible. At the Menai Strait, National Grid will give careful consideration to the potential effects that any new overhead line would have on these features.
- 7.9.33 The local and nature of individual tourism businesses will be considered when developing any final route alignment.

## **Compensation**

### **Summary of responses**

- 7.9.34 Respondents raised concerns regarding the availability of compensation for those whose property values may be affected by the proposals – specifically those who would not have the connection on their land but would be considered to be blighted by its presence, for example where overhead lines may pass over, or near their land/property.
- 7.9.35 A number of respondents requested further information on the compensation process National Grid would undertake with landowners and how people can be protected from compulsory purchase.

### **National Grid's response**

- 7.9.36 The relevant legislation provides that only those whose property will have National Grid equipment sited on or across it are entitled to compensation. National Grid works closely with any landowners on whose land its equipment is sited to negotiate compensation terms if this is appropriate.
- 7.9.37 National Grid will always seek to reach agreement on a voluntary basis. If a voluntary agreement cannot be reached then the application to the National Infrastructure Directorate of the Planning Inspectorate (NIDPI) can include a request for the compulsory acquisition of land or rights in land. If this is the case, landowners would be able to make representation to the NIDPI.
- 7.9.38 National Grid has consulted with the National Farmers Union (NFU) and the Country Landowners Association (CLA) with regards to its Land Rights Strategy and the associated payments of compensation for the installation of its infrastructure.
- 7.9.39 In addition, compensation is payable where the presence of National Grid equipment on a land holding has diminished the value of that land holding. Compensation would not be payable when no infrastructure is sited on the land.

## **Future generations**

### **Summary of responses**

- 7.9.40 Respondents expressed concern for the effect of the proposals on future generations. They suggested that the legacy of the outstanding scenery in the area should be preserved for future generations to enjoy.

## **National Grid's response**

7.9.41 National Grid is conscious that its assets have a long life. This makes it all the more important that investment decisions are subject to stringent assessment and consider, in particular, effects on amenity and community interests. National Grid's *'Our Stakeholder, Community and Amenity Policy'* (Appendix F) has been developed to guide this process and to ensure that community views are taken into account. An important emphasis in the policy is that of minimising the effects of works and new infrastructure on communities and on areas and sites valued for their amenity, now and in the future.

## **7.10 Health, safety and security**

7.10.1 The topics which are identified under this sub-theme include:

- Health & Electric and Magnetic Fields (EMFs)
- Weather
- Noise
- Terrorism
- Aviation
- Electric and magnetic capability

### **Health & EMFs**

#### **Summary of responses**

7.10.2 Respondents expressed concerns about the perceived health risks relating to Electric and Magnetic Fields (EMFs), and the potential for these to be a carcinogen. Respondents strongly expressed concerns about living in proximity to high voltage infrastructure and long-term exposure to EMFs and wanted any infrastructure kept away from local communities.

7.10.3 Respondents pointed to anecdotes of 'higher rate' cases of leukaemia in children living near to overhead power cables. As part of this, respondents wanted clear, impartial evidence to be provided and to understand what studies/research has been undertaken.

7.10.4 The effect of magnetic and electric fields on animals was also raised as a concern by respondents.

7.10.5 Respondents considered that placing the connection underground would be a safer option and would reduce the potential for negative health effects.

## **National Grid's response**

7.10.6 Electric and Magnetic Fields (EMFs) are produced wherever electricity is used, and there have been suggestions that exposure to these fields might be a cause of ill health. National Grid fully recognises people's concerns and the uncertain scientific position on this subject.

7.10.7 National Grid takes this issue very seriously and relies on authoritative and independent scientific organisations such as the World Health Organisation (WHO) and the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) which advise the European Commission on the potential health risks of EMFs. National Grid also relies upon the UK Health Protection Agency (HPA) and its successor bodies to review the worldwide body of scientific evidence on EMFs and health rather than relying on its own assessment of the science. We believe it is right that the decision on what is acceptable or not is made independently of National Grid.

7.10.8 The WHO, HPA and SCENIHR have considered all of the scientific issues raised which relate to EMF and health.

7.10.9 The WHO has an international responsibility in reviewing the science and recently reviewed the evidence on EMFs in their monograph 238 which was published in 2007. The following text summarises the review of EMF science and health:

*“Scientific evidence suggesting that every day, chronic low-intensity (above 0.3-0.4  $\mu$ T) power-frequency magnetic field exposure poses a health risk based on epidemiological studies demonstrating a consistent pattern of increased risk of childhood leukaemia. Uncertainties in the hazard assessment include the role that control selection bias and exposure misclassification might have on the observed relationship between magnetic fields and childhood leukaemia. In addition, virtually all of the laboratory evidence and the mechanistic evidence fail to support a relationship between extremely low frequency (ELF) magnetic fields and changes in biological function or disease status.*

*The scientific evidence supporting a linkage between ELF magnetic fields and any of these diseases is much weaker than for childhood leukaemia and in some cases (for example, for cardiovascular disease or breast cancer) the evidence is sufficient to give confidence that magnetic fields do not cause the disease.”*

7.10.10 In 2009, SCENIHR published 'Health Effects of Exposure to EMFs' which broadly agreed with this conclusion stating:

*"The few new epidemiological and animal studies that have addressed ELF exposure and cancer do not change the previous assessment that ELF magnetic fields are a possible carcinogen and might contribute to an increase in childhood leukaemia. At present, in vitro studies did not provide a mechanistic explanation of this epidemiological finding."*

7.10.11 These health considerations are given a high priority in the process by which we arrive at any proposals for new electricity circuits. Assessment of compliance with national guidance and policies is key to our approach. The UK has a carefully thought-out set of policies for managing EMFs, which includes both numerical exposure guidelines to protect against established and acute effects of EMFs, and precautionary policies to provide appropriate protection against the possibility of chronic effects of EMFs at lower levels, specifically including the possibility of a risk for childhood leukaemia. These policies are incorporated into the decision-making process for Development Consent in National Policy Statement EN-5.

7.10.12 Our approach is to ensure that all of our assets comply with those policies, which are set by Government on the advice of their independent advisors the HPA. This ensures that health concerns are properly and adequately addressed. The evidence concerning compliance with these policies as specified in EN-5, including the numerical guidelines will be fully and publically documented in the Environmental Impact Assessment (EIA). Therefore the policies on EMFs which National Grid follows do in fact take into account of all issues both positive and negative to reach a conclusion on the science.

7.10.13 In terms of comments relating to the safety of underground cables in comparison to an overhead line, high-voltage underground cables produce magnetic fields in the same way that overhead lines do, although the fields fall more quickly with distance as you move away from the cable. Directly above an underground cable there will often be a higher magnetic field than will be found under an equivalent overhead line because of closer proximity. The electric fields from an underground cable are shielded by the cable sheath which is an integral part of the cable and therefore there would be no change to electric field strength at the surface.

7.10.14 Irrespective of the technology used National Grid will always ensure that all of its equipment is designed to comply with any appropriate safety standards i.e. the exposure limits set by Government.

7.10.15 There has been very little specific EMF research done on farm animals and domestic pets, but there is nothing from the research that has been done, or from research on humans, to suggest that there are more harmful effects from EMFs on animals.

7.10.16 National Grid operates an EMF information website and telephone helpline to answer any questions and concerns from members of the public. People requiring further information can look at the EMFs information website at [www.emfs.info](http://www.emfs.info), or alternatively contact the EMF Helpline on 0845 702 3270 or via email – [emfhelpline@nationalgrid.com](mailto:emfhelpline@nationalgrid.com).



## ***Weather***

### **Summary of responses**

7.10.17 Respondents expressed concern regarding the safety of overhead lines in relation to adverse weather conditions.

### **National Grid's response**

7.10.18 Overhead lines are designed to withstand all but the most extreme and rare weather conditions. National Grid complies with European standards and employs significant safety margins which are included when designing pylons and other supporting structures to ensure overhead lines can withstand all but the most extreme and rare weather conditions.

7.10.19 A robust maintenance regime is followed to ensure the long-term safety of National Grid's equipment. The two existing overhead lines on Anglesey have been operating safely for more than 50 years.

## ***Noise***

### **Summary of responses**

7.10.20 Respondents expressed concerns about operational noise during wet weather conditions and the potential for this effect to significantly increase when in close proximity to an overhead connection. To avoid further operational noise, respondents suggested that putting cables underground would negate this.

### **National Grid's response**

7.10.21 With specific reference to overhead line concerns; all overhead lines can generate noise, the level of which depends mainly on the type of construction, the nominal operating voltage (275 kV and 400 kV) and weather conditions. The most common noise produced by overhead lines is a crackle which occurs when the intensity of the electric field surrounding a conductor or, more usually, an insulator causes the air to ionise. Under normal circumstances, overhead lines will be completely silent but a crackle can be heard within a few metres of the overhead line.

7.10.22 National Grid follows guidelines on noise set out in National Policy Statement EN-5 and it considers this as part of the siting and design of the substation and any overhead line. National Grid undertakes an EIA for any final route it proposes. This assessment covers amongst other issues, the potential for noise effect.

7.10.23 National Grid would undertake a full EIA in support of any final consent application. This would include assessment of the magnitude and significance of any potential operational noise effects. This assessment will be based upon surveys of the existing noise level along the proposed route which would be undertaken at the quietest times of the night.

## ***Terrorism***

### **Summary of responses**

7.10.24 Respondents expressed concern regarding safety and believed overhead lines to be an easy target for terrorists.

### **National Grid's response**

7.10.25 National Grid takes security very seriously. It works closely with the police and security services when designing its equipment and the security measures needed to protect them. There is no history of terrorist threats to high voltage electricity connections in the UK.

7.10.26 In addition the typical steel lattice pylon is inherently strong and resilient to accidental and intentional damage. However, when damage occurs, invariably due to adverse weather conditions or accidental damage, overhead lines can typically be repaired within days, and underground cables can typically be repaired within weeks.

7.10.27 All new transmission connections are required to be designed, constructed and operated to meet the requirements set out in the Electricity Safety, Quality and Continuity Regulations 2002 (as amended).

## ***Aviation***

### **Summary of responses**

7.10.28 Some concerns were expressed in relation to route corridor and crossing options and the perceived impact on the RAF and other military planes and civilian planes. These concerns primarily relate to perceived restriction on aviation activities and safety.

7.10.29 Respondents suggest the undergrounding of transmission lines in areas with overhead infrastructure would affect aviation.

### **National Grid's response**

7.10.30 In all cases, when planning to build a new overhead line, National Grid consults with the Civil Aviation Authority (CAA), National Air Traffic Service (NATS) and the Ministry of Defence (MOD).

7.10.31 During Stage One Consultation National Grid consulted with the bodies outlined above concerning its proposals in North Wales, and on the potential for effect on flight paths within their vicinity.

7.10.32 As the Project progresses, National Grid will undertake further consultation with these bodies and the relevant authorities to establish the potential for effects to arise as a result of its proposals.

7.10.33 National Grid believes that an overhead line could be developed within all of the route corridors and crossing options that would not conflict with aviation safeguarding considerations.

## ***Electric and magnetic compatibility***

### **Summary of responses**

7.10.34 Respondents expressed concerns surrounding the potential for phone equipment interference caused by high voltage equipment.

7.10.35 Respondents also expressed concerns that interference from an overhead connection would affect television reception, particularly for those living in close proximity. It was also suggested that mobile phone signal could also be affected by electromagnetic interference.

### **National Grid's response**

7.10.36 National Grid's overhead lines are designed to comply with the EU Directive on electromagnetic compatibility. In normal operation electricity transmission equipment should not interfere with FM radio, DAB, mobile phone, satellite/analogue/digital television channels reception or Wi-Fi.

7.10.37 In older type TV's (Cathode Ray Tube Visual Display Unit (VDU) screens) there is potential for magnetic fields to interfere and distort the picture when in close proximity to an overhead line. New Liquid Crystal Display (LCD) and plasma TVs are immune to interference.

7.10.38 In all cases where it is reported that National Grid equipment is thought to be causing interference with other electrical equipment, we will investigate and advise. In the unlikely event that National Grid equipment is demonstrated to be the cause of interference, remedial actions will be investigated.

## **7.11 Engineering/Design and construction**

7.11.1 The topics which are identified under this sub-theme include:

- Disruption during construction
- Transmission design
- Maintenance

### ***Disruption during construction***

#### **Summary of responses**

- 7.11.2 A general concern raised by respondents is that there would be considerable disruption to the local highway network during the construction phase. Many respondents also questioned if National Grid had done research around the road network it would use for transporting construction materials.
- 7.11.3 A number of respondents suggested that the local road network in North Wales is unsuitable for construction traffic and that potentially it would result in damage to the road network, as well as the length of time it would take and the disruption it would cause.
- 7.11.4 As part of this, a number of respondents expressed concerns regarding the transportation of materials and requested further information on what vehicles National Grid would use.
- 7.11.5 A number of concerns were expressed surrounding the impacts of construction, including the visual intrusions of a building site and the noise, dust and debris that would be emitted. A number of concerns were expressed surrounding the potential disturbance caused during construction including; pollution of controlled waters from construction waste products and party wall issues.
- 7.11.6 A number of requests were received for more information on the construction phase and what it would entail.

#### **National Grid's response**

National Grid would agree a detailed traffic management plan with the local authority and Welsh Government. This would normally include a wide range of measures to reduce construction impacts on local communities including;

- Restricted traffic routes limited to major highways wherever possible;
  - restrictions on hours of operation and hours of delivery;
  - upgrades to the existing highway network where necessary;
  - development of temporary accesses along the aligned route to minimise the number of highway access points;
  - the imposition of restrictions in drivers and the clear marking of construction vehicles including the use of clear signage;
  - speeding restrictions for drivers and
  - the imposition of local restrictions recognising local issues and concerns.
- 7.11.7 National Grid develops and agrees a traffic management plan in conjunction with the Welsh Government, North Wales Trunk Roads Agency, local authorities and the local police, with a view to minimising the number of journeys on local roads and scheduling journeys to avoid adding to the local traffic at peak times. National Grid will consult with emergency services in developing the traffic management plan to ensure their essential role is not compromised by National Grid's proposals.
- 7.11.8 Materials for construction of the new connection would normally be transported to the site in HGVs. Should any abnormal road deliveries be required, National Grid would work very closely with the relevant highway authorities and the police to control the amount of disruption that is caused to the local road network.

- 7.11.9 Road access is necessary for National Grid staff and for the transport of equipment during construction, maintenance or repair.
- 7.11.10 Given that that the route corridor (and the route within that corridor) will be chosen with a view to avoiding settlements and dwellings, National Grid hopes to minimise noise as much as possible during construction. National Grid seeks to ensure that any such disturbance on local communities and residents is minimal. These factors will be evaluated during the EIA on final connection design, routeing and alignment.
- 7.11.11 A detailed Environmental Management Plan would be developed in conjunction with statutory bodies, such as Natural Resources Wales, and would be rigorously adhered to throughout the construction activities. This would put in place robust pollution prevention measures to manage potentially polluting activities.
- 7.11.12 National Grid will ensure that any final design would not compromise the structural integrity of any nearby property and therefore would not expect concerns to arise regarding 'party walls'.

## ***Transmission design***

### **Summary of responses**

- 7.11.13 A general concern expressed by respondents was the need for any new transmission connection to be designed with the greatest of care and with regard of the surrounding landscape with a number of respondents fearing that the connection would be difficult to screen.
- 7.11.14 More information was requested for further details of transmission pylons, including their size, height, spacing and appearance.
- 7.11.15 A number of respondents commented that transmission pylons are inefficient and outdated technology and National Grid should look at using more up-to-date designs – including the new T-pylon.
- 7.11.16 Respondents also raised concern regarding the impact transmission pylons would have on farmland and how National Grid would engage with the farming community with regard to the siting of any new infrastructure.

### **National Grid's response**

- 7.11.17 Whenever National Grid constructs overhead lines it looks carefully at how it can reduce the visual effect through careful routeing. This includes consideration of any existing infrastructure in the area such as main roads and built-up areas, as well as natural topography, which can offer some means of mitigation.
- 7.11.18 National Grid seeks to avoid areas which are nationally or internationally designated for their wildlife or cultural significance, such as Areas of Outstanding Natural Beauty, National Scenic Areas, Special Areas of Conservation and Scheduled Ancient Monuments and will take into account the significance of these and other areas through consultation with local authorities and other stakeholders with particular interests in such sites.
- 7.11.19 The size, type, height and spacing of pylons are determined by design considering safety, topographical, operational and environmental considerations. We use a range of different designs typically from from 30 to 55 metres high, which are usually spaced at around 360 metres apart. We take great care to consider their positioning to limit any impact they could have and always aim to strike the right balance between height, shape, distance and location of the pylons.
- 7.11.20 In 2011, The Royal Institute of British Architects (RIBA), on behalf of the Department of Energy and Climate Change (DECC) and National Grid, launched a competition to invite architects, designers, engineers and students of those disciplines to 'rethink' the electricity pylon. The winner, selected from 250 entries, was the 'T-pylon' design by Bystrup Architecture. The design is typically 30-35 metres high. National Grid is working with Bystrup to develop the design further. The 'T-pylon' could be an alternative option for the North Wales Connection Project if an overhead line is progressed.

- 7.11.21 With regard to National Grid infrastructure constructed on farmland, National Grid would consult on the precise siting and routeing with landowners and tenants to ensure any effect on farming operations is minimised. In addition, National Grid would consult in order to agree the routes and timing of temporary access tracks and construction compounds to avoid disturbance to farming operations and farm animals. Access for ongoing maintenance would only be required occasionally and would also be planned around cropping patterns. It is not anticipated that there will be any significant effect on agricultural operations, or proposals for agricultural diversification, and the pylons do not have a fence around the footing.
- 7.11.22 With regard to pylons located in grassland, whilst it is understood some grassland activities are more intensive than others, the location of pylons in grassland tends to result in a lower loss of agricultural production than pylons located in arable land. However, in either case National Grid, in return for the granting of relevant rights for the pylons to be placed in that land, will make a one-off/capital payment of compensation being the easement consideration.
- 7.11.23 The final route alignment, pylon type and pylon locations would all be subject to detailed consultation with landowners, local communities and stakeholder organisations prior to submission of any consent application.

## ***Maintenance***

### **Summary of responses**

- 7.11.24 Respondents expressed concern over the possible disruption that could be caused by maintenance of transmission connections, particularly regarding access to National Grid's infrastructure.
- 7.11.25 A number of respondents requested further information on how National Grid undertakes its inspections and general maintenance on overhead lines and the general lifespan of a transmission pylon. As part of this, concern was raised regarding overhead lines being prone to adverse weather conditions, such as lightning strikes, and as a result, would therefore require a large amount of maintenance.

### **National Grid's response**

- 7.11.26 National Grid seeks to minimise the effects of any disruption from repair, maintenance and refurbishment activities by ensuring that overhead lines are well maintained and faults returned to service as soon as possible.
- 7.11.27 From time to time, access is required on to land to inspect, maintain and refurbish overhead lines and underground cables; National Grid's rights of access to undertake such works are contained within the wayleave agreement or permanent easement with the landowner.
- 7.11.28 Overhead lines typically require minimal maintenance for the first 40 years of their life. Visual inspections on foot are made every two years and once each year by helicopter. Pylons are repainted as and when required, but typically every 15 to 18 years. At around 40 years, National Grid assesses the condition of the line following which the frequency of inspection may be increased until a full refurbishment is undertaken. During a full refurbishment, the conductors and insulators (wires and attachments) are replaced and pylon steel work strengthened as necessary.
- 7.11.29 Steel lattice pylons are designed to withstand regular lightning strikes without the need for repairs. National Grid's maintenance regime fully addresses any wear and tear from the UK's weather and climate conditions.
- 7.11.30 While overhead lines are prone to weather related outages, primarily wind and lightning related events, the vast majority of such outages do not result in the 'permanent' failure of the circuit and they usually return to service in the delayed auto-reclose time which is usually less than sixty seconds. This process maintains network resilience without operator intervention and helps maintain the overall security of the network.
- 7.11.31 Because cable circuits are not prone to weather events in the same frequency as overhead lines (although cable sealing ends can suffer weather related failures) a fault outage is highly unlikely to be 'temporary' and therefore any failure is very likely to be 'permanent' and needing repair. This means that the network must be operated in a 'depleted' mode for longer periods and its level of resilience and security is reduced while constraint costs could be greatly increased.

- 7.11.32 If a fault occurs on a 400 kV underground cable, it is on average out of service for a period 25 times longer than 400kV overhead lines. This is due principally to the long time taken to locate, excavate and undertake technically involved repairs. These maintenance and repairs also cost significantly more.
- 7.11.33 The majority of faults on cables are caused by fluid leaks, faulty joints and accessories, sheath faults, water cooling failures and, most commonly, third party damage. Under fault conditions, between two and six weeks can be required to locate the fault or fluid leak and repair the cable. During this period excavations may be required which can result in road closures and traffic management measures. In some cases, the excavations could be in the order of 4m x 30m.

## **7.12 West Gwynedd proposed substation and Glaslyn Estuary proposed underground connection**

- 7.12.1 National Grid received comments relating to the proposed new substation in West Gwynedd and the proposed additional underground cables at the Glaslyn Estuary via the Strategic Options section on the three Feedback forms. National Grid has responded to the comments received in chapters 9 and 10.

## **7.13 Policy and guidance**

- 7.13.1 The topics which are identified under this sub-theme include:

- UK policy
- Holford 'Rules' and Horlock 'Rules'

### ***UK policy***

#### **Summary of responses**

- 7.13.2 Respondents recognised that the consultation concerned National Grid's proposals rather than specific generation options. That said, a number of respondents focused on nuclear power and expressed concerns regarding it.
- 7.13.3 Respondents suggested that National Grid should employ modern and efficient technologies when it develops any new transmission connection and any additional expense should be absorbed at a UK-wide level.
- 7.13.4 Respondents referenced a preference for a focus on local energy supply and the need to secure power for the future. Additionally, it was considered that there was a need to '*future proof*' energy generation.

#### **National Grid's response**

- 7.13.5 National Grid is obliged to respond to all applications to connect new generation to its transmission system. Under Section 9 (2) of the Electricity Act, National Grid also has a duty, '*to develop and maintain an efficient, coordinated and economical system of electricity transmission in England and Wales*'; and, '*to facilitate competition in the supply and generation of electricity*'.
- 7.13.6 Decisions on energy policy and the type of energy generation to be developed are ultimately matters for the Government, which seeks to incentivise the market to achieve its aims. The UK Government is committed to achieving significant reductions in the UK's CO<sub>2</sub> emissions by 2020. As electricity generation makes up more than a quarter of the UK's total emissions, the Government is seeking to switch to low carbon sources of energy generation – such as wind and nuclear. In 2011, the Government published its National Policy Statement on nuclear power generation which identified the Wylfa site as being '*potentially suitable for the deployment of new nuclear stations..... by the end of 2025.*'
- 7.13.7 National Grid has a licence obligation to offer to connect all new generation to the transmission system. National Grid also has a statutory duty to facilitate competition in the generation of electricity. National Grid cannot therefore determine which companies or sources of power generation should be allowed to connect to the system. The mix and location of electricity generation sources is ultimately a matter for Government policy.

- 7.13.8 To encourage completion in the generation and supply of electricity, National Grid has to offer to connect any new power station to the transmission system regardless of the types of generation proposed.
- 7.13.9 National Grid works within the framework provided by legislation and National Policy Statements. National Grid is also involved in a number of national and international initiatives which foster innovation in methods of electricity transmission.
- 7.13.10 The UK's embedded electricity generation accounts for around 15% of the total generation capacity and while this proportion is expected to increase over the coming years there will still be a need for large scale power stations connected to the transmission system to provide essential security of supply.
- 7.13.11 National Grid seeks to make maximum use of its existing infrastructure and only builds new infrastructure to accommodate contracted generation rather than building connections to 'future proof'.

### **Holford 'Rules' and Horlock 'Rules'**

#### **Summary of responses**

- 7.13.12 Generally, respondents suggested that National Grid had not taken sufficient account of its Holford 'Rules' (Appendix R) and Horlock 'Rules' (Appendix S) when determining route corridors and substation sites. With regard to route corridors, respondents suggested that these are situated in areas of *'high landscape and cultural amenity'* and in areas where a new transmission connection would have a negative visual impact.
- 7.13.13 Respondents suggested that a defining principle of the Holford 'Rules' is to preserve the environment and in order to comply with this, National Grid should not be considering an overhead line within the Anglesey Area of Outstanding Natural Beauty or across the Menai Strait.

#### **National Grid's response**

- 7.13.14 The Holford 'Rules' are broad principles for overhead transmission line routeing first formulated by the late Lord Holford in 1959. They were reviewed in 1992 and have been accepted as a sound basis for overhead transmission line routeing in previous inquiry decisions and have subsequently been incorporated into the National Policy Statement (NPS) for electricity networks (EN5) designated by Parliament on 19 July 2011. They primarily focus upon reducing the amenity and landscape and visual effects of any new overhead line connection. In the context of the Glaslyn and West Gwynedd elements of the North Wales connection project, the Holford 'Rules' would have little bearing as neither proposal involves the development of new overhead lines.
- 7.13.15 National Grid also has specific guidance relating to the siting of substations, referred to as the Horlock 'Rules' (Appendix S). The guidance establishes a set of seven key criteria to assist those responsible for the siting and design of new substations and these have been used during the identification and appraisal of suitable substation sites for the West Gwynedd substation element of the current Project.
- 7.13.16 It may not always be possible to fully comply with all of the guidance set out in the 'rules' simultaneously. Best practice approaches in Environmental Impact Assessments (EIAs) are equally relevant to routeing major infrastructure such as transmission lines and substations, and the views of respondents and the public must also be weighed in the balance. National Grid recognises a detailed consideration will need to be given to the acceptability of an overhead line once all possible mitigation measures have been taken into account.
- 7.13.17 In accordance with the earlier principles set out in the Holford 'Rules', the broad route corridors identified by National Grid for a possible overhead line connection between Wylfa and Pentir have already avoided those areas of highest amenity value where possible. However, the corridors cannot avoid passing through the Anglesey Area of Outstanding Natural Beauty and across the Menai Strait.
- 7.13.18 For any parts of the route which may be overhead, the principles of the Holford 'Rules' will be used to identify future route to minimise effects on landscape and areas of amenity value. National Grid will work closely with local authorities and other statutory organisations to ensure effects can be minimised or mitigated as far as possible.

7.13.19 Since the formulation of the original Holford 'Rules', formal requirements for environmental assessment have been introduced. Whilst environmental assessment addresses wider topics than those matters on which the Rules concentrate, they remain a valuable tool in selecting and assessing potential options as part of the environmental assessment process.



## 8.0 A NEW OVERHEAD LINE BETWEEN WYLFA AND PENTIR

### 8.1 Overview

8.1.1 During Stage One Consultation respondents were asked to comment on three aspects of the proposed overhead line connection between Wylfa and Pentir, these included:

- Route corridors
- Menai Strait crossing options
- Sensitive locations

8.1.2 The following themes emerged from the comments received from the Wylfa-Pentir feedback form and the independent responses.

### 8.2 Route corridors

8.2.1 Question 3 of the Wylfa-Pentir feedback form asked respondents; *'Of the route corridors identified across Anglesey, which one do you feel National Grid should take forward?'* Options orange, purple, yellow and blue were given. The respondents were then asked under question 4 to; *'Please provide your reasons for selecting this route corridor.'*

8.2.2 The following themes emerged from the comments received from the Wylfa-Pentir feedback form regarding the route corridor options:

- Identifying a route corridor
- Subsea connection
- Underground/Overhead
- Strategic Options Report
- Need Case
- National Grid's cost assessment
- Environmental impacts
- Socio-economic impacts
- Health

8.2.3 National Grid has considered respondent's comments and responded to them below.

### 8.3 Identifying a route corridor

#### Summary of responses

8.3.1 In terms of the route corridor selection, a number of respondents disagreed with the method of route corridor selection undertaken by National Grid. It was suggested that National Grid should have proposed one preferred route corridor for public consultation so as to avoid blanket opposition or friction between communities. As part of this, a number of respondents expressed the opinion that the route corridor options presented had been selected to 'set communities against each other' in a deliberate attempt to turn one community against another.

8.3.2 Respondents requested more information and detail on the process National Grid undertakes to identify its route corridor options. As part of this, respondents also requested further information on how National Grid will identify its preferred route corridor for the Project.

### National Grid's response

- 8.3.3 National Grid did not seek to present route corridors that were divisive. National Grid considers that each of the four identified route corridors was distinctive from the others, offering discrete differences between the environmental and community effects that might arise and mitigation measures that could be implemented. Each of the corridors affected a range of different environmental and community features, which were described in National Grid's published *Wylfa-Pentir Initial Route Corridor Report* (available to download from [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)), but each was designed to avoid the most important sites and features where possible.
- 8.3.4 At the time of consultation National Grid had no preference between the corridors and sought stakeholder and community feedback to help inform the decision as to which should be taken forward. This is very much in line with the objectives set out in the Government's Guidance on the Planning Act. This seeks to encourage *'the early involvement of local communities'* to allow them to *'influence the way projects are developed and how they are integrated into the community by providing feedback on potential options'*. This early engagement also *'enables potential mitigating measures to be considered and ... built into the project...'* and may *'identify ways in which the project could...support wider strategic or local objectives'*. It is therefore hoped that the presentation of options rather than a single proposal at this early stage of the project will ultimately result in a more acceptable design solution.
- 8.3.5 The *Wylfa-Pentir Initial Route Corridor Report* (available for download from the project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) outlines the process undertaken to identify the route corridor options consulted on. The *Strategic Options Report* (available for download from the project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) outlines the process undertaken to identify strategic connection options.
- 8.3.6 In order to identify a preferred route corridor National Grid needs to balance the issues raised during Stage One Consultation from the public, stakeholders and specialist bodies with its statutory obligations to develop a connection that is safe, reliable and cost effective. National Grid will also undertake further assessments to understand what effect its proposals could have on the local area and people, the local economy, the landscape, ecology and wildlife.
- 8.3.7 Once a preferred route corridor has been identified, National Grid will develop a 'route alignment' – the actual path the connection could take. National Grid will undertake an Environment Impact Assessment (EIA) to help inform the design of the connection.

## 8.4 Subsea connection

### Summary of responses

- 8.4.1 Generally, respondents opposed all route corridors and stated a preference for a subsea connection. A number of respondents provided examples of existing subsea infrastructure crossings in the region including the A5 tunnel beneath the Conwy river and the Shell (UK) Ltd oil pipeline beneath the eastern end of the Menai Strait.

### National Grid's response

- 8.4.2 The existing infrastructure crossings referenced by respondents are comparatively short in length and might be considered for subsea connections of limited length, such as Menai Strait. For National Grid's response in relation to the Menai Strait please see section 8.33.
- 8.4.3 For National Grid's response to the **Subsea** theme please see section 7.4.

## 8.5 Underground/Overhead

### Summary of responses

- 8.5.1 There was strong and widespread opposition to overhead line development – mainly owing to perceived environmental, landscape and visual, economic and health effects which were suggested as being associated with this form of transmission (these matters are all considered further under subsequent themes below).
- 8.5.2 In general terms, respondents typically expressed the view that if National Grid progresses an onshore route it should be underground wherever possible, especially through areas of particular landscape, ecological or cultural heritage importance as well as near to residential areas.
- 8.5.3 Respondents expressed confusion as to whether one overhead line or two were required and if the existing overhead line would be decommissioned.

### National Grid's response

- 8.5.4 The existing 400 kV overhead line, which runs between National Grid's substations at Wylfa and Pentir, would remain in place. In order to comply with the Security and Quality of Supply Standards, the maximum amount of generation which is allowed to be connected by two circuits (one line of pylons) is 1.8GW. This standard helps to ensure that Britain continues to enjoy a reliable and high quality supply of electricity across the network. The new overhead line proposed would therefore be required in addition to the existing line to accommodate any combined generation beyond 1.8GW, providing an alternative export route off the island.
- 8.5.5 For further information on National Grid's response to the **Underground/Overhead** theme please see section 7.3.

## 8.6 Strategic Options Report

### Summary of responses

- 8.6.1 In general terms, many respondents opposed the findings of the *Strategic Options Report* and therefore did not consider the route corridor question valid.

### National Grid's response

- 8.6.2 When developing new projects, National Grid identifies high level options right through to the submission of detailed proposals. This is in line with the process outlined in National Grid's '*Our approach to the design and routing of new electricity transmission lines (2012)*' (Appendix G). The approach set out in this document complies with the requirements of the Planning Act 2008 and the National Policy Statements (NPSs) on Electricity Networks Infrastructure (EN-5) and retains the principles of the Holford 'Rules' (Appendix R).
- 8.6.3 National Grid is committed to carrying out meaningful consultation in a clear and transparent way. Where National Grid has identified an emerging or provisional preference for one option over others it seems right to set out the reasoning behind this judgement and seek feedback on it, rather than presenting all options on an equal basis. National Grid felt it right to combine this phase of information sharing with a stage of consultation on the options for each of the related project elements (Wylfa – Pentir connection, West Gwynedd substation etc). It was considered that this would reduce '*consultation fatigue*', avoiding an overly complex multi-stage to the first phase of consultation.
- 8.6.4 National Grid is committed to giving people the opportunity to comment on its proposals and considers the comments received when developing its proposals further. This includes presenting a number of options for respondents to comment on. National Grid's *Consultation Strategy* was developed in conjunction with Isle of Anglesey County Council and Gwynedd Council and sets out an agreed approach to consultation.
- 8.6.5 National Grid is taking into account the issues raised during Stage One Consultation which will inform its conclusions of its preferred strategic option.

8.6.6 For further information on the strategic options National Grid considered and the strategic options process please see National Grid's response in section 7.2.

## 8.7 Need Case

### Summary of responses

8.7.1 In general terms, respondents questioned the need for the connection. In relation to nuclear power, a number of respondents opposed nuclear power.

### National Grid's response

8.7.2 For National Grid's response to the **Need Case** theme please see section 7.7.

## 8.8 National Grid's costs assessment

8.8.1 The topics which are identified under this sub-theme include:

- Lifetime costs

### *Lifetime costs*

#### Summary of responses

8.8.2 A number of respondents recognised that the costs of the connection will be 'long term'. As such, it is therefore important that the '*lifetime costs*' of any connection should be an important consideration when National Grid decides a technology and connection preference.

### National Grid's response

8.8.3 For National Grid's response to the **Lifetime Costs** sub-theme please see section 7.6.1.

## 8.9 Environmental impacts

8.9.1 The topics identified under this sub-theme include:

- Landscape and views
- Cultural heritage and historic sites
- Biodiversity
- Designated sites

### *Landscape and views*

#### Summary of responses

8.9.2 Respondents expressed concern regarding the visual effect associated with an overhead transmission line. The majority of respondents felt that any of the route corridors selected would have an adverse effect on visual amenity.

8.9.3 As part of this, a number of respondents were concerned that the cumulative impact of the proposed new infrastructure in the area including onshore and offshore wind farms would have a particularly detrimental visual effect on the area.

8.9.4 Respondents also expressed opposition based on the potential for '*sky-lining*' and the cumulative visual impact with the existing 400 kV transmission line and 132 kV lines south of Wylfa which is felt already compromises the landscape.

8.9.5 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include: designated areas (including designated cultural heritage sites, Sites of Special Scientific Interest (SSSI), designated wildlife sites and listed buildings and structures). Specific locations referenced included:

- Anglesey Area of Outstanding Natural Beauty
- Snowdonia National Park
- Anglesey Landscape Character Area 8: Dulas Bay Hinterland
- Amlwch and Parys Mountain Registered Historic Landscape

#### **National Grid's response**

8.9.6 National Grid recognises that any new overhead transmission line would inevitably have adverse visual effects and alter the landscape character. The scale and significance of these changes will be assessed and National Grid will propose mitigation measures to reduce these effects as far as reasonably practicable.

8.9.7 On certain parts of Anglesey there are other significant development proposals. These proposals, combined with any new development by National Grid, would give rise to combined effects. National Grid will consider other development proposals when selecting its preferred route corridor, and will assess any combined effects as part of any final consent application.

8.9.8 With regards to specific comments regarding the potential for 'sky-lining', National Grid acknowledges the potential for overhead transmission lines to coalesce visually. National Grid will take this into account and will also look to see whether the presence of existing electrical infrastructure could provide opportunities to rationalise and thereby mitigate the effects of any final proposal.

8.9.9 For further information on National Grid's response to the **Landscape and views** sub-theme please see section 7.8.

#### **Cultural heritage and historic sites**

##### **Summary of responses**

8.9.10 In general terms, many respondents felt the Project area is a place of rich cultural heritage and any overhead transmission line would have a detrimental effect on this. As part of this, respondents suggested that the route should be placed in the sea or underground cables used, as they considered that overhead lines and pylons would have a negative effect on views from historic and/or registered landscapes across North Wales, especially views across the Menai Strait, along to and from listed buildings and Scheduled Monuments.

##### **National Grid's response**

8.9.11 For National Grid's response to the **Cultural heritage and historic sites** sub-theme please see section 7.8.

#### **Biodiversity**

##### **Summary of responses**

8.9.12 In general terms, many respondents felt the Project area is rich in ecological and biodiversity resources and an overhead transmission line would greatly affect this. Respondents expressed concern that overhead lines would have a negative effect on wildlife specifically migrating birds.

##### **National Grid's response**

8.9.13 For National Grid's response to the **Biodiversity** sub-theme please see section 7.8.

## **Designated sites**

### **Summary of responses**

8.9.14 In general terms, many respondents expressed concern over the perceived potential for effect on designated sites and areas that an overhead transmission line would have. Respondents expressed concern about the number of national and international wildlife designations within the proposed route corridors.

### **National Grid's response**

8.9.15 In identifying its route corridors, National Grid has sought to avoid designated sites where possible. Where this is not the case, careful consideration will be given to the likely effects that any new connection might have upon designated sites and those other sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* Appendix T), taking into account any opportunities to avoid the sites by routeing any line around them.

8.9.16 For further information on National Grid's response to the **Designated sites** sub-theme please see section 7.8.

## **8.10 Socio-economic impacts**

8.10.1 The topics which are identified under this sub-theme include:

- Impacts on tourism/economy

### **Impacts on tourism/economy**

#### **Summary of responses**

8.10.2 Respondents stated their belief that all of the route corridors identified by National Grid would have a detrimental effect on tourism, which was cited as one of the main sources of income in the Project area. Tourism was cited as a vital contributor to the local economy.

8.10.3

### **National Grid's response**

8.10.4 For National Grid's response to the **Impacts on tourism/economy** sub-theme please see section 7.9.

## **8.11 Health**

8.11.1 The topics which are identified under this sub-theme include:

- Health & Electric and Magnetic Fields (EMFs)
- Emotional health

### **Health & EMFs**

#### **Summary of responses**

8.11.2 Respondents expressed concerns about the perceived health risks relating to Electric and Magnetic Fields (EMFs) and overhead lines. Respondents expressed concerns about living in proximity to high voltage infrastructure and long-term exposure to EMFs.

### **National Grid's response**

8.11.3 For National Grid's response to the Health & EMFs sub-theme please see section 7.10.

## ***Emotional health***

### **Summary of responses**

8.11.4 Respondents expressed concerns about the potential effect on the emotional wellbeing of residents living near to an overhead transmission line.

### **National Grid's response**

8.11.5 National Grid understands that new infrastructure proposals can give rise to concerns amongst local communities and residents, as is the case with many different types of new development proposal. Some of those concerns have been expressed specifically in the Health & EMFs sub-theme please see section 7.10.

8.11.6 National Grid's experience in developing new transmission projects suggests that initial community concerns about a developing proposal tend to ease once the development has been completed and becomes an established element with the landscape.

8.11.7 The Health Protection Agency (HPA) is the authority on public health matters. The HPA provides a range of advice and guidance in relation to a number of relevant health considerations. Respondents should seek further information from the HPA should they have specific queries relating to emotional health.

## **8.12 Orange route corridor**

8.12.1 The following themes emerged from comments received on the orange corridor:

- Route corridor
- Undergrounding
- Alternative route corridor
- Environmental impacts
- Engineering/Design and construction
- Socio-economic impacts
- Health

### ***Route corridor***

#### **Summary of responses**

8.12.2 Generally, the orange route corridor received more supporting comments from respondents than the other route corridor options. Specific support was based on the route being the shortest and the least populated which respondents felt would have the least impact on local communities. It was also suggested that due to the orange route corridor being the shortest it would be the least costly to build.

8.12.3 Respondents also expressed support for the orange corridor based on its proximity to the existing 400 kV overhead line. Respondents felt placing the new overhead line next to the existing one would minimise the visual and landscape impact. Conversely, some respondents felt that having two overhead transmission lines so close together would cause an '*eyesore on the landscape*' and would have safety implications.

8.12.4 Respondents felt the orange route corridor provided the most suitable option for connecting to crossing options A, B or C.

8.12.5 Additionally, respondents cited preference for the orange route corridor as it would be closer to the proposed Celtic Array development and would provide better connection options for Celtic Array and into National Grid's Pentir substation.

### **National Grid's response**

8.12.6 National Grid welcomes supporting and opposing comments on the orange route corridor and will take into account all the comments when making its decision on which route corridor to progress.

- 8.12.7 The four route corridors presented by National Grid can all link to any of the five Menai Strait crossing options presented, however National Grid does recognise that certain combinations of corridors and crossing points are likely to give rise to greater adverse effects than others.
- 8.12.8 All of the route corridors brought forward by National Grid take into consideration existing and planned infrastructure in the area. As its proposals progress, National Grid will also consult with the Welsh Government on any proposed infrastructure in the area and with other developers including Celtic Array on its proposals to minimise disruption and impact of the proposed developments seeking to optimise the overall new infrastructure National Grid needs to take forward.

## ***Undergrounding***

### **Summary of responses**

- 8.12.9 On the whole, respondents stating preference for the orange route corridor did so as they felt it would be the easiest route corridor to underground in sensitive areas. As part of this, some respondents requested National Grid underground on the Gwynedd shore to protect views from the Anglesey Area of Outstanding Natural Beauty towards Snowdonia.

### **National Grid's response**

- 8.12.10 Iconic views and views from within the Anglesey Area of Outstanding Natural Beauty will be important considerations when determining which corridor and crossing to prefer and what mitigation measures (including the possible localised use of underground/undersea cables) might be most appropriate.
- 8.12.11 For further information on National Grid's response to the ***Undergrounding*** theme please see section 7.3.

## ***Alternative route corridor***

### **Summary of responses**

- 8.12.12 Respondents suggested that when the orange route corridor reaches the A55 route, it should continue to cross the Menai Strait to the south of the crossing options area as this would have less of a visual and landscape impact. As part of this, respondents also suggested that the existing overhead line be diverted along this same route to enable pylons near to Llanfairpwllgwyngyll and along Britannia Bridge to be removed.
- 8.12.13 Respondents also suggested that National Grid should utilise the existing 400 kV overhead line that runs between National Grid's substations at Wylfa and Pentir, which would mean the new overhead line being proposed would not be required.

### **National Grid's response**

- 8.12.14 The *Wylfa-Pentir Initial Route Corridor Report* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) outlines the process undertaken to identify the route corridor options consulted on.
- 8.12.15 National Grid's study area included the whole of the Isle of Anglesey and the Gwynedd coastline along the Menai Strait and continuing inland towards Pentir substation. This study area was defined in order to maximise the potential for finding a suitable route corridor.
- 8.12.16 Route corridors were defined having regard to a wide range of environmental, technical and socio-economic features and designations. Constraints to the routing of an overhead line include for example, the Area of Outstanding Natural Beauty, scheduled monuments and SSSIs where these are avoidable. The route corridors have been designed to exclude a large majority of these constraints as detailed in the *Wylfa-Pentir Initial Route Corridor Report*. In defining the route corridors, consideration was also given to other factors such as topography and landscape character, principal settlements and existing infrastructure. A number of route corridors were identified and were refined through consideration of the potential effects of each route corridor.



- 8.12.17 National Grid did not identify a possible crossing point to the south west of Brynsiencyn as crossing options D and E were thought to provide advantages over a longer, less direct crossing point further along the Strait, which is an increasingly open landscape and close to Caernarfon and Caernarfon Castle. The greater crossing distances in this location would also necessitate even taller pylons to maintain safe clearances between the sea surface and the overhead conductor cables.
- 8.12.18 The existing 400 kV overhead line, which runs between National Grid's substations at Wylfa and Pentir, Gwynedd, would remain in place. In order to comply with the Security and Quality of Supply Standards, the maximum amount of generation which is allowed to be connected by two circuits (one line of pylons) is 1.8GW. This standard helps to ensure that Britain continues to enjoy a reliable and high quality supply of electricity across the network. The new overhead line proposed would therefore be required in addition to the existing line to accommodate any combined generation beyond 1.8GW, providing an alternative export route off the island.

### **8.13 Environmental impacts**

The topics identified under this sub-theme include:

- Landscape and views
- Cultural heritage and historic sites
- Biodiversity
- Designated sites

#### ***Landscape and views***

##### **Summary of responses**

- 8.13.1 Generally, respondents expressed a preference for the orange route corridor as it is felt it would be easier to mitigate from a visual and landscape perspective. Respondents felt the topography of the landscape lends itself well to screening with its rolling landscape and the presence of woodland areas and other vegetation.

##### **National Grid's response**

- 8.13.2 For further information on National Grid's response to the ***Landscape and views*** sub-theme please see section 7.8.

#### ***Cultural heritage and historic sites***

##### **Summary of responses**

- 8.13.3 In general terms, whilst many respondents suggested that should National Grid take forward the orange route corridor, consideration should be given to ensure impact on buildings, playing fields and sites of historic and cultural interest is minimised.

##### **National Grid's response**

- 8.13.4 Effects on the setting of listed buildings, Scheduled Monuments, conservation areas and other heritage assets will be considered by National Grid. For more information on National Grid's response to the ***Cultural heritage and historic sites*** sub-theme please see section 7.8.

## ***Biodiversity***

### **Summary of responses**

- 8.13.5 Respondents expressed concern that the orange route corridor would have a negative effect on wildlife and result in habitat disturbance and requested National Grid undertake further studies and assessments to identify the potential impacts.
- 8.13.6 Respondents also expressed concern that any construction of overhead lines and underground connections would result in habitat change and potentially interfere with hydrological patterns or flows on fens and wetland sites.
- 8.13.7 Resident species relevant to the orange route corridor mentioned by residents included: migrating birds moving between the Talwrn area and Cors Erddreiniog, hen harriers, bitterns and corncrakes.

### **National Grid's response**

- 8.13.8 For National Grid's response to the ***Biodiversity*** sub-theme please see section 7.8
- 8.13.9 The specific sites identified in relation to the orange corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## ***Designated sites***

### **Summary of responses**

- 8.13.10 In general terms, many respondents preferred the orange route corridor as it has the least designated sites along the route and avoids the central part of the island. That said, the Anglesey and Llŷn Fens Ramsar was cited as an area of concern and an area that it is hoped National Grid will avoid.

### **National Grid's response**

- 8.13.11 For National Grid's response to the ***Designated sites*** sub-theme please see section 7.8
- 8.13.12 The potential effects of any new overhead transmission line on specific sites identified in relation to the orange corridor will be considered alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T). This will also take into account the potential to avoid direct impacts by routeing any new line around these areas and/or mitigate possible effects upon them.

## **8.14 Engineering/Design and construction**

- 8.14.1 The topics which are identified under this sub-theme include:
- Transmission design

### ***Transmission design***

#### **Summary of responses**

- 8.14.2 Respondents requested that should National Grid progress with the orange route corridor, it should look into using the new T-pylon to reduce the visual impact to the area. As part of this, respondents suggested that National Grid should replace the pylons on the existing 400 kV overhead line with the T-pylon.

### **National Grid's response**

8.14.3 Possible pylon types were presented for information during Stage One Consultation. These included the T-ylon design, which is currently being developed by National Grid. National Grid will carefully consider pylon design and route options and expects to present these issues as part of the next stage of public consultation. For further information on transmission design including the T-ylon please see National Grid's response in section 8.14.

## **8.15 Socio-economic impacts**

8.15.1 The topics which are identified under this sub-theme include:

- Proximity

### ***Proximity***

#### **Summary of responses**

8.15.2 Respondents raised concern about the siting of National Grid's infrastructure within close proximity to areas of high amenity, residential areas, homes and existing infrastructure in relation to the orange corridor.

### **National Grid's response**

8.15.3 When routing new infrastructure through areas of high amenity, National Grid gives careful consideration to a number of factors including landscape character, view to and from adjacent areas and designated sites, effects on ecology, cultural heritage, local communities and tourism. National Grid also gives consideration to the presence of existing and proposed communication and utilities infrastructure.

8.15.4 For further information on the ***Proximity*** sub-theme please see section 7.9.

## **8.16 Health, safety and security**

8.16.1 The topics which are identified under this sub-theme include:

- Health & Electric and Magnetic Fields (EMFs)
- Aviation

### ***Health and EMFs***

#### **Summary of responses**

8.16.2 In general terms, respondents expressed concern over the health impacts associated with living in close proximity to an overhead transmission line.

### **National Grid's response**

8.16.3 For National Grid's response to the ***Health & EMFs*** sub-theme please see section 7.10.

## ***Aviation***

### **Summary of responses**

8.16.4 A number of respondents expressed support for the orange route corridor as it avoids aviation links on the west side of the island, such as the RAF Valley flight path.

### **National Grid's response**

8.16.5 For National Grid's response to the ***Aviation*** sub-theme please see section 7.10.

## **8.17 Blue route corridor**

The following themes emerged from comments received on the blue corridor:

- Route corridor
- Environmental impacts
- Socio-economic impacts
- Health, safety and security

### ***Route corridor***

#### **Summary of responses**

8.17.1 In general terms, those respondents supporting the blue route corridor did so, as along with the orange route corridor, it is the shortest and most direct route. Additionally, respondents supported the blue route corridor as it would have less of a cumulative impact than the orange route corridor, as it would not directly follow the existing 400 kV overhead line.

8.17.2 Those respondents that opposed the blue route corridor felt that it would be detrimental to the Menai Strait area as it links to crossing options C, D or E.

### **National Grid's response**

8.17.3 National Grid welcomes supporting and opposing comments on the blue route corridor and will take into account all the comments when making its decision on which route corridor to progress. The route corridors between the common area vary in length between 24km and 33km – with the blue route corridor being approximately 27 km in length.

8.17.4 The four route corridors presented by National Grid can all link to any of the five Menai Strait crossing options presented. However National Grid acknowledges that certain combinations of corridors and crossing points are likely to give rise to greater adverse effects than others. National Grid will seek to identify the most appropriate overall solution, taking into account total effects throughout a complete connection corridor from Wylfa to Pentir.

## **8.18 Environmental impacts**

8.18.1 The topics identified under this sub-theme include:

- Landscape and views
- Biodiversity

### ***Landscape and views***

8.18.2 Whilst a number of respondents believed that the blue route corridor would minimise the impact on the Anglesey Area of Outstanding Natural Beauty (AONB), respondents felt that this was overshadowed by the landscape impact that would ultimately come from a second, separate overhead line.

- 8.18.3 Conversely respondents argued that the blue route corridor would run along a '*prominent local ridgeline*' and that this, along with the cumulative impact of the existing 400 kV overhead line nearby, would not therefore be in accordance with the Holford 'Rules' (Appendix R).
- 8.18.4 Respondents cited that the blue route corridor lies within the Anglesey Special Landscape Area (Ynys Môn Local Plan Policy 31) and should therefore be avoided.
- 8.18.5 Specific locations to avoid on visual/landscape grounds were suggested by respondents including:
- Anglesey AONB
  - Amlwch and Parys Mountain Registered Historic Landscape
  - Views south of the road and bridleway at Penmount Farm

### **National Grid's response**

- 8.18.6 National Grid recognises that the Isle of Anglesey County Council designated all rural land beyond the Area of Outstanding Natural Beauty as a '*Special landscape Area*' in 1996. Emerging local authority policy takes a more nuanced approach to assessing development impacts on the wider countryside, seeking to ensure that development proposals take into account the character of the landscape within which it is located. National Grid will have regard to local and national planning policy when considering which option to take forward.
- 8.18.7 For more information on National Grid's response to the ***Landscape and views*** sub-theme please see section 7.8.

### ***Biodiversity***

#### **Summary of responses**

- 8.18.8 The main concern expressed by respondents relating to the biodiversity in the blue route corridor is its proximity to the Cefni Marshes RSPB. Respondents suggested that the corridor would have an impact on any future development planned here.
- 8.18.9 Respondents expressed concern about the impact the blue route corridor would have on the Cors Bodwrog SSSI which is important for birds such as Berwick swans flying between the SSSI and Tre-Ysgawen.

### **National Grid's response**

- 8.18.10 For National Grid's response to the ***Biodiversity*** sub-theme please see section 7.8.
- 8.18.11 The specific sites identified in relation to the blue corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* in Appendix T).

## **8.19 Socio-economic impacts**

- 8.19.1 The topics which are identified under this sub-theme include:
- Impacts on businesses/tourism/economy

### ***Impacts on businesses/tourism/economy***

#### **Summary of responses**

- 8.19.2 A number of respondents opposing the blue route corridor stated their belief that an overhead connection would have a detrimental effect on holiday rental businesses near Llangefni and Gaerwen. Conversely, respondents stated a preference for the blue route corridor as it is the only route corridor that does not come to Plas Coch – a business in the area that has been subject to recent investment.

## **National Grid's response**

- 8.19.3 For National Grid's response to the Impacts on businesses/tourism/economy sub-theme please see section 7.9.
- 8.19.4 The specific sites and locations identified in relation to the blue corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* in Appendix T). However, it is only crossing options C and D that pass close to the holiday park at Plas Coch.

## **8.20 Health, safety and security**

- 8.20.1 The topics which are identified under this sub-theme include:
- Aviation

### ***Aviation***

#### **Summary of responses**

- 8.20.2 Some concerns were expressed regarding the blue route corridor and proximity to RAF Mona. These concerns primarily relate to perceived restriction on aviation activities and safety.

## **National Grid's response**

- 8.20.3 For National Grid's response to the ***Aviation*** sub-theme please see section 7.10.

## **8.21 Purple route corridor**

- 8.21.1 The following themes emerged from comments received on the purple corridor:
- Route corridor
  - Alternative route corridor
  - Subsea connection
  - Environmental impacts
  - Engineering/Design and construction
  - Health, safety and security

## **8.22 Route corridor**

#### **Summary of responses**

- 8.22.1 In general terms, those respondents supporting the purple route corridor did so as it was felt it would have the least impact on the environment and tourism. Conversely, opposition to the corridor was expressed due to it being the longest and therefore the most costly to build and would have a negative environmental and economic impact.
- 8.22.2 Respondents expressed support for the route as it avoids the existing 400 kV overhead line. One respondent stated their support for the purple route corridor as it would run alongside the existing 132 kV overhead line and would therefore minimise the cumulative impact. Conversely, one respondent stated opposition to the purple route corridor due to its proximity to the existing 132 kV overhead line and asked if it could be taken down.
- 8.22.3 Respondents generally expressed support for the purple route corridor as part of the corridor follows the existing A55 road and was felt it would therefore have the least impact on the environment and general local amenity. One respondent supported the purple route corridor as if progressed it would deter low-flying helicopters and other aircraft flying over the area.
- 8.22.4 A number of respondents expressed opposition to the route corridor due to its narrowness to the east of Llandaniel Fab which was felt would restrict routeing options.
- 8.22.5 Those respondents that opposed the purple route corridor felt that it would be detrimental to the Menai Strait area as it links to crossing options C,D or E.

### **National Grid's response**

- 8.22.6 National Grid welcomes supporting and opposing comments on the purple route corridor and will take into account all the comments when making its decision on which route corridor to progress. As part of this process National Grid will consider whether the removal of the existing 132 kV overhead line would significantly mitigate the effects of a new 400kV overhead line.
- 8.22.7 The four route corridors presented by National Grid can all link to any of the five Menai Strait crossing options presented, however National Grid does recognise that certain combinations of corridors and crossing points are likely to give rise to greater adverse effects than others.

## **8.23 Subsea connection**

### **Summary of responses**

- 8.23.1 A number of respondents opposed the route corridor and stated a preference for a subsea connection.

### **National Grid's response**

- 8.23.2 For National Grid's response to the **Subsea** theme please see section 7.4.

## **8.24 Environmental impacts**

- 8.24.1 The topics identified under this sub-theme include:

- Landscape and views
- Biodiversity
- Designated sites

### ***Landscape and views***

#### **Summary of responses**

- 8.24.2 Respondents suggested that the purple route corridor would have an adverse effect on the landscape of the local area. It was stated that it is a flat and marshy area which would make it difficult to put the cables underground which in turn would have a detrimental effect on the views of the Anglesey Area of Outstanding Natural Beauty.
- 8.24.3 Furthermore, respondents expressed concern regarding the character of the landscape which they felt would make the routeing of an overhead line difficult. Specifically, one respondent mentioned the '*extensive geological form of the area and Coedana granite rock outcrops*' which was felt to provide the characteristic undulating ridges and valleys that run in a south westerly to north easterly direction.
- It was felt an overhead line here would be at greater odds with the '*overall and dominant grain of the wider landscape*'.
- 8.24.4 As part of this, respondents also expressed opposition to the purple route corridor due to the potential '*sky-lining*' along the ridge near Llanddaniel Fab which respondents felt was in direct conflict with Holford Rule 4. Respondents were also concerned about the impact the purple route corridor would have on the landscape and views in Rhoscolyn and Cwyfan.
- 8.24.5 Specific locations to avoid on visual/landscape grounds were suggested by respondents including:
- Aberffraw Community Council

### **National Grid's response**

- 8.24.6 For more information on National Grid's response to the **Landscape and views** sub-theme please see section 7.8.

8.24.7 The specific sites identified in relation to the purple route corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* in Appendix T).

## ***Biodiversity***

### **Summary of responses**

8.24.8 Respondents expressed concern that the purple route corridor would have a negative effect on wildlife in the area specifically the Special Area of Conservation (SAC) at Aberffraw and the Aberffraw, Llyn Padrig and Llyn Maelog SSSIs. It was noted that many respondents felt National Grid had underestimated the sensitivity of the landscape.

8.24.9 There were a number of concerns regarding the diverse nature of migrating and wintering waders in the area which respondents felt would be at risk if National Grid constructed an overhead line. Additionally, respondents raised concerns regarding accidental bird strikes on pylons from various species including the northern shoveller duck, red-listed bittern, common shelduck and ospreys.

8.24.10 Resident species relevant to the purple route corridor which were recorded by residents included: marsh and hen harriers, red-listed bittern, water voles and otters, colonies of bats and great crested newts near Malltreath, migrating birds moving between the Talwrn area and Cors Erddreiniog, and corncrakes.

### **National Grid's response**

8.24.11 For National Grid's response to the ***Biodiversity*** sub-theme please see section 7.8.

8.24.12 Where birds striking the line is a significant concern, the risk could be partially mitigated by the fitting of bird flight diverters attached to the top (earth) wire of the pylons, to increase their visibility.

8.24.13 The specific sites identified in relation to the purple corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## ***Designated sites***

### **Summary of responses**

8.24.14 In general terms, many respondents opposed the purple route corridor due to the area having a number of sensitive and/or designated sites. Areas that respondents cited as being of particular concern included:

- Malltraeth
- Newborough Forest
- Newborough Warren
- Cefni Marshes

### **National Grid's response**

8.24.15 For National Grid's response to the ***Designated sites*** sub-theme please see section 7.8.

8.24.16 The specific sites identified in relation to the purple corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T). Whilst both Newborough Forest and Newborough Warren are located a considerable distance from the edge of the purple corridor, the potential for long distance views from these areas of any new line will be considered when identifying the most appropriate connection.



## **8.25 Engineering/Design and construction**

8.25.1 The topics which are identified under this sub-theme include:

- Disruption during construction
- Transmission design

### ***Disruption during construction***

#### **Summary of responses**

8.25.2 A general concern raised by respondents is how the construction process will affect the local water supplies for domestic and farming purposes. As part of this, respondents raised concerns regarding how National Grid's construction phase would impact water voles and otters.

#### **National Grid's response**

8.25.3 At the detailed design stage National Grid will assess the potential effects that construction activities (including the installation of pylon foundations or buried cables) might have upon the quantity and quality of ground and surface water supplies.

8.25.4 The results of detailed habitat and species surveys will inform any final design proposal and an ecological mitigation plan, so as to avoid or mitigate impacts to protected species such as water voles and otters.

8.25.5 For further information on National Grid's response to the ***Disruption during construction*** sub-theme please see section 7.11.

### ***Transmission design***

#### **Summary of responses**

8.25.6 Respondents requested that should National Grid progress with the purple route corridor, it should look into using the new T-pylon to reduce the visual impact to the area. As part of this, respondents suggested that National Grid should replace the pylons on the existing 400 kV overhead line with the T-pylon.

#### **National Grid's response**

8.25.7 National Grid will consider whether rebuilding the existing line would provide significant mitigation for any additional new line build, recognising that such a rebuild would significantly increase the technical challenges, construction effects and cost of any connection.

8.25.8 National Grid will carefully consider pylon design and takes great care to consider their positioning to limit any impact they could have and always aims to strike the right balance between height, shape, distance and location of pylons. For further information on transmission design including the T-pylon please see National Grid's response in section 8.14.

## **8.26 Health, safety and security**

8.26.1 The topics which are identified under this sub-theme include:

- Aviation

## **Aviation**

### **Summary of responses**

8.26.2 Some concerns were expressed in relation to the purple route corridor and the proximity to RAF Valley. These concerns primarily relate to perceived restriction on aviation activities and safety.

### **National Grid's response**

8.26.3 For National Grid's response to the **Aviation** sub-theme please see section 7.10.

## **8.27 Yellow route corridor**

8.27.1 The following themes emerged from comments received on the yellow corridor:

- Route corridor
- Alternative route corridor
- Environmental impacts
- Socio-economic impacts
- Health, safety and security

## **8.28 Route corridor**

### **Summary of responses**

8.28.1 In general terms, respondents supporting the yellow route corridor felt it would have less landscape and tourist impact as it would broadly follow existing energy and transport infrastructure, including the A55 and local railway network. As part of this, one respondent hoped that if National Grid progresses the yellow route corridor it would enable improvements to be made to the A5025. Conversely, a number of respondents opposed the yellow route corridor due to it being so close to the A55.

8.28.2 Respondents also expressed support for the yellow route corridor as it would be close to onshore wind farms to the north of the corridor area. It would also enable the new overhead line to follow the existing Wylfa to Penrhos 132 kV line which was felt would minimise the wider visual impact. Conversely, one respondent stated opposition to the yellow route corridor due to its proximity to the existing 132 kV overhead line and asked if it could be taken down.

8.28.3 Support for the yellow route corridor was also expressed due to it being the furthest route corridor from National Grid's existing 400 kV overhead line which was felt provides security of supply.

8.28.4 Those respondents that opposed the yellow route corridor felt that as it was the longest it would be the most costly to build. Additionally, it was felt that it would be detrimental to the Menai Strait area as it links to crossing options C,D or E.

### **National Grid's response**

8.28.5 National Grid welcomes supporting and opposing comments on the yellow route corridor and will take into account all the comments when making its decision on which route corridor to progress. As part of this process National Grid will consider whether the removal of the existing 132 kV overhead line would significantly mitigate the effects of a new 400 kV overhead line.

8.28.6 The four route corridors presented by National Grid can all link to any of the five Menai Strait crossing options presented.

## **8.29 Alternative route corridor**

### **Summary of responses**

8.29.1 One respondent suggested an alternative route corridor option that follows the existing 132 kV line from Wylfa to the former Anglesey Aluminium works and then parallels the A55 across the centre of the island.

### **National Grid's response**

8.29.2 The corridor suggested is similar to the yellow corridor presented at Stage One Consultation, however, it would be more indirect than the yellow corridor and therefore longer. It would also need to pass through the Anglesey Area of Outstanding Natural Beauty to reach the former Anglesey Aluminium works on Holy Island. Whilst a connection to this site might achieve some secondary system benefits it is unlikely that these would justify the additional environmental and socio-economic effects and cost that would result.

### **8.30 Environmental impacts**

8.30.1 The topics identified under this sub-theme include:

- Landscape and views
- Biodiversity
- Designated sites

### ***Landscape and views***

#### **Summary of responses**

8.30.2 Respondents suggested that the yellow route corridor would have an adverse effect on the landscape of the local area. It was stated that as it follows the A55, the visual sensitivity of the area of the route running alongside the road is higher than 'low' as assigned by National Grid, due to the views of Snowdonia for road users.

8.30.3 As part of this, respondents also expressed opposition to the yellow route corridor due to the potential 'sky-lining' of an overhead line and the cumulative visual impact with the existing 132 kV overhead line. Respondents were also concerned about the impact the yellow route corridor would have on the views to and from the Anglesey Area of Outstanding Natural Beauty, Anglesey Coastal Path and the National Cycle Network.

### **National Grid's response**

8.30.4 For further information on National Grid's response to the ***Landscape and Views*** sub-theme please see section 7.8.

8.30.5 The specific sites identified in relation to the yellow route corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T). Consideration will also be given to the sensitivity of views from the A55.

### ***Biodiversity***

#### **Summary of responses**

8.30.6 Respondents expressed concern that the yellow route corridor would have a negative effect on wildlife. Specifically respondents requested that the route corridor should pass north of Malltraeth SSSI in order to reduce the impact on migrating birds.

### **National Grid's response**

8.30.7 For National Grid's response to the ***Biodiversity*** sub-theme please see section 7.8.

8.30.8 The specific sites identified in relation to the yellow corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## ***Designated sites***

### **Summary of responses**

8.30.9 In general terms, many respondents opposed the yellow route corridor due to the area having a number of sensitive and/or designated sites, some respondents supported the corridor as it contains the least number of sensitive areas. Areas of particular concern included:

- RSPB Reserve
- Cefni Marshes

### **National Grid's response**

8.30.10 For National Grid's response to the ***Designated sites*** sub-theme please see section 7.8.

8.30.11 The specific sites identified in relation to the yellow corridor will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **8.31 Socio-economic impacts**

8.31.1 The topics which are identified under this sub-theme include:

- Impacts on businesses

### ***Impacts on businesses***

#### **Summary of responses**

8.31.2 A number of respondents expressed opposition to the yellow route corridor due to the perceived impact it would have on local businesses in the area.

#### **National Grid's response**

8.31.3 For National Grid's response to the ***Impacts on businesses*** sub-theme please see section 7.9.

## **8.32 Health, safety and security**

8.32.1 The topics which are identified under this sub-theme include:

- Aviation

### **Aviation**

#### **Summary of responses**

8.32.2 Some concerns were expressed in relation to the yellow route corridor and the proximity to RAF Valley and RAF Mona bases. These concerns primarily relate to perceived restrictions on aviation activities and safety.

#### **National Grid's response**

8.32.3 For National Grid's response to the ***Aviation*** sub-theme please see section 7.10.

### 8.33 Menai Strait crossing options

8.33.1 Question 5 of the Wylfa-Pentir feedback form asked respondents: *'Of the options identified to cross the Menai Strait to Pentir, which one do you feel National Grid should take forward?'* Options A, B, C, D and E were presented. This was followed by question 6 which asked respondents to; *'Please provide your reasons for this crossing option across the Menai Strait to Pentir.'*

8.33.2 The following themes emerged from the comments received from the Wylfa-Pentir feedback form regarding the Menai Strait crossing options.

- Crossing option
- Need case
- Subsea connection
- Undergrounding
- Alternative crossing options
- National Grid's cost assessment
- Environmental impacts
- Socio-economic impacts
- Health, safety and security
- Engineering/Design and construction
- Consultation

8.33.3 National Grid has considered respondents comments and responded to them below.

### 8.34 Crossing options

#### Summary of responses

8.34.1 Generally, respondents expressed opposition to all of National Grid's identified crossing options. Specific opposition was based on the effect a new overhead line across the Menai Strait would have on the views of the Menai Strait and the surrounding landscape.

#### National Grid's response

8.34.2 National Grid welcomes supporting and opposing comments for its crossing options. National Grid is taking into account all comments when making its decision on how to cross the Menai Strait.

8.34.3 National Grid recognises the concentration of sensitive and important sites and features on either side of the Menai Strait. These have already served to define the identified crossing options for an overhead line at Menai and National Grid is undertaking further detailed work to assess the potential effects an overhead line might have on these features. This further work will also assess the full range of alternative technologies that might be used to cross the Strait (including the installation of underground cables in trenches, buried ducts or tunnels).

National Grid will publish its findings on this work as part of the next stage of public consultation, if its preliminary preferred option is taken forward. Further technical, environmental, socio-economic and ecological assessments will be required to identify alternative crossing techniques before an informed decision can be made.

### 8.35 Need Case

#### Summary of responses

In general terms, respondents questioned the need for the connection.

#### National Grid's response

8.35.1 For National Grid's response to the **Need Case** theme please see section 7.7.

## **8.36 Subsea connection**

### **Summary of responses**

8.36.1 Generally respondents expressed support for a subsea connection which would negate the need for a new Menai Strait crossing option. Many respondents expressed support for a new subsea route from Wylfa to Liverpool, Deeside, or Pembroke. Whilst respondents acknowledged the additional cost of a subsea connection there was a general feeling that in the long-term this would be a worthwhile investment.

### **National Grid's response**

8.36.2 For National Grid's response to the **Subsea** theme please see section 7.4.

## **8.37 Undergrounding**

### **Summary of responses**

8.37.1 Respondents expressed a preference for undergrounding at the Menai Strait and believed the additional cost would be worth the investment from National Grid.

8.37.2 As part of this, one respondent referred to the underground cables from Dinorwig power station to Pentir and requested the same treatment from National Grid for the North Wales Connection Project.

### **National Grid's response**

8.37.3 National Grid fully recognises the sensitivities of the Anglesey Area of Outstanding Natural Beauty and how highly views along the Menai Strait are regarded both locally and more widely.

8.37.4 National Grid is considering very carefully the possible case for using underground cables or other technical solutions and will be looking closely at all the feedback it has received.

8.37.5 For further information on National Grid's approach to undergrounding please see National Grid's response in section 7.3.

## **8.38 Alternative crossing options**

### **Summary of responses**

8.38.1 Generally, respondents provided a number of alternative options for National Grid to consider in relation to how it could cross the Menai Strait.

8.38.2 One respondent suggested an alternative route which would negate the need for an additional Menai Strait crossing. The alternative route would see an overhead line from Wylfa to Caergeiliog or to the RAF Valley, then subsea to Bryncir.

8.38.3 The shell pipeline from Amlwch to Stanlow was referenced as an alternative option for National Grid to consider.

8.38.4 One respondent questioned why the route couldn't be run from the Vaynol estate to Pentir. One respondent pointed to a specific point on the shoreline near Llanedwen Church which was felt would be more suitable for the start of a subsea route.

8.38.5 One respondent felt that the route should follow the purple route corridor and continue directly to Merseyside. Additionally, one respondent suggested the use of the old railway line from Amlwch to Gaerwen for underground cables as used between Dinorwig and Brynrefail.

8.38.6 Finally, the potential for a new bridge to carry the new crossing was referenced by a number of respondents.

## National Grid's response

- 8.38.7 The *Wylfa-Pentir Initial Route Corridor Report* (available for download from the project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) outlines the process undertaken to identify the overhead line crossing options National Grid consulted on.
- 8.38.8 These alternative crossing options are considered as mitigation for the preliminary preferred option and as such will be included in National Grid's ongoing assessments. As an initial view on those raised, please see responses below of each in turn.
- 8.38.9 Whichever combination of route corridor and crossing option is considered, the length of an onshore route from Wylfa to Pentir would be approximately 40 – 50 km. Referring to the respondent's Wylfa-Caergiliog/Valley-Bryncir option, the underground cable element alone would be of a similar length, before considering the associated section of overhead between Wylfa and Caergiliog/Valley, the transition compounds and a significant increase in the size of any new substation required in the Bryncir area. Therefore, even if this length of cable were considered to be appropriate following more detailed appraisal (which National Grid does not expect), it is probable that a fully cabled option direct between Wylfa and Pentir would be preferred to the option proposed by the respondent. However if later studies determine that a very large proportion of any onshore route would need to be undergrounded National Grid will consider alternative routes such as that proposed as part of a back-check and review process.
- 8.38.10 With regard to the shell pipeline from Amlwch to Stanlow, National Grid is aware of this pipeline and did consider this as an option. Placing the cables inside a pipe gives rise to a number of technical issues including, among other things, installation and jointing difficulties, access for repairs following faults and poor heat dissipation.
- 8.38.11 National Grid's study area included the whole of the Isle of Anglesey and the Gwynedd coastline along the Menai Strait and continuing inland towards Pentir substation. This study area was defined in order to maximise the potential for finding a suitable route corridor. Identified locations such as the shoreline near Llanedwen Church will be included in further assessments as required.
- 8.38.12 One respondent suggested adopting the purple corridor and continuing the route to Merseyside. Whilst this would avoid the need to undertake works on the existing network between Pentir and Trawsfynydd (including at West Gwynedd and Glaslyn), National Grid considers that the additional costs and very significant environmental and socio-economic effects that would arise would make such a connection indefensible, such that consent would be refused unless this further network capacity were required. This conclusion aligns with National Grid's stated objective of maximising the use of its existing assets and routes before considering the development of new routes.
- 8.38.13 The railway between Amlwch to Gaerwen falls within the orange corridor. The need for, and nature of mitigation measures in this corridor will be considered as the project moves forward. Should underground cables be considered appropriate for all or part of this corridor then possible routes, including the disused railway, would be considered as necessary.
- 8.38.14 National Grid is aware that the Welsh Government has previously consulted upon a range of options for increasing traffic capacity between Anglesey and the mainland. One of these options was a new bridge adjacent to the existing Britannia Bridge. However this proposal does not appear in any Welsh Government investment plan and is not currently being pursued. As such it is not possible to consider the placing cables of on a new road bridge as a credible option at this time. National Grid will however keep this under review as the project progresses and will continue to consult with the Welsh Government on proposed infrastructure in the area to ensure we take account of the most up to date information in our proposals.
- 8.38.15 In reviewing the full range of alternative methods for crossing Menai Strait, it may be necessary to revise the crossing options (as presented for an overhead line crossing) to reflect the different effects and technical issues associated with alternatives such as buried cables. Similarly, careful consideration will be given to identify optimum start and end points and the length of any alternative crossing of the Strait when comparing this with overhead alternatives.

### **8.39 National Grid's costs assessment**

8.39.1 The topics which are identified under this sub-theme include:

- Lifetime costs

#### ***Lifetime costs***

##### **Summary of responses**

8.39.2 A number of respondents recognised that the costs of the connection will be 'long term'. As such, it is therefore important that the 'lifetime costs' of any connection should be an important consideration when National Grid decides a technology and connection preference.

##### **National Grid's response**

8.39.3 For National Grid's response to the ***Lifetime costs*** sub-theme please see section 7.6.

### **8.40 Environmental impacts**

8.40.1 The topics identified under this sub-theme include:

- Landscape and views
- Cultural heritage and historic sites
- Biodiversity
- Designated sites

#### ***Landscape and views***

##### **Summary of responses**

8.40.2 Respondents expressed concern regarding the visual effect associated with an overhead transmission line. The majority of respondents felt that any of the crossing options identified by National Grid would have an adverse effect on visual amenity of the Menai Strait and the surrounding areas. Conversely, one respondent felt the Britannia Bridge would be able to provide sufficient screening for a new overhead line.

8.40.3 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include: designated areas (including designated cultural heritage sites, Special Area of Conservation, designated wildlife sites and listed buildings and structures). Specific locations referenced included:

- Anglesey Area of Outstanding Natural Beauty
- Menai Bridge
- Britannia Bridge

##### **National Grid's response**

8.40.4 For National Grid's response to the ***Landscape and views*** sub-theme please see section 7.8.

#### ***Cultural heritage and historic sites***

##### **Summary of responses**

8.40.5 In general terms, many respondents felt the Project area is a place of rich cultural heritage and any overhead transmission line would have a detrimental effect on this. Specific reference was made to the Menai and Britannia Bridges which many respondents felt are the '*gateway to the island*'.



### **National Grid's response**

- 8.40.6 The historical importance of the two bridges is recognised by National Grid and in particular the value placed on the iconic views of Telford's Menai Suspension Bridge. This will be considered as part of the final crossing option assessment.
- 8.40.7 For further information on National Grid's response to the **Cultural heritage and historic sites** sub-theme please see section 7.8.

### **Biodiversity**

#### **Summary of responses**

- 8.40.8 In general terms, many respondents felt the Menai Strait is rich in ecological and biodiversity resources and any new infrastructure in this area would greatly affect this. Respondents expressed concern that overhead lines would have a negative effect on natural shellfish sites, the Brynsiencyn oyster lays and mussel cultivation plots.

### **National Grid's response**

- 8.40.9 National Grid recognises that those sections of the Menai Strait within the identified crossing options form an important part of the wider Menai Strait and Conwy Bay SAC. The type of species and habitats present within the SAC differ along the Strait. National Grid will consider these issues when carrying out a more detailed appraisal of possible crossing options, recognising that important ecological features are more likely to be adversely affected by seabed trenching burial of cables rather than an overhead line, which could span the full width of the Menai Strait.
- 8.40.10 Possible impacts to commercial shell fisheries will also be considered.
- 8.40.11 For further information on National Grid's response to the **Biodiversity** sub-theme please see section 7.8.
- 8.40.12 The specific sites identified in relation to the Menai Strait crossing options will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

### **Designated sites**

#### **Summary of responses**

- 8.40.13 In general terms, many respondents expressed concern over the perceived potential for effect on designated sites and areas that an overhead transmission across the Menai Strait line would have.

### **National Grid's response**

- 8.40.14 For National Grid's response to the **Designated sites** sub-theme please see section 7.8.
- 8.40.15 The specific sites identified in relation to the Menai crossing options will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **8.41 Socio-economic impacts**

8.41.1 The topics which are identified under this sub-theme include:

- Impacts on tourism/economy

### ***Impacts on tourism/economy***

#### **Summary of responses**

8.41.2 Respondents stated their belief that all of the Menai Strait crossing options would have a detrimental effect on tourism, which was cited as one of the main sources of income in the Project area. Tourism was cited as a vital contributor to the local economy.

#### **National Grid's response**

8.41.3 For National Grid's response to the ***Impacts on tourism/economy*** sub-theme please see section 7.9.

## **8.42 Health, safety and security**

8.42.1 The topics which are identified under this sub-theme include:

- Health & Electric and Magnetic Fields (EMFs)

### ***Health and EMFs***

#### **Summary of responses**

8.42.2 In general terms, respondents expressed concern over the health impacts associated with living in close proximity to an overhead transmission line.

#### **National Grid's response**

8.42.3 For National Grid's response to the Health & EMFs sub-theme please see sections 7.10.

## **8.43 Engineering/Design and construction**

8.43.1 The topics which are identified under this sub-theme include:

- Transmission design
- Alternative technology

### ***Transmission design***

#### **Summary of responses**

8.43.2 Respondents requested further information on the size of pylons and why National Grid would consider the use of taller pylons for some of the options it has identified.

8.43.3 As part of this, one respondent questioned how the overhead line would connect to the substation at Pentir.

### **National Grid's response**

- 8.43.4 The size of pylons would be specific to each of the crossing points to ensure that adequate clearance is given between the lowest point of the conductor sag and the ground or water level. Figure B-1 of the *Wylfa-Pentir Initial Route Corridor Report* provided an overview of the relationship of pylon height and span length for the types of clearances to the sea surface that would be required at Menai.
- 8.43.5 The route back to Pentir would be dependent on which crossing point is taken forward and the technology used for the crossing. Further work is required in this area to identify specific routes.
- 8.43.6 For further information please see National Grid's response to the **Transmission design** sub-theme please see section 7.11.

## **8.44 Alternative technology**

### **Summary of responses**

- 8.44.1 One respondent asked if National Grid had given consideration to the submerged tube of construction, with pre-cast sections being floated out and lowered onto the bed or into a shallow trench. They explained that concrete mattresses could be laid over the sections giving it a profile to tidal currents, scour and bedload transport or sediment.

### **National Grid's response**

- 8.44.2 As part of the options appraisal process, National Grid will consider the full range of technically credible solutions for crossing Menai Strait. Physical protection of any connection, especially if installed in or on the seabed across the Strait, would be an important factor when appraising the relative merits of each.

## **8.45 Consultation**

- 8.45.1 A number of respondents expressed concern that National Grid's consultation process has led to public opposition of its proposals.

### **National Grid's response**

- 8.45.2 For National Grid's response to the **Consultation** sub-theme please see Chapter 11.

## **8.46 Crossing option A**

- 8.46.1 The following themes emerged from comments relating to crossing option A:

- Crossing option
- Environmental impacts
- Socio-economic impacts

## **8.47 Crossing option**

### **Summary of responses**

- 8.47.1 Generally, those respondents that supported crossing option A did so as it was felt it would provide the least pressure on communities near the existing line such as Llanfairpwllgwyngyll. Support was also based on it not running too close to the existing 400 kV overhead line which would negate the '*potential congestion*'. Conversely, one respondent felt that there was not enough room for the crossing option to run alongside the existing overhead line due to the planning application for a new housing development at Fford Cynan/Fford Crwys.
- 8.47.2 A number of respondents selected crossing option A as it links to their preferred route corridor of either orange or blue.

### **National Grid's response**

- 8.47.3 National Grid welcomes supporting and opposing comments for crossing option A. National Grid will take into account all comments when making its decision on which crossing option to progress.
- 8.47.4 All of the crossing options brought forward by National Grid took into consideration existing and planned infrastructure in the area including any new housing developments. National Grid is aware of Redrow Home's Goetre Uchaf development in Bangor and has avoided this with the crossing option corridors identified.
- 8.47.5 As its proposals progress, National Grid will continue to consult with the relevant local authority to ensure that emerging development proposals are identified and that the final connection design avoids conflicting with these wherever possible.

### **8.48 Environmental impacts**

The topics identified under this sub-theme include:

- Landscape and views

#### ***Landscape and views***

##### **Summary of responses**

- 8.48.1 Respondents expressed concern regarding the visual effect associated with an overhead transmission line. The majority of respondents felt that crossing option A would have an adverse effect on visual amenity of the Menai Strait and the surrounding areas.
- 8.48.2 One respondent expressed the hope that the crossing option could pass through Nant Y Garth which would minimise the impact on the landscape in the Arfon area.
- 8.48.3 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include:
- Menai Suspension Bridge

### **National Grid's response**

- 8.48.4 One respondent suggested routing the connection through Nant y Garth. This river valley lies between crossing options C and D, but outside the crossing areas identified for a possible overhead line crossing of the Strait. Whilst National Grid is considering the full range of technology options for crossing the Strait, some of which might be more appropriately routed through areas other than the currently identified crossing options, the narrowness of Nant y Garth at Port Dinorwic, together with its cultural and economic importance, limits development opportunities in this area. Further inland the wooded nature of the steep valley sides would also represent technical and environmental constraints.
- 8.48.5 For National Grid's response to the ***Landscape and views*** sub-theme please see section 7.8.
- 8.48.6 The specific sites identified in relation to crossing option A will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

### **8.49 Socio-economic impacts**

- 8.49.1 The topics which are identified under this sub-theme include:
- Impacts on tourism/economy

## ***Impacts on tourism/economy***

### **Summary of responses**

8.49.2 Respondents stated their belief that crossing option A would have a detrimental effect on tourism. Respondents cited important tourist viewing points which would be affected including; Ynys Gored Goch and view points on the A5 road. As part of this, respondents also raised concern regarding the impact it would have on tourism with regards to views of the Menai Suspension Bridge.

### **National Grid's response**

8.49.3 National Grid recognises the importance of viewpoints along the Menai Strait and particularly the iconic views of Menai Suspension Bridge and Ynys Gored Goch. This is an important socio-economic and cultural heritage consideration when appraising the crossing options.

8.49.4 For further information on National Grid's response to the ***Impacts on tourism/economy*** sub-theme please see section 7.9.

## **8.50 Crossing option B**

8.50.1 The following themes emerged from comments relating to crossing option B:

- Crossing option
- Alternative crossing option
- Environmental impact
- Socio-economic impact
- Engineering/Design and construction

## **8.51 Crossing option**

### **Summary of responses**

8.51.1 Crossing option B received the most support from respondents. Support was based on the crossing option following the existing 400 kV overhead line which was felt would have the least visual impact on the landscape as it would avoid putting an overhead line in a completely new area. As part of this, one respondent felt that as this option follows the existing overhead line it would be the cheapest.

8.51.2 Those respondents that supported crossing option B stated their preference due to the route being the shortest. As a result, respondents felt this crossing option would be the cheapest and easiest to construct and provide the best scope for undergrounding.

8.51.3 A number of respondents selected crossing option B as it links to their preferred route corridor - orange.

### **National Grid's response**

8.51.4 National Grid welcomes supporting and opposing comments for crossing option B. National Grid is taking into account all comments when making its decision on which crossing option to progress and the need for mitigation measures, including the possible local use of alternative technologies.

## **8.52 Alternative crossing option**

### **Summary of responses**

8.52.1 One respondent suggested National Grid should look at putting the cables either above, or below, or within the structure of the Britannia Bridge. The fitting of the cables on outriggers from the bridge so that maintenance would be easier was also suggested, which it was thought would cost less and avoid any impact on train or bridge maintenance.

### **National Grid's response**

8.52.2 National Grid is giving careful consideration to the full range of options available to cross Menai Strait. As part of this process the technical challenges associated with installing the twelve cables that would be required on Britannia Bridge will be investigated.

### **8.53 Environmental impacts**

8.53.1 The topics identified under this sub-theme include:

- Landscape and views

#### ***Landscape and views***

##### **Summary of responses**

8.53.2 Respondents expressed concern regarding the visual effect associated with an overhead transmission line. The majority of respondents felt that crossing option B would have an adverse effect on visual amenity of the Menai Strait and the surrounding areas. Specific concern was raised of the views of the Menai Suspension Bridge from the Britannia Bridge, as well as views towards Snowdonia and southwest towards Plas Newydd.

8.53.3 A number of respondents felt the Britannia Bridge could play a role in reducing the visual impact of a new overhead line. Respondents felt that the bridge, which is higher than the cables at crossing point B, could partly screen the new overhead line.

8.53.4 One respondent expressed the hope that the crossing option could pass through Nant Y Garth which would minimise the impact on the landscape in the Arfon area.

8.53.5 One respondent felt that the difference in span and height of the existing 400 kV overhead line and a new overhead line would create a 'confusing appearance', which they felt would be in conflict with National Grid's Holford 'Rules' (Appendix R).

8.53.6 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include:

- Menai Suspension Bridge
- Britannia Bridge
- Nelson's monument
- St Mary's Church
- Marquis of Anglesey's column

### **National Grid's response**

8.53.7 National Grid's response concerning Nant y Garth can be found at section 8.49.4 above.

8.53.8 Regarding the potential for differences in the height and span of new and existing pylons in this crossing option, the scale and significance of any differences will be considered as part of the options appraisal and selection. Whilst a similar span length might be achievable, this would affect designated sites either side of the Strait and any such effects would need to be carefully considered.

8.53.9 As described in section 7.12 the Holford 'Rules' (Appendix R) are broad principles for overhead transmission line routeing and details how these, along with public consultation, are used to seek to avoid residential areas, schools and settlements as far as possible on grounds of general amenity.

8.53.10 For further information on National Grid's general response to the ***Landscape and views*** sub-theme please see sections 7.8.

8.53.11 The specific sites identified in relation to crossing option B will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **8.54 Socio-economic impacts**

8.54.1 The topics which are identified under this sub-theme include:

- Impacts on businesses/economy

### ***Impacts on businesses/economy***

#### **Summary of responses**

8.54.2 A concern raised by respondents in relation to crossing option B was the impact it would have on local businesses and in turn the local economy.

#### **National Grid's response**

8.54.3 National Grid acknowledges that this crossing option would impact important views and any line in this crossing would pass close to existing tourism businesses. This will be considered as part of the options selection process.

8.54.4 For further information on National Grid's response to the ***Business/economy*** sub-theme please see sections 7.8.

## **8.55 Engineering/Design and construction**

8.55.1 The topics which are identified under this sub-theme include:

- Transmission design

### ***Transmission design***

#### **Summary of responses**

8.55.2 One respondent cited a preference for crossing option B as it is the shortest and therefore believed National Grid would be able to use the lower-profile pylons for this crossing option.

#### **National Grid's response**

8.55.3 For National Grid's response to the ***Transmission design*** sub-theme please see section 7.11.

## **8.56 Crossing option C**

8.56.1 The following themes emerged from comments relating to crossing option C:

- Crossing option
- Environmental impacts
- Socio-economic impacts

## **8.57 Crossing option**

#### **Summary of responses**

8.57.1 Respondents expressing support for crossing option C did so due to it being one of the shortest crossing options. Support was also expressed as it crosses the Menai Strait at one of the narrowest points which was felt would make undergrounding easier. Conversely, one respondent opposed crossing option c due to its narrowness which it felt would limit National Grid's routing options.

8.57.2 Respondents supported crossing option C as it avoids the most populated areas, ancient woodland and listed buildings.

- 8.57.3 A number of respondents selected crossing option C as it links to their preferred route corridors of orange and blue.
- 8.57.4 A number of respondents opposed crossing option C as it was felt to be the least direct crossing option.

### **National Grid's response**

- 8.57.5 National Grid welcomes supporting and opposing comments for crossing option B. National Grid is taking into account all comments when making its decision on which crossing option to progress.
- 8.57.6 The five crossing options presented by National Grid can all link to any of the four route corridors presented.

## **8.58 Environmental impacts**

- 8.58.1 The topics identified under this sub-theme include:
- Landscape and views
  - Cultural heritage and historic sites
  - Biodiversity

### ***Landscape and views***

#### **Summary of responses**

- 8.58.2 Respondents expressed concern regarding the visual effect associated with an overhead transmission line. The majority of respondents felt that crossing option C would have an adverse effect on the visual amenity of the Menai Strait and the surrounding areas. Respondents expressed concern that an overhead line in this area would be highly visible on the sky-line.
- 8.58.3 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include:
- Anglesey Area of Outstanding Natural Beauty
  - Llanedwen
  - Y Felinheli
  - National Trust land in the area
  - Llanedwen Church
  - Llandaniel Fab
  - Plas Newydd

### **National Grid's response**

- 8.58.4 For National Grid's response to the ***Landscape and views*** sub-theme please see section 7.8.
- 8.58.5 The specific sites identified in relation to crossing option C will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

### ***Cultural heritage and historic sites***

#### **Summary of responses**

- 8.58.6 In general terms, many respondents felt the area in and around crossing option C is rich in cultural heritage and any new overhead line would have a detrimental effect on this. Respondents raised particular concern regarding the impact on the Registered Parks and Gardens of Plas Newydd and Vaynol and Dinorwig Registered Historic Landscape.



### **National Grid's response**

- 8.58.7 For National Grid's response to the **Cultural heritage and historic sites** sub-theme please see section 7.8.
- 8.58.8 The specific sites identified in relation to crossing option C will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **Biodiversity**

### **Summary of responses**

- 8.58.9 In general terms, many respondents felt crossing option C is rich in ecological and biodiversity resources and any new infrastructure in this area would greatly affect this. Respondents cited migrating bird populations as being a particular concern.
- 8.58.10 Conversely, one respondent supported crossing option C as it avoids sensitive areas such as the Brynsiencyn oyster lays and mussel cultivation plots.

### **National Grid's response**

- 8.58.11 For National Grid's response to the **Biodiversity** sub-theme please see section 7.8.
- 8.58.12 The specific sites identified in relation to the Menai crossing options will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **8.59 Socio-economic impacts**

- 8.59.1 The topics which are identified under this sub-theme include:
- Impacts on tourism/economy

### **Impacts on tourism/economy**

#### **Summary of responses**

- 8.59.2 A number of respondents believed crossing option C would have a detrimental effect on tourism in the area. Specific 'tourist hotspots' were mentioned including; the church at Llanedwen and Plas Newydd.

### **National Grid's response**

- 8.59.3 For National Grid's response to the **Impacts on tourism/economy** sub-theme please see section 7.9.

## **8.60 Crossing option D**

- 8.60.1 The following themes emerged from comments relating to crossing option D:
- Crossing option
  - Environmental impact
  - Socio-Economic impact

## ***Crossing option***

### **Summary of responses**

- 8.60.2 Generally, respondents opposed crossing option D as it is one of the longest crossing options and would therefore require taller pylons and cost more. Conversely, one respondent selected crossing option as their preferred option as it was the shortest.
- 8.60.3 Several respondents raised concerns regarding the cumulative impact of the new route combined with a proposed major road development near Bethel and Seion.

### **National Grid's response**

- 8.60.4 National Grid welcomes supporting and opposing comments for crossing option D. National Grid is taking into account all comments when making its decision on which crossing option to progress.
- 8.60.5 As its proposals progress, National Grid will continue to consult with the Welsh Government and local authorities on any proposed infrastructure in the area, such as new road schemes like the Caernarfon By-Pass, on its proposals to understand the affect these could have on the appraisal and selection of route corridor and crossing options.

## **8.61 Environmental impacts**

- 8.61.1 The topics identified under this sub-theme include:
- Landscape and views
  - Cultural heritage and historic sites

### ***Landscape and views***

#### **Summary of responses**

- 8.61.2 Respondents expressed concern regarding the visual effect associated with an overhead transmission line. The majority of respondents felt that crossing option D would have an adverse effect on the visual amenity of the Menai Strait and the surrounding areas due to the open landscape of the area. Respondents also expressed concern that an overhead line in this area would be highly visible in the sky-line.
- 8.61.3 Respondents also opposed crossing option D as an overhead line in this area would be visible along the ridgeline to the north of Bethel.
- 8.61.4 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include:
- Anglesey Area of Outstanding Natural Beauty
  - Brynsiencyn
  - Llanedwen
  - Y Felinheli
  - Llanddaniel Fab

### **National Grid's response**

- 8.61.5 For National Grid's response to the ***Landscape and views*** sub-theme please see section 7.8.
- 8.61.6 The specific sites identified in relation to crossing option D will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## ***Cultural heritage and historic sites***

### **Summary of responses**

8.61.7 One respondent opposed crossing option D due to an overhead line in this area being visible from Caernarfon Castle, part of a UNESCO World Heritage site.

### **National Grid's response**

8.61.8 For National Grid's response to the ***Cultural heritage and historic sites*** sub-theme please see section 7.8.

8.61.9 The specific sites identified in relation to crossing option D will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **8.62 Socio-economic impacts**

8.62.1 The topics which are identified under this sub-theme include:

- Impact of proposals on property values
- Impacts on tourism/economy

### ***Impact of proposals on property values***

#### **Summary of responses**

8.62.2 Respondents expressed concern about the effect an overhead line – specifically the use of taller pylons – would have in the area on property values, due to the perceived visual impact. One respondent expressed the opinion that this would lead to a loss of quality of life for homeowners in the region.

#### **National Grid's response**

8.62.3 For National Grid's response to the ***Impact of proposals on property values*** sub-theme please see section 7.9.

### ***Impacts on tourism/economy***

#### **Summary of responses**

8.62.4 Many respondents stated their belief that an overhead connection would have a detrimental effect on tourism, which was cited as one of the main sources of income in the Project area. Tourism was cited as a vital contributor to the local economy, providing the main source of income for a large number of people.

8.62.5 As part of the effect on tourism, respondents cited a variety of landmarks and landscapes that should be avoided, including the Menai Strait and the Anglesey Area of Outstanding Natural Beauty. Respondents also expressed concern about the effect an overhead line would have on public rights of way.

#### **National Grid's response**

8.62.6 For National Grid's response to the ***Impact on tourism/economy*** sub-theme please see section 7.9.

## **8.63 Crossing option E**

8.63.1 The following themes emerged from comments relating to crossing option E:

- Crossing option
- Environmental impact
- Socio-Economic impact

## **8.64 Crossing option**

### **Summary of responses**

- 8.64.1 Those respondents selecting crossing option E stated that their preference was conditional upon the route being placed underground. Respondents supporting this crossing option believed it would have the least impact on views from Britannia Bridge and the least general impact on the mainland side of the Menai Strait.
- 8.64.2 Conversely, those respondents opposing crossing option E stated it would have a detrimental impact on the views of the Menai Strait.
- 8.64.3 One respondent expressed concern that crossing option E would separate Brynsiencyn Church from the rest of the village.
- 8.64.4 As per crossing option D, several respondents raised concerns regarding the cumulative impact of the new route combined with a major road development near Bethel and Seion.

### **National Grid's response**

- 8.64.5 National Grid welcomes supporting and opposing comments for crossing option E. National Grid is taking into account all comments when making its decision on which crossing option to progress.
- 8.64.6 As its proposals progress, National Grid will continue to consult with the Welsh Government and local authorities on any proposed infrastructure in the area, such as new road schemes like the Caernarfon By-Pass, on its proposals to understand the affect these could have on the appraisal and selection of route corridor and crossing options
- 8.64.7 The specific sites identified in relation to crossing option E will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **8.65 Environmental impacts**

8.65.1 The topics identified under this sub-theme include:

- Landscape and views
- Cultural heritage and historic sites

### ***Landscape and views***

#### **Summary of responses**

- 8.65.2 Respondents expressed concern regarding the visual effect associated with an overhead transmission line. The majority of respondents felt that crossing option E would have an adverse effect on the visual amenity of the Menai Strait. As per responses to crossing option D, respondents expressed concern that an overhead line in this area would be highly visible on the sky-line.
- 8.65.3 Specific locations to avoid on visual/landscape grounds were suggested by respondents to include:
- Anglesey Area of Outstanding Natural Beauty
  - Brynsiencyn
  - Llanedwen

- Caernarfon
- Y Felinheli
- Llanddaniel Fab

### **National Grid's response**

8.65.4 For National Grid's response to the **Landscape and views** sub-theme please see section 7.8.

8.65.5 The specific sites identified in relation to crossing option E will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

### **Cultural heritage and historic sites**

#### **Summary of responses**

8.65.6 As per crossing option D, one respondent opposed crossing option E due to an overhead line in this area being visible from Caernarfon Castle, part of a UNESCO World Heritage site.

### **National Grid's response**

8.65.7 For National Grid's response to the **Cultural heritage and historic sites** sub-theme please see section 7.8.

8.65.8 The specific sites identified in relation to crossing option E will be assessed alongside all sensitive locations identified during Stage One Consultation (please see *Sensitive locations map* and *Sensitive locations postcode response map* in Appendix T).

## **8.66 Socio-economic impacts**

8.66.1 The topics which are identified under this sub-theme include:

- Impact of proposals on property values
- Impacts on tourism/economy

### ***Impact of proposals on property values***

#### **Summary of responses**

8.66.2 Respondents expressed concern about the effect an overhead line – specifically the use of taller pylons – would have in the area on property values, due to the perceived visual impact. One respondent expressed the opinion that this would lead to a loss of quality of life for homeowners in the region.

### **National Grid's response**

8.66.3 For National Grid's response to the **Impact of proposals on property values** sub-theme please see section 7.9.

### ***Impacts on tourism/economy***

#### **Summary of responses**

8.66.4 Many respondents stated their belief that an overhead connection would have a detrimental effect on tourism, which was cited as one of the main sources of income in the Project area. Tourism was cited as a vital contributor to the local economy, providing the main source of income for a large number of people.

8.66.5 As part of the effect on tourism, respondents cited a variety of landmarks and landscapes that should be avoided, including the Menai Strait and the Anglesey Area of Outstanding Natural Beauty. Respondents also expressed concern the effect an overhead line would have on public rights of way.

#### **National Grid's response**

8.66.6 For National Grid's response to the *Impact on tourism/economy* sub-theme please see section 7.9.

#### **8.67 Sensitive locations**

8.67.1 Question 7 of the Wylfa-Pentir feedback form asked respondents; '*To help us reduce the effects, we would value your opinion in identifying locations that you feel are most sensitive within any of our preferred route corridors and crossing points.*'

8.67.2 Several respondents felt that this question was not applicable given their rejection of National Grid's SOR whilst a number of other respondents felt the whole of Anglesey is a sensitive location.

8.67.3 National Grid is reviewing and will have regard to all of the sensitive locations identified by respondents during Stage One Consultation in its decision making process. National Grid will also undertake additional assessments on the sensitive locations identified and any other areas identified as being sensitive that are highlighted through the Project's development where the evolving design continues to potentially affect these locations.

8.67.4 All of the sensitive locations identified by respondents have been collated and identified on National Grid's *Sensitive locations map* (Appendix T).

## **9.0 A NEW SUBSTATION IN WEST GWYNEDD**

### **9.1 Overview**

9.1.1 During Stage One Consultation respondents were asked to comment on the siting of a proposed substation in West Gwynedd. The following themes emerged from the comments received from the West Gwynedd Feedback form and the independent responses:

- Proposed substation sites
- Substation siting area
- Northern substation site
- Central substation site
- Southern substation site

9.1.2 National Grid has considered the comments and responded to them below.

### **9.2 Proposed substation sites**

9.2.1 The topics under this sub-theme include:

- Planning requirements
- Biodiversity

#### ***Planning requirements***

##### **Summary of responses**

9.2.2 Respondents requested further information on the planning process for the proposed new substation and associated works in West Gwynedd.

##### **National Grid's response**

9.2.3 The proposed new substation and other associated works in West Gwynedd would require planning permission in accordance with the Town and Country Planning Act 1990. Planning applications would be submitted to, and determined by, Gwynedd Council.

9.2.4 National Grid intends presenting a final design proposal to local landowners, communities and stakeholder organisations for comment prior to the submission of a planning application.

#### ***Biodiversity***

##### **Summary of responses**

9.2.5 Some respondents expressed concern that the 132 kV connection to each identified substation site by National Grid would need to cross the river Afon Dwyfach. Respondents felt that utilising wooden poles for the 132 kV connection across the river before the connection is undergrounded would have the least environmental impact.

##### **National Grid's response**

9.2.6 More detailed design work will be progressed in partnership with SP Manweb to identify the most appropriate design for the connection between the substation sites and the existing wood pole overhead line that supplied the Llŷn Peninsula. This work will take into account a range of environmental factors including the potential impact to the Afon Dwyfach.

### 9.3 Substation siting area

9.3.1 The topics under this sub-theme include:

- Subsea connection
- Designated sites
- Biodiversity
- Noise
- Mitigation measures
- Local distribution network

#### ***Subsea connection***

##### **Summary of responses**

9.3.2 Generally, respondents suggested that the substation would not be required if National Grid went ahead with a subsea connection. Conversely, some respondents suggested that a new substation near Bryncir could be utilised as an alternative to Pentir as a connection point, with a subsea connection coming onshore at a point north east of Clynog Fawr which would avoid National Grid having to build an overhead line across the Menai Strait.

##### **National Grid's response**

9.3.3 For **Strategic Option 1** (three subsea HVDC circuits between Wylfa and Deeside substations) and **Strategic Option 2** (two subsea HVDC circuits between Wylfa and Deeside and one HVDC circuit between Wylfa and Pembroke) it is true that a new substation at West Gwynedd would not be required. However, for National Grid's preliminary preferred option, a new substation would be required.

9.3.4 It would also be the case that a subsea connection could connect to Bryncir instead of Pentir but this would require construction of a far larger substation and a long length of onshore transmission connection. However, this is not National Grid's preliminary preferred option for a variety of reasons as set out in the Strategic Options Theme in section 7.2.

9.3.5 For more information on National Grid's response to the **Subsea** theme please see section 7.4.

#### ***Designated sites***

##### **Summary of responses**

9.3.6 In general terms, many respondents expressed concern over the perceived potential effect a new substation could have on designated sites and areas. Respondents suggested that between the Llŷn Area of Outstanding Natural Beauty and the Snowdonia National Park there are a number of designated sites National Grid should take into consideration including; Special Areas of Conservation (SACs), Sites of Specific Scientific Interest (SSSIs) and County Wildlife Sites (CWS).

##### **National Grid's response**

9.3.7 National Grid considered the potential effect on designated sites in its *West Gwynedd Substation Siting Study* (available for download from the project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). These include National Parks, Areas of Outstanding Natural Beauty, Special Protection Areas/Special Areas of Conservation (SPAs/SACs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), World Heritage Sites, Scheduled Monuments, Welsh Historic Landscapes, Registered Parks and Gardens.

9.3.8 The three substation site options presented would all avoid direct impacts to these designated sites.

9.3.9 The scale and significance of any indirect and/or long-distance impacts upon designated sites and other important features, such as local homes and protected species, would be documented and submitted as part of any subsequent planning application for the site.



## ***Biodiversity***

### **Summary of responses**

- 9.3.10 Respondents suggested that any new infrastructure in West Gwynedd should avoid effects on protected and sensitive areas and species.
- 9.3.11 Resident species recorded by respondents include: farmland and upland fringe birds such as yellowhammers and curlews.

### **National Grid's response**

- 9.3.12 Biodiversity interests were considered in the *West Gwynedd Substation Siting Study* (available for download from the project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)) with reference to Special Protection Areas (SPAs)/Special Areas of Conservation (SACs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), ancient woodlands and Locally Designated Sites, Local Nature Reserves, Wildlife Trust Reserves, Wildlife Trust Reserves, Biodiversity Action Plan (BAP), habitats and sensitive species. All of the identified substation site options avoid these areas.
- 9.3.13 Since consultation, National Grid has continued to undertake a number of more detailed habitat and species surveys in and around the three site options. This information will be used to help inform the selection of a preferred site. Any final planning application will be submitted with full details of predicted ecological impacts and mitigation proposals that would help to reduce these effects and provide biodiversity benefits.

## ***Noise***

### **Summary of responses**

- 9.3.14 Generally, respondents suggested that the substation would be noisy and requested information on what mitigation measures National Grid would put in place to address noise.

### **National Grid's response**

- 9.3.15 National Grid recognises that people living near its high voltage substations may have concerns about audible noise. These concerns are taken seriously and when planning new infrastructure we endeavour to mitigate or eliminate operational noise impacts on our neighbours.
- 9.3.16 Substations generally produce audible noise. The main source of noise within most substations is from transformers which produce continuous noise with an audible tone or 'hum'.
- 9.3.17 Noise produced by such plant is managed by adherence to stringent design specifications, combined with careful assessment of the impact of noise on the local environment. Appropriate mitigation (such as acoustic enclosures) is specified as part of the design process to minimise adverse impacts at nearby residential properties.

## ***Mitigation measures***

### **Summary of responses**

- 9.3.18 Respondents suggested that National Grid should look at additional habitat creation around its preferred substation site. As part of this, respondents asked for further information on the mitigation measures National Grid would look at implementing.

### **National Grid's responses**

- 9.3.19 Whilst the exact details of the substation are still to be confirmed, it is likely that it would include additional land for screen planting. This planting and any other opportunities for the creation of new wildlife habitats would be designed based on native species and taking into account the Biodiversity Action Plan for Gwynedd which sets out priority habitats and species, such as bluebells, marsh fritillary butterflies and skylark.

## ***Local distribution network***

### **Summary of responses**

9.3.20 Respondents queried how the connection from the substation to the local distribution network would be made. Whilst some respondents suggested that they could support a new substation if redundant sections of the SP Manweb overhead connection could be removed.

### **National Grid's response**

9.3.21 For all three sites, a connection from the proposed substation to the existing 132 kV local distribution network would be required. At consultation we illustrated a connection back to the existing SP Manweb network using underground cables. We are continuing discussions with SP Manweb to determine how to make this connection. This work, along with the construction of the proposed new substation would not interrupt power supplies.

## **9.4 Northern substation site**

9.4.1 The topics under this sub-theme include:

- Northern substation site
- Landscape and views

### ***Northern substation site***

#### **Summary of responses**

9.4.2 Generally, respondents felt that the Northern substation site was the least populated and would therefore have the minimum impact on local residents.

9.4.3 Respondents who supported the Northern substation site did so because it is close to the existing 400 kV line and access to the site is already in place via the A487.

#### **National Grid's responses**

9.4.4 National Grid welcomes supporting and opposing comments on the Northern substation site and will take into account all the comments when making its decision on which substation site to progress.

9.4.5 For more information on how National Grid identifies substation sites and the considerations it takes into account when making its decision please see section 7.13.

### ***Landscape and views***

#### **Summary of responses**

9.4.6 Some respondents said that the Northern substation site is located on high quality agricultural land and expressed concerns about the land being disrupted by any new development in the area.

9.4.7 Respondents felt the topography of the land would lend itself well to screening with the use of woodland and other plantations. Conversely, a number of respondents expressed concern that National Grid would not be able to screen the Northern substation site due to the open nature of the landscape and due to the fact it is overlooked by a raised road.

#### **National Grid's response**

9.4.8 With regard to comments concerning the Northern substation site being located on high quality agricultural, National Grid will seek to reach voluntary agreement with the landowners and occupiers for the purchase of the finally preferred substation site.

- 9.4.9 The study area is rural in nature with most land in agricultural use. Developing any of the three identified substation sites would involve the permanent loss of pasture or meadow land, although the overall site footprint would be relatively small for a development of this nature.
- 9.4.10 With regard to comments concerning the topography of the land at the Northern substation site, National Grid takes into account the potential landscape and visual impacts any proposal could potentially have.

## **9.5 Central substation site**

- 9.5.1 The topics under this sub-theme include:
- Central substation site
  - Alternatives

### ***Central substation site***

#### **Summary of responses**

- 9.5.2 Generally, respondents expressed opposition to the central substation site due to the site's proximity to the village of Bryncir.

#### **National Grid's response**

- 9.5.3 National Grid welcomes supporting and opposing comments on the Central substation site and will take into account all the comments when making its decision on which substation site to progress.
- 9.5.4 To identify the potential substation sites, National Grid undertook a *West Gwynedd Substation Siting Study* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)), which took account of amenity and environmental considerations, the effects on local communities and suitability for transport access. Alongside this, National Grid also took into account the following: ecology, cultural heritage, landscape, access, flooding, technical, tourism and recreation, agriculture and settlements.
- 9.5.5 Additionally, consultation with organisations with particular expertise also formed an important part of the process for identifying suitable sites. National Grid held initial discussions with representatives from local authorities, Welsh Government, Natural Resources Wales (previously the Countryside Council for Wales and the Environment Agency Wales), Snowdonia National Park, Cadw and SP Manweb to talk through the options it was considering to gather their thoughts and views.
- 9.5.6 Proximity of the areas to the existing 400 kV line along with proximity to the 132 kV line, the ease of access from the existing highway network, and the absence of environmental features that could be adversely affected by any substation development were all factored into the identification of site options.
- 9.5.7 Whilst the proximity of the Central site option to residential properties in Bryncir is acknowledged, the site's location adjacent to business premises, on the edge of a built-up area was considered to offer possible landscape advantages over the Northern and Southern site options, both of which are located in open countryside. These factors, together with consultation feedback, will all be considered when identifying the most appropriate site to take forward.

## ***Alternatives***

### **Summary of response**

9.5.8 The industrial/commercial site to the west of the A487 was suggested as an alternative site to the central substation site brought forward by National Grid as it was felt this was already an 'industrial area' and as such, it was suggested the land was of poorer quality and of little agricultural importance.

### **National Grid's response**

9.5.9 In relation to alternative substation sites, it is worth noting that the substation needs to be located where it can most effectively and efficiently link to the existing 400 kV line and the 132 kV line. The substation would require good road access as heavy equipment like power transformers would need to be installed at the site.

9.5.10 National Grid did consider a number of previously developed sites within the original, wider study area. However the site referred to is highly visible from the A487, and would require a short section of new overhead line to connect it to the existing 400 kV overhead transmission line. For these reasons the site was not short listed. Alternative sites suggested by respondents will be reviewed as part of the final site selection.

## **9.6 Southern substation site**

9.6.1 The topics under this sub-theme include:

- Southern substation site
- Health and Electric and Magnetic Fields (EMFs)
- Landscape and views
- 132 kV overhead line

### ***Southern substation site***

#### **Summary of responses**

9.6.2 Generally, respondents expressed preference for the Southern substation site as it is further away from populated areas, particularly Bryncir. Respondents felt this site would therefore have less impact on local residents than National Grid's other site options.

#### **National Grid's response**

9.6.3 National Grid welcomes supporting and opposing comments on the Southern substation site and will take into account all the comments when making its decision on which substation site to progress.

9.6.4 For more information on how National Grid identifies substation sites and the considerations it takes into account when making its decision please see section 7.13.

## ***Health and EMFs***

### **Summary of responses**

9.6.5 Respondents expressed a preference for the Southern substation site due to it being located further away from populated areas and therefore the impact of electric and magnetic fields on nearby residents would be limited.

#### **National Grid's responses**

9.6.6 For National Grid's response to health implications and the approach it takes to ensure the safety of the public, local communities and National Grid's employees, please see section 7.10.

## ***Landscape and views***

### **Summary of responses**

9.6.7 Respondents raised an important consideration with regard to the Southern Substation Site being located on agricultural land and in a scenic landscape. Respondents felt the elevated position of this site would make it difficult to screen. Conversely, a number of respondents suggested that due to the site being in a more open position it would offer the best scope for effective screening.

### **National Grid's response**

9.6.8 With regard to comments concerning the southern site being located on agricultural and in a scenic landscape, National Grid takes into account the potential landscape and visual impacts any proposal could potentially have and how effective possible screening and other mitigation measures might be in reducing these impacts.

9.6.9 For more information on how National Grid will consider this and the mitigation measures it would employ for screening please see section 7.8.

## ***132 kV Overhead line***

### **Summary of responses**

9.6.10 Generally, respondents felt the Southern substation site would minimise the required length of the 132 kV line.

### **National Grid's response**

9.6.11 With regard to comments received about the 132kV line, please see section 9.25 for more information.

## **10.0 ADDITIONAL UNDERGROUND ELECTRICITY CABLES AT THE GLASLYN ESTUARY**

### **10.1 Overview**

10.1.1 During Stage One Consultation, respondents were asked to comment on the proposed route corridor and potential route alignment for the additional underground connection at the Glaslyn Estuary. The following themes emerged from the comments received on the Glaslyn Estuary feedback form and the non-fitting responses:

- Route corridor and route alignment
- Alternative route alignments
- Subsea connection
- Health and Electric and Magnetic Fields (EMFs)
- Environment impacts
- Construction
- Employment

10.1.2 National Grid has considered the comments and responded to them below.

### **10.2 Route corridor and route alignment**

The topics under this sub-theme include:

- Route corridor
- Existing local infrastructure

#### **Route corridor**

##### **Summary of responses**

10.2.1 Most respondents agreed with National Grid's decision to underground at the Glaslyn Estuary. A number of respondents suggested National Grid considers extending the length of underground cables to include the neighbouring Dwyryd Estuary.

##### **National Grid's response**

10.2.2 National Grid will consider all comments raised during Stage One Consultation regarding its proposals at Glaslyn Estuary when making its final design on route corridor and route alignment. However, National Grid will always seek to utilise existing equipment before building new equipment. At Glaslyn the two existing cable termination sites are able to accommodate the new cables. There is already an established crossing of the Dwyryd Estuary carrying the route on to Trawsfynydd. National Grid has not therefore considered extending the cable length or developing new compound sites as part of the current project.

#### **Existing local infrastructure**

##### **Summary of responses**

10.2.3 Generally, respondents expressed concerns about whether the route corridor and route alignment would affect the local railway and local road network.

##### **National Grid's response**

10.2.4 National Grid will consider existing infrastructure in the area when designing its final connection, which will include the local national rail network and highways. Additionally, National Grid will continue to consult with local stakeholders regarding its proposals, including Ffestiniog Railway Company, Welsh Highland Railway Ltd and the North Wales Trunk Road Agency, to ensure that there is minimal disruption to the activities of important tourist attractions.

### 10.3 Alternative route alignments

#### Summary of responses

10.3.1 Respondents suggested an alternative route alignment between the trunk gas main and the bypass bridge, as they felt it would have less impact on the landscape.

#### National Grid's response

10.3.2 With regard to the alternative route alignment suggested, this is largely located within the proposed route corridor presented at consultation. National Grid will undertake further environmental, socio-economic and technical constraints appraisals and will take into consideration the results of Stage One Consultation feedback to amend the route alignment within this corridor as necessary, so as to achieve the final design. Ecological surveys have been ongoing within the proposed corridor to help inform these decisions.

10.3.3 For further information on the alignment options National Grid considered please see the *Glaslyn Estuary Route Corridor Report* (available for download from the project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)).

### 10.4 Subsea connection

#### Summary of responses

10.4.1 A number of respondents suggested that they would prefer a subsea connection, negating the need to upgrade the connection across the Glaslyn Estuary.

#### National Grid's response

10.4.2 For National Grid's response to the **Subsea** theme please see section 7.4.

### 10.5 Health and EMFs

#### Summary of responses

10.5.1 Respondents expressed concerns about the perceived health risks relating to Electric and Magnetic Fields (EMFs), and the potential effect they could have on telephone and railway signalling control cables.

#### National Grid's response

10.5.2 For National Grid's response to health implications and the approach it takes to ensure the safety of the public, local communities and existing infrastructure, please see section 7.10.

10.5.3 National Grid will assess whether the new cables might affect existing third party cables and would put in place measures to ensure the continued safe operation of any third party equipment should this be necessary.

### 10.6 Environmental impacts

10.6.1 The topics under this sub-theme include:

- Biodiversity
- Designated sites

## ***Biodiversity***

### **Summary of responses**

10.6.2 Some respondents expressed concern about the impact the route alignment would have on the natural heritage of the Glaslyn Estuary.

### **National Grid's response**

10.6.3 Biodiversity interests were considered in the *Glaslyn Estuary Route Corridor Report* (available for download from the project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)).

10.6.4 A number of nature conservation designations exist within the Estuary, including SSSI, SAC and Wildlife Trust Reserve. These have all been designated across the route of the existing cables since they were installed. Given the geography of the designated sites the new cables will need to pass through them to connect to the ends of the overhead line sections at Wern and Y Garth.

10.6.5 Careful consideration will be given to where, when and how the cables could be installed within these sites so as to reduce the potential effects the works would have. This will be done in consultation with landowners, Natural Resources Wales, the North Wales Wildlife Trust and other interested stakeholders.

10.6.6 Further more detailed species surveys will be undertaken as the Project progresses. National Grid will also work closely with the relevant local authority and other statutory organisations, such as Natural Resources Wales, to identify a final connection design and any measures required to prevent, reduce and where possible offset any adverse effects on biodiversity interests along the whole of the route.

## ***Designated sites***

### **Summary of responses**

10.6.7 In general terms, respondents expressed concern over the perceived potential for effects on designated sites and areas. Respondents expressed concern that the route corridor presented by National Grid has two designated areas within it – Glaslyn SSSI which has breeding birds, assemblage of lowland damp grassland and breeding Ospreys and the Merionnydd Oakwoods and Bat Sites SAC.

### **National Grid's response**

10.6.8 National Grid considered the potential effect on designated sites in its *Glaslyn Estuary Route Corridor Report* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). These include National Parks, Areas of Outstanding Natural Beauty, Special Protection Areas / Special Areas of Conservation (SPAs / SACs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), World Heritage Sites, Scheduled Monuments, Welsh Historic Landscapes, Registered Parks and Gardens.

10.6.9 On the basis of the environmental constraints listed above, National Grid found that the principle of avoiding all environmentally designated sites was not possible. It was clear at an early stage of the route corridor assessment process that the Merionnydd Oakwoods and Bat Sites SAC was going to be a key constraint, due to its proximity to Y Garth sealing end compound and the fact that any corridor option from the west could likely include this site. While National Grid recognises that this is an important ecological site it was included in the route corridors on the basis that it could be either avoided at a later stage in the route alignment or installation methods could be employed that would result in there being no significant impact on qualifying features.

10.6.10 Effects on the landscape and habitats will be considered in identifying the final connection design. However at this stage, it is not yet possible to identify the effects fully because the detailed design work is yet to take place. National Grid will undertake detailed assessments and studies on specific ecological, heritage and environment aspects in order to identify a final connection design and any mitigation measures required.



10.6.11 For more information on how National Grid will consider and seek to minimise the effects of its proposals on designated sites please see section 7.8.

## **10.7 Construction**

10.7.1 The topics under this sub-theme include:

- Construction methods
- Safety
- Traffic

### ***Construction methods***

#### **Summary of responses**

10.7.2 Respondents requested more information on the construction methods available for underground cables including trench and cover or borehole drilling. As part of this, respondents requested further information on construction timings.

10.7.3 Respondents raised concerns about the effect the construction phase would have on railway track stability and what measures National Grid would put in place to ensure stability.

#### **National Grid's response**

10.7.4 There are a number of construction methods National Grid can employ for an underground connection. For more information on the methods please see the *Glaslyn Estuary Initial Route Corridor Report* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). National Grid will consider all methods available to construct the additional underground electricity cables at the Glaslyn Estuary. This will take place along with discussion with relevant stakeholder bodies on the appropriate methods and surveys, as well as how and when surveys will be undertaken.

10.7.5 The methods and procedures National Grid uses to construct underground cables are based on established good practice, the latest industry guidance and a number of British and International standards and regulations. This means National Grid puts plans in place for managing the effects of noise and construction traffic on local roads and communities, managing waste generated by its activities and, of course, protecting the environment including local habitats. Additionally, ongoing liaison is maintained with bodies such as Natural Resources Wales and local authorities.

10.7.6 National Grid will provide information on the construction phase as the project progresses and at any future stage of consultation. This will include detailed engineering discussions with both Network Rail and the heritage railway companies to agree the design of any necessary rail crossings and how stability would be ensured. National Grid's underground infrastructure crosses mainland railways in many places around the UK. The existing cables at Glaslyn pass beneath the main rail line and have done since their installation in the 1960s.

### ***Safety***

#### **Summary of responses**

10.7.7 Generally, respondents were concerned about safety during the construction phase and questioned if contractors would be strictly supervised to ensure adherence to safeguards.

#### **National Grid's response**

10.7.8 Safety is a top priority for National Grid and it has an exemplary safety record. All staff and contractors are formally inducted in health, safety, environmental and security procedures and must adhere to the *Safety and Well-Being Policy* (available for download from the National Grid website: [www.nationalgrid.com](http://www.nationalgrid.com)).

- 10.7.9 A detailed Risk Assessment and Working Method Statement will be developed and strictly adhered to, in order to ensure that all possible measures are taken to avoid safety risks to the public, employees and contractors.
- 10.7.10 There are a number of construction methods National Grid can employ for an underground connection. For more information on the methods please see the *Glaslyn Estuary Initial Route Corridor Report* (available for download from the Project website: [www.nationalgrid.co.uk/northwalesconnection](http://www.nationalgrid.co.uk/northwalesconnection) and [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)). National Grid will consider all methods available to construct the additional underground electricity cables at the Glaslyn Estuary. This will take place along with discussion with relevant stakeholder bodies on the appropriate methods and surveys, as well as how and when surveys will be undertaken.

## ***Traffic***

### **Summary of responses**

- 10.7.11 Some respondents expressed concerns regarding the disruption to the local road network during the construction phase.

### **National Grid's response**

- 10.7.12 National Grid undertakes a considerable amount of work to assess the effects of construction traffic. Where possible, National Grid would seek to minimise the effect of construction traffic on the local road network, residential property and on local amenity by a variety of means including route selection, timing of vehicle movements, and the use of alternative temporary haul-routes and would ensure any necessary mitigation methods are put in place.
- 10.7.13 National Grid develops and agrees a traffic management plan in conjunction with the North Wales Trunk Roads Agency, the local highway authority and the local police, with a view to minimising the number of journeys on local roads and scheduling journeys to avoid adding to the local traffic at peak times. National Grid will consult with emergency services in developing the traffic management plan to ensure their essential role is not compromised by National Grid's proposals.
- 10.7.14 Materials for construction of the new connection would normally be transported to the site by HGV. Should any abnormal road deliveries be required, National Grid would work very closely with the relevant highway authorities and the police to control the potential disruption that may be caused on the local road network.
- 10.7.15 Road access is necessary for National Grid staff and for the transport of equipment during construction, maintenance or repair.

## **10.8 Employment**

- 10.8.1 The topics under this sub-theme include:
- Local employment opportunities

### ***Local employment opportunities***

#### **Summary of responses**

- 10.8.2 Respondents expressed disappointment that the construction work appeared to bring no employment opportunities for local people.

#### **National Grid's response**

- 10.8.3 The majority of National Grid's construction work is carried out by specialist contractors. However, there will be a number of sub-contracting opportunities for local businesses.
- 10.8.4 Whilst National Grid is working in the area, its contractors would have significant requirements for local plant hire and sub-contracted services as well as for accommodation and subsistence. These services would have a positive knock-on benefit to local businesses and the local economy.

## 11.0 CONSULTATION IN NORTH WALES RESPONSES

### 11.1 Overview

11.1.1 During Stage One Consultation, respondents were asked to comment on their experience of National Grid's consultation. The following themes emerged from the comments received from the Wylfa-Pentir, West Gwynedd and Glaslyn Estuary feedback forms and the independent responses (including the pre-printed postcards).

- Consultation on subsea/underground options
- Meaningful consultation/challenge consultation
- Consultation material
- Exhibitions
- Consultation publicity
- Consultation timescales
- Further consultation
- Consultation fatigue

11.1.2 National Grid has considered the comments and responded to them below.

### 11.2 Consultation on subsea/underground options

#### Summary of responses

11.2.1 Generally, respondents expressed objection to the consultation as there was no opportunity to oppose an overhead connection and select a subsea or underground connection. As subsea and undergrounding options were not included, respondents generally felt that National Grid had already made its decision to progress with an overhead line connection.

11.2.2 As part of this, respondents expressed the hope that at the next stage of consultation National Grid would present a preferred route corridor with a significant amount of undergrounding.

11.2.3 Respondents believed National Grid selected its preliminary preferred option as it was the cheapest. As part of this, respondents felt that National Grid had not given adequate consideration to the cost of its proposals when factored against the perceived impact they would have on the environment, landscape, local businesses and tourism.

#### National Grid's response

11.2.4 For National Grid's response to the **Subsea** theme please see section 7.4 and for its response to **Undergrounding** please see section 7.3.

11.2.5 For National Grid's response to the **Environment** theme and **Landscape and views** sub-theme please see section 7.8.

11.2.6 For National Grid's response to the **Impact on tourism/economy** subtheme please see section 7.9.

### 11.3 Meaningful consultation/challenge consultation

#### Summary of responses

11.3.1 Generally, respondents challenged the influence their responses will have on National Grid's consultation believing National Grid will not take their views on board in its decision making process.

11.3.2 The majority of challenges to National Grid's consultation were received via postcard responses with 587 respondents ticking the following statement on the postcards (in Welsh and English):

*"I feel that National Grid's consultation feedback form does not allow me to express my views clearly."*  
(Postcard response)

11.3.3 A number of respondents perceived National Grid's consultation to be too late in the Project development process. Respondents suggested that they should have previously been given an opportunity to influence National Grid's preliminary preferred option.

- 11.3.4 In general terms, a common suggestion by respondents was that the consultation (and the feedback forms) provided no opportunity to say 'no' to National Grid's proposals, and the consultation was challenged on this basis. Respondents suggested that without a 'no' option, National Grid was not engaging in a valid consultation.
- 11.3.5 Respondents also expressed the opinion that National Grid's consultation had been undertaken to '*pit areas of the island against each other*' and turn one community against another. This perceived approach was viewed with cynicism by respondents, which it was suggested compromised the validity of the consultation and that it would be influenced by numbers/areas of the highest population, rather than specific feedback.
- 11.3.6 One respondent felt that National Grid had not undertaken consultation with interested national bodies and therefore believed the consultation was flawed.
- 11.3.7 Respondents questioned National Grid's methodology when it came to its consultation process and felt it did not comply with its own methodology set out in its document '*Our approach to the design and routeing of new electricity transmission lines (2012)*'.
- 11.3.8 Conversely, a number of respondents felt the consultation process had provided a useful introduction to the Project and expressed their satisfaction in being given the opportunity to comment on National Grid's proposals.

### **National Grid's response**

- 11.3.9 Although the form/design of the connection has yet to be determined (and elements of the North Wales Connection Project will be determined under other consenting regimes) Stage One Consultation has been progressed taking into account guidance relevant to NSIPs under the Planning Act 2008. Consultation is a central requirement of the Planning Act 2008 process and National Grid is committed to giving people the opportunity to comment on its proposals and that these comments will be considered when developing the Project. National Grid's *Consultation Strategy* was developed in conjunction with the local authorities Isle of Anglesey Council and Gwynedd Council setting out the informal and formal consultation (in accordance with the requirements of the Planning Act 2008 and government guidance).
- 11.3.10 The examination process for determining applications for NSIPs includes a review of consultation feedback and an explanation of how comments received during the pre-application consultation have been considered in the development of proposals (under section 49 of the Planning Act 2008).
- 11.3.11 Regardless of which elements of the proposal falls under the Planning Act 2008, National Grid will consider representations received during the Stage One Consultation from the public and stakeholders to ensure that their views and opinions are taken into account when decisions are made, as shown in this Feedback Report.
- 11.3.12 National Grid will continue to accept and consider the content of representations until the point of the submission of applications to consenting authorities. This is a multi-staged Project and additional factors will be considered prior to any application being submitted. Further consultation will also take place on route alignments and the final form of the connection prior to application submission.
- 11.3.13 In terms of whether consultation should take place earlier in the process, and in planning the consultation, National Grid considered at which part of the development process public engagement should take place. It was decided that prior to making decisions on the three packages within the North Wales Connection Project, the Project was at a stage at which the public could genuinely influence the Project through local knowledge and feedback. The strategic options stage, in which National Grid identifies the most suitable point on the existing network to connect, concentrates on broadly technical issues meaning there is less opportunity for public consultation feedback to influence decisions.
- 11.3.14 National Grid did not seek to present a divisive consultation. The feedback forms were largely dictated by the strategic options process, Wylfa to Pentir route corridors, West Gwynedd substation sites and the Glaslyn Estuary route corridor and potential route alignment, which were identified on a technical and environmental basis. The feedback forms were developed for respondents to provide National Grid with information on these primary points of the consultation and any other points they felt were important.

- 11.3.15 With regard to the comment that there had been no consultation with interested parties, National Grid believes that its stakeholder consultation was appropriate for projects of this type and in accordance with the Planning Act 2008. National Grid engaged widely with stakeholders and political representatives around the launch of the North Wales Connection Project. All stakeholders and political representatives were sent a copy of Project News, the community newsletter with a covering letter along with the Community Relations team contact details should they have any further queries or questions. The covering letter also provided details of two stakeholder preview events.
- 11.3.16 Additionally, early pre-consultation engagement took place with North Wales MPs and AMs to provide an overview to the background of the Project and its need. During this phase, meetings were also held with Isle of Anglesey County Council and Gwynedd Council around the development of the *Consultation Strategy*.
- 11.3.17 Building on the early stakeholder engagement, National Grid ensured that relationships with relevant local authorities, statutory consultees and other bodies remained strong by meeting with them regularly. National Grid meets with local authority officers from Isle of Anglesey and Gwynedd Council and will continue to do so throughout the Project. This is an ongoing process which has already helped influence and shape National Grid's approach.

## **11.4 Consultation material**

- 11.4.1 The topics which are identified under this sub-theme include:
- Consultation materials
  - Maps
  - Website
  - Newsletter
  - Feedback forms

### ***Consultation materials***

#### **Summary of responses**

- 11.4.2 There were mixed views about National Grid's consultation materials with some considering the materials useful and informative, while others challenged the accuracy of the data provided by National Grid. Similarly a number of respondents felt the consultation materials were too technical and therefore confusing.

#### **National Grid's response**

- 11.4.3 The amount of information made available was carefully considered as different respondents require varying levels of information depending on the level of their enquiry. National Grid aimed to make all of the necessary reports and supporting documents available for those that wanted them. For those not wishing to use such documents, the consultation team was available for discussion through the public events.
- 11.4.4 National Grid also made information available at a number of civic locations to ensure those respondents not able to access its website or attend one of its exhibitions, could take part in the consultation process. The consultation website was designed to be a resource of all documentation, but the packs in civic locations also included all important Project documents, and maps following public requests for large scale maps. Reports and other information were available in hard copy form from National Grid's community relations team during the consultation.

## **Maps**

### **Summary of responses**

11.4.5 Some respondents suggested that the consultation maps available lacked detail. Respondents also stated it would have been more helpful if larger maps had been available. One respondent commented that there wasn't a map with the Menai Strait crossing options on it whilst another respondent commented that the maps had inaccurate data on – with a number of respondents commenting that the Minifford to Tremadog bypass was not included.

### **National Grid's response**

11.4.6 Various maps were made available during the consultation including standard Ordnance Survey maps and 'constraints' maps, which showed some of the primary environmental and technical constraints (Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest, Special Areas of Conservation etc) considered in the identification and development of route corridors. For all maps, National Grid used the most up-to-date data that were available. All of these maps along with a specific Interactive Project map available on the consultation website were available during the consultation process.

11.4.7 Large scale maps were available on request from the Community Relations team, online via the consultation website, available at the public exhibitions and in the information packs at civic locations.

11.4.8 With regard to the comment that there were no maps with the Menai Strait crossing options on, maps were available with the different crossing options on.

## **Website**

### **Summary of responses**

11.4.9 A number of respondents raised concerns regarding the consultation website – with particular reference to the difficulty in completing the online sensitive locations question. One respondent commented that the inaccessibility of the sensitive location map meant that the consultation process was not equally open to all.

11.4.10 Conversely, a number of respondents commented that the information presented on the website was informative and useful.

### **National Grid's response**

11.4.11 The website contained all of the consultation materials available at the exhibitions in an online format. It is acknowledged that for a period at the beginning of the consultation, due to technical faults, the Wylfa to Pentir feedback form was not available, and some people in the Project area experienced access problems due to connectivity/band width of resultant hosting site ambiguity.

11.4.12 This online interactive map was designed to allow better understanding of National Grid's proposals whilst providing the user with information on local sites and characteristics that have influenced the proposals and a postcode finder allowing users to find their respective properties. There are a number of navigational features included alongside the map, including a zoom slider and a text display of the current map scale. Comprehensive instructions are available with the online map. National Grid considers that these showed a good level of geographical information on which to demonstrate the proposals.

## **Newsletter**

### **Summary of responses**

11.4.13 One respondent felt that the photograph used for the front of the autumn 2012 Project News was insensitive as it included tall pylons east of the Britannia Bridge and over Ynys Gorad Goch.

## **National Grid's response**

11.4.14 Use of imagery on the autumn 2012 Project News was not intended to be insensitive by National Grid. The image is of the existing 400 kV overhead line that runs from Wylfa to Pentir.

## **Feedback forms**

### **Summary of responses**

- 11.4.15 In general terms, respondents criticised the feedback forms for not providing more options for respondents to comment, such as on a subsea connection. It was felt that by providing the opportunity to comment only on options already selected, National Grid was deliberately attempting to gain support for its preliminary preferred option.
- 11.4.16 Similarly, one respondent felt that the 'Yes/No/No *Opinion*' format of the feedback forms was too restrictive as it did not provide the option for National Grid's proposals to be supported or rejected with caveats.
- 11.4.17 In general terms, respondents' opinions were divided on the user-friendliness of the feedback forms with an equal number of respondents having a favourable or negative attitude towards them. One of the challenges expressed by respondents was that they were only useful when used in conjunction with other consultation documents.
- 11.4.18 A number of respondents felt that the feedback forms stated as a certainty that Horizon Nuclear Power's proposed new nuclear power station would definitely go ahead.

## **National Grid's response**

- 11.4.19 The feedback forms were developed for respondents to provide information on the primary points of the consultation for each individual package of work. The open ended nature of the questions was intended to allow respondents to express their views on any aspect of the Project for National Grid to take into consideration.
- 11.4.20 There was also the opportunity to make use of the comment boxes on the feedback forms, if respondents chose not to tick the boxes. The tick boxes included on the form were to help National Grid understand if respondents had preferences, but there was no intention to carry out a voting exercise. Whilst recognising that many people encountered challenges in responding on aspects of the Project that were not in their regional area, National Grid provided information to help inform respondents of matters relevant to the whole connection Project. National Grid made clear during engagement there was no obligation to fill in all of the feedback form. A digital copy of the feedback form was available through the Project website and was available for download to fill in by hand.

## **11.5 Exhibitions**

### **Summary of responses**

- 11.5.1 Respondents provided mixed feedback on the experience of the consultation exhibitions. Many suggested that National Grid's programme of events provided a good opportunity to attend.
- 11.5.2 Accessibility and scheduling of exhibitions was queried by respondents with some suggesting events were held at '*inconvenient hours*' which were difficult for people that worked to attend.
- 11.5.3 Respondents' comments on National Grid staff attending the exhibitions was wide-ranging, with some suggesting that they found staff helpful and informative. However, a number of respondents also expressed the opinion that staff members did not have sufficient knowledge to answer questions.

## **National Grid's response**

- 11.5.4 The number, location and frequency of exhibitions were considered carefully as part of the consultation plan, with a total of 35 exhibitions throughout the Project area. The programme of events was developed in consultation with Isle of Anglesey Council and Gwynedd Council.
- 11.5.5 National Grid endeavoured to hold exhibitions within or as close to the proposed developments as possible, while also making sure events were held in the largest towns/villages (with public transport links) to reach the maximum number of people. Where an acceptable venue was not available, National Grid used the consultation vehicle to target more remote areas to provide a good geographical spread within the Project area.
- 11.5.6 Eight exhibitions were held at the weekend and sixteen were open until 7:30pm to attempt to access all sectors of the local community and to include typical out-of-work hours. However, National Grid recognises that the timing of consultation events caused frustration and will consider holding future exhibitions at other times of the day.
- 11.5.7 At each event a team of qualified and experienced individuals was made available to answer questions on the main issues likely to be raised. National Grid encouraged these teams to answer questions within their own areas of expertise and not all staff were expected to answer every question. In these instances, respondents should have been referred to an alternative spokesperson.

## **11.6 Consultation publicity**

### **Summary of responses**

- 11.6.1 A number of respondents expressed their concern about the level of publicity and awareness raising that accompanied National Grid's consultation. Many respondents said that they did not receive any direct communication from National Grid claiming that they did not receive a copy of 'Project News' with one respondent commenting that the design of 'Project News' made it look like a circular which was then disposed of as junk mail.
- 11.6.2 Conversely, a number of respondents felt that the Project information was well distributed.

### **National Grid's response**

- 11.6.3 National Grid recognises concern expressed over the Project newsletter. Careful thought was given to the content and presentation of this newsletter to provide sufficient information on its work, while also making it as concise as possible so people could easily develop an understanding of National Grid's proposals. The newsletter was circulated to around 89,000 households throughout the Project area, including those likely to be most affected by National Grid's proposals and neighbouring postcode districts.
- 11.6.4 The newsletter was distributed by Royal Mail, which provides delivery assurances of items processed through its mail system. The distribution area and consultation zones were discussed with Isle of Anglesey County Council and Gwynedd Council.
- 11.6.5 Recognising concern expressed over the Project newsletter, including the design (and that many people disposed of it as its purpose was unclear). Careful thought was given to the content and presentation of the newsletter to provide sufficient information on its work, so people could easily develop an understanding of its proposals.
- 11.6.6 Additionally, the newsletter was sent in a branded envelope which clearly stated 'National Grid Important Consultation Documents Enclosed' in dual language.



## 11.7 Consultation timescales

### Summary of responses

11.7.1 There were mixed views about the period of consultation with some considering it too short, while others felt it was too long. Those respondents that felt it was too short had concerns about having insufficient time to attend exhibitions, consider information and provide their feedback.

### National Grid's response

11.7.2 As part of the development of its *Consultation Strategy*, National Grid worked closely with Isle of Anglesey and Gwynedd Council and provided opportunity for the councils to comment on the strategy including consultation timing. The timing of the consultation was driven by several factors such as the completion of work and its readiness for presentation to the public; the need to meet an agreed connection date for National Grid's contracted connectees; the phasing of seasonal studies; and the needs of the communities with which National Grid was consulting.

11.7.3 National Grid always endeavours to consult at a time which will suit the majority of people although inevitably there will be always being some factor which makes this difficult. Consulting in winter can introduce seasonal restrictions making it difficult for people to attend public exhibitions. Conversely, summer consultations can prove difficult due to this being an important time of year for holidays and people are often away from home. National Grid recognises that the consultation timing will not suit everyone, which is why the timescale for the consultation including public exhibitions was spread over six weeks, and the period for feedback for ten weeks.

## 11.8 Further consultation

### Summary of responses

11.8.1 Respondents expressed a desire to be kept fully informed by National Grid and requested consultation in order for National Grid to focus on specific actions identified including; further assessments and research and requests for further meetings.

11.8.2 One respondent asked if they could be involved in any steering committee National Grid sets up in the future. Additionally, one respondent suggested National Grid hold open surgeries in the affected areas or a series of public meetings.

### National Grid's response

11.8.3 National Grid has adopted a multi-stage consultation programme for the North Wales Connection Project which consist of three consultation stages:

- **Stage one** - Strategic options and route corridor consultation (now completed)
- **Stage two** - Preliminary preferred corridor and route alignment consultation
- **Stage three** - The proposed application consultation

11.8.4 Stages one and two are informal consultation stages with the final stage, stage three, conducting the formal consultation in accordance with sections 42-48 of the Planning Act 2008 (as amended by the Localism Act 2011).

11.8.5 National Grid has provided a summary and qualitative analysis of representations received during Stage One in this Feedback Report, identifying the issues raised by the public and stakeholders. This Feedback Report is the first in a suite of Feedback Reports compiled at the end of each of the three consultation stages. These Feedback Reports will ultimately inform the Consultation Report which is submitted as part of the DCO application under Section 37(3) (c) of the Planning Act 2008. Feedback will also be provided to respondents following Stage One, including:

- Updating the website to provide an overview of the Stage One Consultation, highlighting key issues raised, detailing National Grid's response and answers to common questions;
- Providing a summary of the consultation process to date in the newsletter highlighting key issues raised, detailing National Grid's response and answers to common questions. The newsletter will be provided directly to everyone who attended the first stage of consultation and provided contact details; and
- Making the Feedback Report available on the website, in libraries and civic locations and available on request.

11.8.6 National Grid takes on the suggestion to hold surgeries in affected regions and will consider when reviewing the *Consultation Strategy* for the next stage of consultation.

## **11.9 Consultation fatigue**

### **Summary of responses**

11.9.1 A number of respondents expressed that consultation fatigue was experienced. It was felt that there was a large number of consultations that local residents had been asked to take part in and respondents suggested National Grid should have coordinated its consultation with other companies.

### **National Grid's response**

11.9.2 As far as possible, National Grid works with its connectees to coordinate consultation stages and exhibition dates. By doing so, it is hoped the potential for consultation fatigue and confusion was reduced, whilst at the same time allowing the public to feedback on each parties' consultation having gained an appreciation of the full extent of works that are being proposed.

## 12.0 CONSULTATION EVALUATION

### 12.1 Who took part?

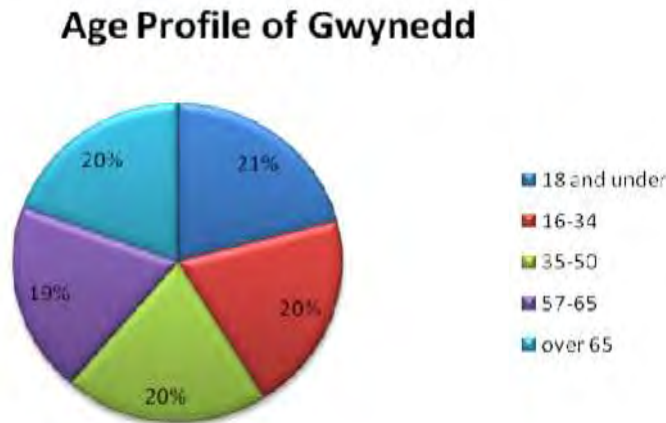
- 12.1.1 A total of 736 visits were recorded to the public consultation events. Appendix N details the number of attendees to each consultation event. During Stage One Consultation, the English website received 2,979 visits and the Welsh website received 151 visits.
- 12.1.2 These figures represent a very small proportion of those people made aware of the proposals through newsletters, local adverts and other awareness raising activities. It is assumed therefore that those who did not respond did not feel strongly enough, either positively or negatively, about the proposals to attend or forward concerns/ideas, or that they had at this stage no additional views to add.
- 12.1.3 Section A, 'About You', of each of the feedback forms (Appendix I) was used to monitor information given by the respondents. This monitoring exercise gathered information of those choosing to respond to the Stage One Consultation. The data collected included names/organisations, addresses, email addresses and age categories. From the information gathered it is possible to make a judgement to whether those who have taken part in the Stage One Consultation is a fair representation of the wider community in the areas affected by the proposals. Where gaps appear National Grid can take action to fill those gaps and be assured that every effort is made to gain responses which represent the wider community.
- 12.1.4 From the monitoring information collected it is possible to gather the age categories of those who responded to the Stage One Consultation. This allows National Grid to identify if there are any age groups that have been under represented and whether there is the need to target certain age groups in the next consultation stage to ensure that the wider community is consulted.
- 12.1.5 The age profile of those living on the Isle of Anglesey and Gwynedd, as identified in the 2011 census, is shown in Graphs 1 and 2 below:

#### 12.1.6 Graph 1 'Age profile of Isle of Anglesey'

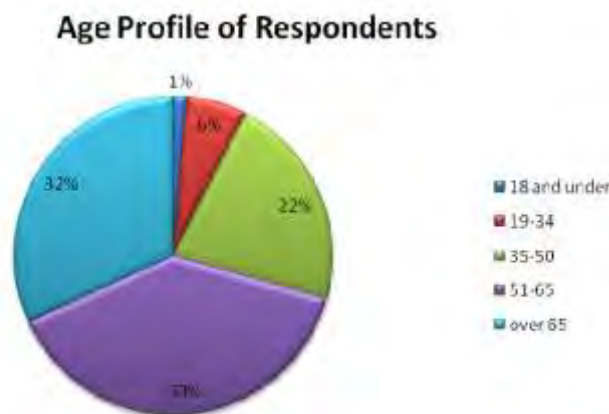
**Age Profile of Isle of Anglesey**



### 12.1.7 Graph 2 'Age profile of Gwynedd'



### 12.1.8 Graph 3 'Age profile of respondents'



12.1.9 From the feedback forms received, 361 people identified their age group. Graph 3 above shows the results of this monitoring exercise.

12.1.10 Compared to the community makeup shown in the 2011 census for the Isle of Anglesey and Gwynedd, it can be concluded that those aged '18 and under' and '19-34' were not as well represented as the '35-40s' and there is an over representation of the '51-65s' and 'over 65s'. Therefore, moving into the Stage Two Consultation action needs to be taken to directly target those under the age of 34 to ensure that the wider community's views are gathered on National Grid's proposals.

12.1.11 The final section of each feedback form asked respondents for their views on National Grid's consultation in North Wales. Chapter 11 summarises the responses received and National Grid's response. Taking into consideration the comments made in the Stage One Consultation, along with the information gathered in this chapter the Project team are able to review and update the *Consultation Strategy* in order to provide a Stage Two Consultation.

## 12.2 Further research

12.2.1 In order to fill the gaps highlighted above, following the close of the Stage One Consultation National Grid commissioned further research to be undertaken into the views of residents across Anglesey and Gwynedd.

12.2.2 Similarly to the 'Public Awareness Survey' undertaken in August 2011, measuring reactions to new low carbon energy projects taking place in Anglesey (see section 3.3.7), further telephone interviews were conducted in March 2013 with 700 residents of Anglesey and Gwynedd.

12.2.3 The main objectives of this research were to obtain broad and representative feedback on a range of issues, providing a means of reaching those who may not necessarily attend events and exhibitions, to:

- Gauge the level of understanding and knowledge of the electricity transmission network;
- Gauge the level of understanding and knowledge about projects in the local area and consultations around them;
- Obtain feedback on the most appropriate method of communicating information about new projects; and
- Obtain insightful and constructive evidence that can be used to support respective applications.

12.2.4 Results from the research highlighted the following:

- 59% of all respondents were aware of new low carbon projects in North Wales. 58% of those who were aware of new projects mentioned offshore wind farms, 49% nuclear power stations and 47% onshore wind farms.
- Awareness of National Grid was very high, with 96% of respondents having heard of National Grid and 13% said they did not know, or were not sure what National Grid did.
- The majority (62%) recognised the need to update the electricity grid as a result of new projects.
- In general, residents across all areas shared similar levels of concern over the development of the electricity transmission system. The biggest concerns for residents were that the development would be unsightly or the environment would be affected.
- Residents felt that National Grid does consider different factors when planning new work – in particular energy security is thought to be considered to a large extent. Residents were most concerned that tourism is not considered by National Grid.
- Half of respondents (50%) were aware that National Grid had held consultations in October and November 2012 with 23% of those who were aware of the consultation having taken part.
- The majority of respondents who did not take part in the consultation process noted it was due to other commitments (39%). This was particularly the case for those aged 35-64, with 45% citing other commitments, compared to 22% of those aged 65+. Other reasons for not taking part included; not being interested or not finding it relevant (8%) and that it didn't affect the respondent (8%).
- Just under half (48%) of respondents recalled receiving a newsletter.
- Seven in ten (71%) felt the level of information in the newsletter was about right.
- Respondents most commonly preferred method for receiving information was via a newspaper delivered to their door (39%).
- Around two thirds of respondents (64%) said they would prefer future National Grid exhibitions to be held in village halls. 50% preferred a mobile exhibition vehicle and 42% a local library.

12.2.5 The key findings set out above will feed into the *Consultation Strategy* and will be taken into consideration when developing the next stage of consultation for the Project.

### **12.3 Next steps**

12.3.1 National Grid is continuing to consider all of the feedback it received and is continuing to speak to expert bodies and organisations regarding its plans.

12.3.2 Since the Need Case and SOR were developed, other new sources of energy generation have been proposed which we will need to connect to the electricity network in North Wales. An agreement has been signed with Codling Wind Park Ltd to connect 1GW of offshore wind energy sited off the coast of Ireland. This is in addition to the agreement that had previously been signed with Greenwire to connect 1GW of Irish offshore wind energy to our existing substation at Pentir, Gwynedd. This significant increase in generation means that National Grid is now checking its initial proposals carefully to ensure they still remain appropriate.

- 12.3.3 Since the consultation, Horizon has changed ownership and has indicated the amount of energy the nuclear power station will generate will change together with its timeframes.
- 12.3.4 National Grid is working closely with all of the energy generators to understand their requirements.
- 12.3.5 National Grid will keep communities up to date as its proposals move forward and there will also be further opportunities for communities to provide feedback as part of the consultation process.

## 13.0 POST CONSULTATION FEEDBACK

### 13.1 Overview

- 13.1.1 Stage One Consultation was held between 3 October and 21 December 2012. National Grid allowed four weeks following the close of consultation (18 January 2013) for feedback be processed through the Royal Mail postal system and also allowing for any delays as a result of the Christmas period. The responses received from 18 January 2013 up to the publication of this Report, are considered as '**post consultation feedback**'.
- 13.1.2 Post consultation feedback has been logged, analysed and considered as part of National Grid's wider consideration and analysis of consultation feedback. Post 18 January 2013 responses were logged separately to those comments received during formal consultation. National Grid responded to consultation feedback received post 18 January 2013 via the same correspondence medium by which it was received.
- 13.1.3 Post 18 January 2013 consultation feedback typically raised matters/themes which were consistent with consultation feedback received during the formal consultation period, and a summary of these matters/themes, together with National Grid's response is below. As such, common themes raised by respondents during the post consultation feedback period are included in the response analysis which is used to inform National Grid's decision making process.

### 13.2 Themes raised from post consultation feedback

#### ***Subsea***

##### **Summary of responses**

- 13.2.1 As with feedback received during Stage One Consultation, a number of respondents felt the connection should be put in the sea due to the perceived landscape damage and potential visual, health and economic impacts of an overhead line.

##### **National Grid's response**

- 13.2.2 For National Grid's response to the feedback received on a ***Subsea*** connection please see sections 7.4.

#### ***Undergrounding***

##### **Summary of responses**

- 13.2.3 A couple of respondents called for National Grid to consider undergrounding for all of, or part of, the route from Wylfa to Pentir. The respondents stated that if this was not possible the route should be placed underground at the Menai Strait.

##### **National Grid's response**

- 13.2.4 For National Grid's response to the feedback received on ***Undergrounding*** please see section 7.3.

#### ***Visual impact***

##### **Summary of responses**

- 13.2.5 A number of respondents expressed concern regarding the visual effect associated with pylons and overhead lines. It was felt any new overhead line in the area would have an adverse effect on visual amenity and would have a direct impact on tourism and the local economy. One respondent also commented that the cumulative impact of the existing overhead line and infrastructure in the area would have an adverse effect on visual amenity.

### **National Grid's response**

13.2.6 National Grid always seeks to minimise effects on the visual amenity of people, including residents, users of important tourist routes and key recreational areas. For further information on how National Grid achieves this and the measures it would undertake please see section 7.8.

### ***Cultural heritage***

#### **Summary of responses**

13.2.7 A couple of respondents were concerned that National Grid had not given enough consideration to the rich cultural heritage of the area when deciding on its preliminary preferred connection option.

### **National Grid's response**

13.2.8 National Grid acknowledges the historic environment is important and takes into account appropriate guidance and legislation when developing its proposals. For further information on how National Grid considers ***Cultural heritage*** please see section 7.8.

### ***Funding of projects***

#### **Summary of responses**

13.2.9 One respondent questioned how National Grid funds its projects and ultimately how much the North Wales Connection Project will cost consumers.

### **National Grid's response**

13.2.10 As discussed under the theme ***National Grid's cost assessment*** the funding of the up-front costs for projects comes from National Grid's shareholders and the institutions that lend it money. For further information please see section 7.6.

13.2.11 With regard to the cost to consumers, the costs of developing and operating the electricity transmission system are ultimately borne by the consumer, both domestic and commercial. Accordingly, National Grid has a statutory and licence duty to develop and maintain an economical system of electricity transmission. For further information please see section 7.6.

### ***Alternative options***

#### **Summary of responses**

13.2.12 One respondent questioned whether the former Shell pipeline from Amlwch to Stanlow would be suitable for an underground connection. The respondent perceived this option to be a more economic and environmentally viable option.

### **National Grid's response**

13.2.13 National Grid is aware of the existence of this pipeline and did consider this as an option. Please see section 7.5 for more information.



## ***Health and safety***

### **Summary of responses**

13.2.14 A couple of respondents expressed concerns about the perceived health risks of overhead lines with particular concern relating to Electric and Magnetic Fields. Concern was raised with regard to living in close proximity to high voltage infrastructure and long-term exposure to EMFs.

### **National Grid's response**

13.2.15 Electric and magnetic fields (EMFs) are produced wherever electricity is used, and there have been suggestions that exposure to these fields might be a cause of ill health. National Grid fully recognises people's concerns and the uncertain scientific position on this subject. For further information please see section 7.10.

## ***Noise***

### **Summary of responses**

13.2.16 A couple of respondents expressed concern regarding the noise pollution of overhead lines particularly in wet weather conditions and the potential for this to significantly increase when residents are in close proximity.

### **National Grid's response**

13.2.17 With specific reference to overhead line concerns; all overhead lines can generate noise, the level of which depends mainly on the type of construction, the nominal operating voltage (275 kV and 400 kV) and weather conditions. For further information please see section 7.10.

## ***Terrorism and nuclear waste***

### **Summary of responses**

13.2.18 Additionally, one respondent expressed concern about how nuclear waste would be treated and the threat of a terrorist attack on a nuclear power station.

### **National Grid's response**

13.2.19 Questions regarding the proposed new nuclear power station at Wylfa should be directed to Horizon Nuclear Power, the company proposing the new station.

## ***Meaningful consultation/challenge consultation***

### **Summary of responses**

13.2.20 Similar to the feedback received during the first stage of consultation, a number of respondents challenged the influence feedback would have on National Grid's decision making process.

13.2.21 One respondent perceived National Grid's consultation to be too late in the Project development process with the respondent suggesting that stakeholders and the local community should have been given an opportunity to influence National Grid's preliminary preferred option.

13.2.22 In general terms, a common suggestion by respondents was that the consultation (and the Feedback form) provided no opportunity to say 'no' to National Grid's proposals, and the consultation was challenged on this basis. Respondents suggested that without a 'no' option, National Grid was not engaging in a valid consultation.

13.2.23 Conversely, two respondents felt the consultation process and the supporting materials had provided a useful introduction to the Project.

### **National Grid's response**

13.2.24 National Grid is committed to giving people the opportunity to comment on its proposals. For further information please see Chapter 3.0.



## **6.2.3**

### **Appendix 3**

#### **Stage One Consultation Feedback Report Appendices**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

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# **North Wales Connection Project**

## **Stage One Consultation Appendices**

National Grid  
National Grid  
House  
Warwick  
Technology Park  
Gallows Hill  
Warwick  
CV6 3DA

June 2014

## APPENDIX SCHEUDLE

Appendix A:	<b>Strategic options report responses</b> – sets out the analysis of the representations received from stakeholders and the public on the Strategic Options Report
Appendix B:	<b>Wylfa-Pentir responses</b> – sets out the analysis of the representations received from stakeholders and the public on the route corridors between Wylfa and Pentir, the Menai Strait crossing options and sensitive locations
Appendix C:	<b>West Gwynedd responses</b> – sets out the analysis of the representations received from stakeholders and the public on the proposed new substation site options in West Gwynedd
Appendix D:	<b>Glaslyn Estuary responses</b> – sets out the analysis of the representations received from stakeholders and the public on a Glaslyn Estuary underground connection, and a proposed route corridor and potential route alignment
Appendix E:	<b>Consultation responses</b> – sets out the analysis of the representations received from stakeholders and the public on the Stage One Consultation process in North Wales
Appendix F:	National Grid’s commitments when undertaking works in the UK: Our Stakeholder, Community and Amenity Policy.
Appendix G:	Our approach to the design and routeing of new electricity transmission lines
Appendix H:	Project News 2012 - dual-language
Appendix I:	Feedback forms (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) - dual language
Appendix J:	Feedback form explanation booklets (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) - dual language
Appendix K:	Public exhibition attendance
Appendix L:	Public awareness survey study areas
Appendix M:	Schedule of ‘hard to reach groups’
Appendix N:	Stakeholders Consulted in Stage One Consultation
Appendix O:	Stage One Consultation – Consultation Zones
Appendix P:	Schedule of public locations for viewing key project documents
Appendix Q:	Advertisement - dual-language

Appendix R:	'Holford Rules'
Appendix S:	'Horlock Rules'
Appendix T:	Sensitive locations map and Sensitive locations postcode response map
Appendix U:	Anglesey Energy Island Programme advertorial
Appendix V:	Abbreviations

## Appendix A: Strategic Options Report responses



# APPENDIX A Strategic Options Report responses

## 1.1 Overview of analysis

1.1.1 The Stage One Consultation feedback forms (Appendix K, L, and M) for each of the three packages of work (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) were split into sections relating to different aspects of the North Wales Connection Project. Section B of each feedback form included two questions on National Grid's Strategic Options Report (SOR). The comments relating to the SOR received on all three packages of work have been analysed together and are set out below. Where geographic differences occur these have been drawn out in the analysis.

## 1.2 Analysis of responses from stakeholder organisations

1.2.1 The following stakeholder organisations responded to the Stage One Consultation on the SOR:

- Aberffraw Community Council
- Anglesey Economic Regeneration Partnership
- Anglesey Tourism Association
- Asiantaeth yr Amgylchedd Cymru / Environment Agency Wales
- Bangor City Council
- CCW
- CPRW
- CPRW Anglesey Branch
- CPRW Caernarfonshire Branch
- CPRW Meirionnydd Branch
- Cwm Cadnant Community Council (Vice Chairman)
- Cymdeithas Eryri – Snowdonia Society
- Cyngor Cymdeithas Llanfaethlu a Llanfwrog
- Cyngor Cymuned Llanddaniel-fab / Llanddaniel-fab Community Council
- Cyngor Tref Porthaethwy / Menai Bridge Town Council
- Federation of Small Businesses, Ynys Môn branch
- Ffestiniog Railway Company
- Gwynedd Council's Cabinet
- Horizon Nuclear Power
- Isle of Anglesey County Council
- LLanbadrig Community Council
- Llanddeiniolen Community Council
- Llanddyfnan Community Council
- Llanfairpwllgwyngyll Community Council
- Malltraeth Ymlaen (Community Group Bodorgan)
- Mechell Community Council
- Môn a Gwynedd Friends of the Earth
- NFU Cymru
- North Wales Wildlife Trust
- Penmynydd Community Council
- RSPB
- Snowdonia National Park
- The National Trust
- Trewalchmai Community Council
- Welsh Highland Railway Ltd
- Wylfa PLG
- Ynys Môn Ramblers Group
- North Wales Wildlife Group

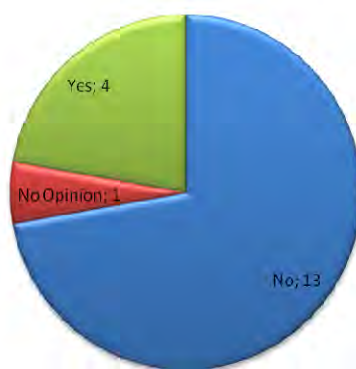
## 1.2.2 Strategic Options Report

1.2.3 Question 1 on all three feedback forms asked respondents; *'Do you agree with the preliminary findings of National Grid's Strategic Options Report?'*

1.2.4 18 stakeholders responded to this question. 13 stakeholders responded via the Wylfa-Pentir feedback form. The results are shown in graph 1 below. As a result of the small amount of stakeholders responding to this question on the West Gwynedd feedback form (two responses) and on the Glaslyn Estuary feedback form (three responses), the overall response was heavily influenced by the responses received on the Wylfa-Pentir feedback form, which identifies that stakeholders were largely not in agreement with the findings of the SOR.

## 1.2.5 Graph 1 – Stakeholder response on agreement with Strategic Options Report

**Stakeholder Response on Agreement with Strategic Options Report**



1.2.6 Question 2 on all three feedback forms asked respondents; *'Please provide reasons for your answer, and any other comments on our Strategic Options Report'*. The following responses were received by stakeholders through the Wylfa-Pentir, West Gwynedd and Glaslyn Estuary feedback forms as well as through other formats.

## 1.2.7 Pylons and overhead lines

1.2.8 Several stakeholders opposed the use of an overhead line due to the following reasons; landscape damage and/or visual impact, heritage, economic and wildlife impacts and difficulties caused to the farming community.

1.2.9 A number of stakeholders expressed opposition to an overhead line due to the impact it would have on the entire project area. Additionally, specific locations were referenced including: the Menai Strait, the Gwynedd and Dwyrdd estuaries, Snowdonia and across public footpaths.

1.2.10 Llanfairpwllgwyngyll Community Council expressed concern that an additional overhead line across the Menai Strait demonstrates a disregard for the Holford 'Rules'.

1.2.11 The Anglesey Economic Regeneration Partnership expressed its opposition to an additional overhead line across the Menai Strait due to its unrivalled panoramic views of Snowdonia and its designation as an Area of Outstanding Natural Beauty (AONB).

1.2.12 The Environment Agency Wales expressed concern about bird populations:

*"We have strong concerns regarding any overhead options across the Glaslyn Marshes (3A, 3B and 3C) due to a major landscape impact on a nationally recognised beauty spot but also potential for a bird strike. There is an important whooper swan herd using the area, 40-80 swans in the winter - a feature of the Site of Special Scientific Interest. Ospreys have also established a breeding population on the marsh, one of only 2 sites in Wales."* (Environment Agency Wales)

- 1.2.13 A number of stakeholders expressed opposition to overhead lines. Llanddyfnan and Penmynydd Community Councils oppose all four proposed routes from Wylfa to Pentir. Additionally, CPRW, Cwm Cadnant Community Council, Cyngor Cyndithas Llanfaethlu a Llanfwrog and Snowdonia National Park Authority disagree with the use of an overhead line.
- 1.2.14 Several stakeholders commented that National Grid must regard designated or sensitive areas and the impact an overhead line could have on biodiversity:  
*“Ecology - large numbers of wildfowl, including the Red Listed Bittern move between Llyn Coron, Llyn Padrig and Malltraeth and are all vulnerable to striking pylons.”* (Aberffraw Community Council)
- 1.2.15 CPRW Anglesey noted that an additional overhead line would contribute to *“the present ugliness”* of the existing overhead line. Whilst Cwm Cadnant Community Council stated that the existing overhead line is a *“blight on the landscape”*, particularly across the Menai Strait. This view is supported by the Federation of Small Businesses, Ynys Môn branch:  
*“...I am minded to confirm the groundswell of opinion that comes down heavily against the proposal for the erection of any more electrical power carrying pylons in this area. When I say more, I can assure you that most people will tell you that they feel the existing ones should never have been erected, and it is extremely disappointing to learn that in any case you do not intend to remove these, but rather retain them, and thereby greatly, and mindlessly in their view, exacerbating the situation.”* (Federation of Small Businesses, Ynys Môn branch)
- 1.2.16 CPRW Caernarfonshire pointed out that the Countryside Rights of Way Act (2000) requires infrastructure developments to conserve and enhance the natural beauty of designated areas and safeguard their settings, and noted that *“there are few more devastating sources of landscape damage than 50m high pylons”*. It concluded that the impact to the landscape could be eliminated through undergrounding or a subsea option.  
*“For a massive project such as this, with a lifetime extending over several generations, we expect at the minimum a neutral landscape impact, with no further intrusion of overhead lines, and we seek in addition some landscape gain whereby some of the damage caused by the erection of overhead transmission lines 50 years ago is rolled back, particularly where these affect the settings of designated landscape areas.”* (CPRW Caernarfonshire branch)
- 1.2.17 Several stakeholders expressed concerns relating to the effect the Project would have on the local economy, particularly tourism, noting that more overhead transmission lines would result in a negative impact on the landscape and will ultimately have a detrimental effect on the tourism industry. CPRW Anglesey branch questioned whether National Grid has factored the financial loss from tourism into its calculations for the extra cost of placing the lines subsea.
- 1.2.18 CPRW Anglesey branch asked what the impact on property value of National Grid’s proposals will be within 200 metres of an overhead line, such as the impact on Llanfairpwllgwyngyll.
- 1.2.19 A number of stakeholders commented on the issue of compensation and how people can be protected from compulsory purchase with one respondent commenting that *“financial compensation is unlikely to adequately mitigate any loss of income or goodwill”*.
- 1.2.20 Ynys Môn Ramblers Group expressed concern about the effect an overhead line would have in crossing public footpaths.
- 1.2.21 The Environment Agency Wales noted that groundwater and contaminated land are important considerations for National Grid to consider.
- 1.2.22 **Undergrounding**
- 1.2.23 A number of stakeholders noted that they would like to see the entire route undergrounded. If not, National Grid should consider putting the route underground at designated or sensitive areas. In line with this, several stakeholders called for National Grid to underground the existing overhead line at the Menai Strait to reduce impacts to an acceptable level. Snowdonia National Park is opposed to any new overhead lines through Snowdonia and would like consideration to be given to undergrounding existing sections through the National Park (such as the Dwyrdd Estuary).

- 1.2.24 CPRW Caernarfonshire branch suggested that existing overhead lines should be placed underground, particularly where they will be made almost redundant, such as the existing Pentir-Trawsfynydd lines, or where they affect the setting of designated landscapes, including Snowdonia National Park and the AONBs in Anglesey and Gwynedd. CPRW Caernarfonshire added that the modern design of the pylons would not minimise the visual impact of these areas. CPRW Anglesey branch also commented that designated areas, such as the AONBs at the northern and Menai Strait coasts and landscape conservation areas in the centre of the island would be affected.
- 1.2.25 CCW commented that as all route corridor options for Wylfa-Pentir cross the Anglesey Coast AONB, Menai Strait and Dinorwig Historic Landscape, the costs of undergrounding and tunneling in these locations should be included in the capital cost of National Grid's preferred option.
- 1.2.26 Several stakeholders cited areas National Grid has already undergrounded in the UK. For example, CPRW Caernarfonshire Branch refers to examples of transmission lines being placed underground at the Olympic Park in London and National Grid's decision to route underground in the Glaslyn Estuary.
- 1.2.27 Reference was made to existing discussions between National Grid and Ofgem regarding undergrounding.
- 1.2.28 **Subsea option**
- 1.2.29 Several stakeholders identified a preference for a subsea connection citing a reduced negative impact on tourism, the environment, health and well-being as reasons for this preference. Specifically, Ynys Môn Ramblers Group believed that the route should be subsea from Wylfa across the Menai Strait, while Snowdonia National Park Authority suggested a subsea option from Wylfa to Deeside.
- 1.2.30 Similarly, CPRW and CPRW Caernarfonshire branch identified that a subsea connection is possible since the distance is short and National Grid has indicated that technical issues are soluble. Further, CPRW Caernarfonshire Branch noted the subsea option would be the most direct route:
- "Since at least half the energy to be transmitted would be generated offshore, keeping it offshore as a subsea link direct to the centre of consumption appears a more appropriate solution than a land route."* (CPRW Caernarfonshire)
- 1.2.31 Additionally, CPRW Caernarfonshire opposes the preliminary preferred option (option 3) and instead prefers Option 1, which comprises three subsea HVDC circuits between Wylfa and Deeside. It feels Option 1 would minimise further impacts to the landscape of Anglesey and Gwynedd.
- 1.2.32 Môn a Gwynedd Friends of the Earth commented that a subsea option would have its own environmental consequences, stating that this option still merits further consideration. It commented that the construction of a new converter station near Pentir for the Element Power Greenwire project would negate one stated disadvantage of putting the HVDC subsea.
- 1.2.33 Llanddyfnan Community Council commented that the arguments against a subsea route are not strong. Further stakeholders commented that National Grid has not considered this option fully enough.
- 1.2.34 With respect to existing infrastructure, stakeholders commented on the opportunity to remove the existing 132 kV or 400 kV lines.
- "Constructing a subsea route would render the existing Wylfa-Pentir-Trawsfynydd transmission lines substantially redundant enabling them to be either removed or at the minimum their impact significantly reduced. An enlightened approach to the subsea option therefore offers the possibility of removing an existing blight on the landscapes of the Anglesey AONB and those landscapes close to or within the Snowdonia National Park and restoring them to their former status."* (CPRW)

1.2.35 Examples were provided of subsea transmission being used or considered in other projects, including the Heysham-Sellafield link in the UK and connections from France, Ireland and Iceland. Similarly, Môn a Gwynedd Friends of the Earth stated that the Element Power Greenwire project plans to connect the Republic of Ireland with National Grid at Pentir and Pembroke to access surplus power from Irish onshore wind farms.

1.2.36 Several stakeholders discussed the costs of a subsea route, noting that it is affordable in the long term when National Grid takes into account other factors such as lifetime costs, environmental costs, mitigation costs, mitigation costs of other options, or the spread of costs across electricity consumers.

*“As objectors, we would argue that the company’s efforts to provide the connection between Wylfa and the national grid network “on the cheap” is primarily driven by its need to boost share price performance and maintain strong dividend payments for shareholders. However, if costs are shared between consumers and shareholders, then the undersea option becomes even more affordable.”* (Llanbadrig Community Council)

#### 1.2.37 **Alternative options**

1.2.38 Wylfa PLG stated *“it suffices to connect Wylfa and Centrica”*, citing previous examples of double circuit faults and suggested that a third route to Pembroke should have been part of National Grid’s preferred option as this would make the system more robust and less at risk of losing 7,000MWe.

1.2.39 Several stakeholders noted specific technologies without a clear indication of technological preference. For example, RSPB discussed the impact that both overhead and underground routes could have on bird populations.

*“Both methods can result in habitat change and loss. The footprint may be relatively small or narrow, though effects could be more widespread where development interferes with hydrological patterns or flows on wetland or peatland sites.”* (RSPB)

1.2.40 A small number of stakeholders discussed specific aspects of options 1, 2, 3, 4 and 5, as laid out in the SOR. These comments tended to focus on technical aspects or, particularly in the case of options 1 and 2, the level of impact for example, on marine life and sensitive marine areas.

*“We do not have any principle objections to any of the proposed strategic routes; however, we acknowledge that the least invasive environmental approach would be offshore HVDC circuits. Marine cable routes should not be dismissed based on the conservation status of Liverpool Bay SPA, the Dee estuary or the marine SAC at Pembrokeshire...we suggest further assessment work is required on at least, Option 1 and 2, with Option 2 being amended to include a possible direct marine route to Milford Haven substation.”* (Environment Agency Wales)

1.2.41 Other comments related specifically to the common works required for options 3, 4 and 5, and on the higher generation scenario.

*“We note that in the high generation scenario case that includes a 5th HVDC connection to Pembroke, there will be no grid planning scenarios under which the new nuclear reactor would be connected solely to an HVDC connection and therefore appears to offer a solution for both north Wales and the wider grid system network.”* (Horizon Nuclear Power)

1.2.42 A number of stakeholder organisations opposed either the SOR overall or all of the proposals resulting from it. Other comments were more conditional, for example agreement in principle with parts of the SOR but the suggestion that a subsea option would preclude the need for the additional works.

*“We argue for the subsea option direct from Wylfa to Deeside, which we assume would remove the need for upgrading the existing underground link across the Glaslyn Estuary. Nevertheless, we have a few comments on the proposals.*

*Were the onshore route to be adopted, we would support the proposal to retain an underground route over the Glaslyn Estuary, thus sustaining the principle achieved 50 years ago when the existing underground line was installed.”* (CPRW Caernarfonshire Branch)

#### 1.2.43 National Grid's cost assessment

1.2.44 Several stakeholders noted that cost should not be the primary factor in determining the preferred strategic option. Cwm Cadnant Community Council suggests that the area's recognition as being of high environmental value and a major tourist destination should be considered in addition to cost.

1.2.45 CPRW Caernarfonshire branch suggests National Grid should use studies indicating that people place a significant economic value on the landscape in its decision-making process, and criticises National Grid for not putting an explicit value on the landscape. Furthermore, National Grid should consider the entire life of the project when calculating costs, as this would result in a smaller annual cost for UK households while factoring in additional costs, such as protecting the local landscape and the environment. The need to consider local economic benefits is highlighted by the Isle of Anglesey County Council.

*"Notwithstanding comments about the positive impacts of an under sea or an under sea/overland option, if a purely overland option is taken forward further work needs to be carried out by National Grid on strengthening the economic benefits that this project can have for residents and businesses on Anglesey. It is hoped that this will provide long term employment and training opportunities for the residents on Anglesey."* (Isle of Anglesey County Council)

1.2.46 CPRW Caernarfonshire Branch also stated that this project would have an impact on several generations, and therefore National Grid should consider the long term effect of its decisions and not be influenced solely by the current economic climate. Similarly, Cwm Cadnant Community Council and CPRW Caernarfonshire suggest that National Grid should take a long-term, multigenerational perspective on the impact on the landscape and the environment in general that its proposals would have.

1.2.47 CPRW Caernarfonshire branch, CPRW Anglesey branch and Cwm Cadnant Community Council acknowledged the higher costs for placing the lines subsea, yet still preferred this option. CPRW Caernarfonshire observed that when spread across the Project's 40-year life span, the annual cost for a subsea connection would equate to approximately 60 pence per household in the UK, which is thought to be affordable.

1.2.48 Cwm Cadnant Community Council and CPRW Caernarfonshire branch commented that Anglesey residents are paying more, both financially and in terms of the cost the Project would have on the local landscape, compared to the rest of the UK. Additionally, CPRW Caernarfonshire branch maintained that all UK consumers should pay for the cost of reducing further landscape intrusion in North Wales.

1.2.49 Malltraeth Ymlaen stated a preference for a subsea connection but agreed with the preliminary preferred option because of the cost difference between placing the lines overhead and subsea.

1.2.50 CCW stated that the inclusion of capital costs of underground cables/tunnel in key locations would reduce the differential estimated capital cost between the preferred option and other options.

*"It is evident that such substantial mitigation will not be required for other options. In our opinion, the estimated cost of the preferred option in the Strategic Options Report is the cost of a project which is unlikely to be consented within the policy framework set out in the National Policy Statements EN1 and EN5. It is therefore not a valid comparison. Inclusion of appropriate mitigation costs could alter the conclusion on the balance between benefits and disbenefits set out in the conclusions of the Strategic Options Report."* (CCW)

1.2.51 Stakeholder comments expressed overall challenges, particularly in relation to the cost of the subsea option and lifetime or comparative costs.

*"...the report states that "Lifetime cost estimates include the capital cost estimates and also take account of the transmission losses and maintenance costs for transmission equipment over a 40 year lifetime". However, for the options under consideration, we note that the life time costs quoted include only the capital cost of what are described as the New Circuits, and not the Total Capital Cost...This means that in the case of Option 1, for example, the Lifetime Cost includes that of HVDC cables and the converter stations but not the (relatively small) costs of connections. While for Option3, Lifetime costs do not include any of the 'Common Works' items."* (CCW)

#### 1.2.52 **Need Case**

- 1.2.53 CCW acknowledged that the proposed new nuclear power station at Wylfa, requirements of Round 3 wind generation and proposals for other large scale electrical power schemes in the region, called for National Grid to reinforce the transmission network. However, concerns were raised that the estimated capacity requirements on which the Need Case is based do not take sufficient account of other new proposals for which connection offers may already have been made, or that may arise in the future. It believes National Grid is taking a narrow view of the options that should be considered as solutions to the capacity requirement problem.
- 1.2.54 CCW recommended that National Grid start to *"back-check at each stage to see if any new information exists that would have an impact on the best technology or route"* (quote from National Grid's *Our approach to the design and routeing of new electricity transmission lines*, 2012), and reconsider the Integrated Marine Option discussed at the Key Statutory Consultee Workshop on 28 July 2011.
- 1.2.55 CCW also highlighted that in the SOR it states that for a 6.6 GW scenario, the preferred option is likely to be the preliminary proposed option which would also include an HVDC link connecting Wylfa and Pembroke. As National Grid already has contractual obligations to connect the 1GW Greenwire project, CCW expects that the optioneering process and SOR should be based on the 6.6 GW generation scenario and the impacts and relative merits of options A and B (i.e. a fully offshore option or a mixed onshore and offshore option), and questions the basis and validity of the SOR given this situation. It highlighted that the Mainstream Energy Bridge project may result in requirements for further reinforcement and a different balance between options. The higher generation scenario should have been the basis of the optioneering and fully assessed.
- 1.2.56 Furthermore, CCW stated that it appeared the SOR is not based on current demand and contracted obligations; *"the chosen Preliminary Preferred Option is the same scheme as that discussed with CCW in early 2010, prior to the commencement of the Options Appraisal Process"* (CCW) and there has been no evidence of any back-checking. *'Therefore, there is concern that if marine options are effectively 'parked' at this stage, they will remain parked for the duration of the process. As more time and money is invested into National Grid's preliminary preferred option, abandoning it seems less and less likely, with a possible outcome of both onshore and offshore projects being required'.*

#### 1.2.57 **Engineering and design**

- 1.2.58 Several stakeholders expressed concern regarding the construction process. These concerns include: pollution of controlled waters from waste products; party wall issues and buried services searches; interaction with bogs, wetlands and rocky outcrops; poor transport infrastructure, traffic disruption and access (for example across level crossings); disruption to the surrounding environment due to specific processes or methods.
- 1.2.59 The need to mitigate construction impacts was also mentioned by the NFU as it had concerns about the maintenance of National Grid's equipment on farming land.
- "Following consultation with farmers in other areas who already have pylons on their land, we would wish to highlight the potential for weed burdens to build quite considerably under pylon bases. These areas are not accessible to efficient means of weed control and will potentially lead to more labour intensive methods, increased management costs and other problems associated with weed control."* (NFU)
- 1.2.60 Comments regarding design from stakeholders noted that alternative pylon designs may not mitigate visual impact. Additionally, one stakeholder expressed opposition to the new T-pylon. There were also comments regarding HVDC technology and series compensation equipment, from Horizon Nuclear Power and CCW.
- #### 1.2.61 **Health, safety and security issues**
- 1.2.62 Comments regarding general health concerns were received, two regarding electromagnetic fields (EMFs) and health and one specific concern about children's health. Additionally, comments were received on the interference with communications or the phone network with respect to emergency services (North Wales Fire and Rescue Service) and safety implications for farmers such as interference with farm machinery (NFU).

### 1.2.63 **West Gwynedd and Glaslyn Estuary**

1.2.64 Snowdonia National Park Authority highlighted that it “*strongly supports*” National Grid’s preferred option of undergrounding through the Glaslyn Estuary section. Followed by the National Trust, CPRW Caernarfonshire branch (which added that the route underneath the Glaslyn Estuary would not be necessary were a subsea route to be chosen) and Ffestiniog Railway Company stated that they are in support of undergrounding across the Glaslyn Estuary and noted the importance of preserving the landscape in this area “*to maintain the existing panoramic view in an area where tourism is vital to the local economy*” (Ffestiniog Railway Company).

1.2.65 Welsh Highland Railway Ltd expressed concerns about the need to maintain uninterrupted service on the Welsh Highland Heritage Railway, including during future plans to develop the railway. It went on to say that it supported the proposed underground connection across the Glaslyn Estuary in principle (as well as supporting in principle a new substation in West Gwynedd) but is concerned about possible adverse impacts of the new 400 kV line proposal between Wylfa and Pentir. It expressed hope that the views in the area will be maintained, particularly for the benefit of the local tourism industry, and expressed doubt that financial compensation would mitigate against loss of income or goodwill from customers. The missed opportunity to coordinate with other projects was also mentioned:

*“...it is unfortunate that opportunities have not been taken to co-ordinate routing and construction with those of other recent utilities and transport infrastructure projects, resulting in the loss of potential to minimise land take and disruption.”* (Welsh Highland Railway Ltd)

1.2.66 CCW explained that it supports the proposal for underground cables across the Glaslyn Estuary and stressed that firm commitment is needed from National Grid not to use overhead lines in this area. CPRW Caernarfonshire branch also expressed a similar view, stating:

*“Were the onshore route to be adopted, we would support the proposal to retain an underground route over the Glaslyn Estuary, thus sustaining the principle achieved 50 years ago when the existing underground line was installed.”* (CPRW Caernarfonshire Branch)

1.2.67 The Isle of Anglesey County Council, however suggested that the Glaslyn area is being given special treatment and expressed concern that Anglesey has not been given the same consideration.

### 1.2.68 **Policy**

1.2.69 Stakeholders identified the following policies or guidance as relevant to this project:

- Anglesey Landscape Strategy Update 2011
- Anglesey UDP; Conservation of Habitats and Species Regulations, 2010
- Countryside Act 1968
- Countryside & Rights of Way Act 2000
- CCW's LANDMAP landscape data
- EC Birds Directive; Electricity Act 1989; (current) Energy Bill
- Environment Act 1995
- Environmental Assessment Regulations, including EIA Directive and requirements of EIAs and SEAs; European Landscape Convention
- Gwynedd Landscape Design Guide
- Gwynedd Structure Plan
- Gwynedd Unitary Development Plan; Habitats Directive
- Habitat Regulations Assessments
- Hobhouse Report, 1947
- Issuing of licenses to disturb protected species; (proposed) Joint Unitary Development Plan
- Landscape Character Assessment Guidance for England and Scotland Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity
- Local Biodiversity Action Plan
- Natural Environment and Rural Communities Act 2006
- National Parks and Access to the Countryside Act 1949
- National Infrastructure Directorate (and IPC)



- National Planning Policy or National Policy Statements relating to energy and energy infrastructure (primarily EN-1 and EN-5 (with particular reference to the Holford 'Rules') as well as EN-6)
- Planning Act 2008 and relevant planning restrictions
- Protection of Badgers Act 1992
- Railways Act 1993
- Water Framework Directive
- Welsh Government National Planning guidelines and policies
- West of Wales Shoreline Management Plan
- Wildlife and Countryside Act 1981
- Ynys Môn Local Plan

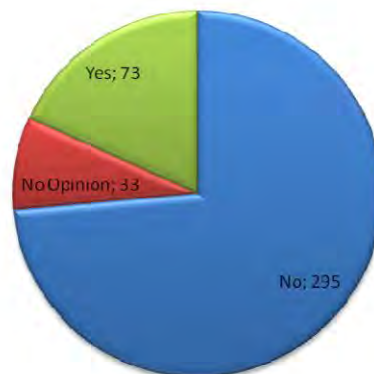
### 1.3 Analysis of responses from the public

1.3.1 Question one on all three feedback forms asked respondents; 'Do you agree with the preliminary findings of National Grid's Strategic Options Report?'

1.3.2 478 members of the public responded to this question through the three feedback forms. The results, shown in graph 2 below, identified that the majority of respondents did not agree with the findings in the SOR. Where geographical differences occur these have been drawn out in the analysis.

#### 1.3.3 Graph 2 - Public response on agreement with Strategic Options Report

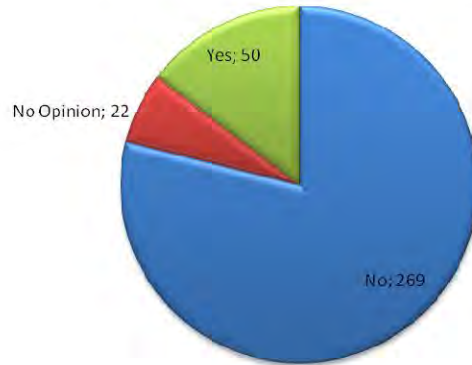
**Public Response on Agreement with Strategic Options Report**



1.3.4 The overall response (401 responses in total) did not represent the results from each package. The response for the Wylfa-Pentir consultation (341 responses – 85% of the total), shown in graph 3 below, influenced the overall response, with the majority of respondents not agreeing with the preliminary findings of National Grid's SOR. The results from the individual packages are also set out below. Graphs 4 and 5 show that for West Gwynedd (33 responses – 8% of the total) and Glaslyn Estuary (27 responses – 7% of the total) packages, the option 'no' was not the majority option chosen. These charts show the completed Feedback Forms, and do not take into account any responses received via postcard, which did not correspond to the same questions as the Feedback Forms.

1.3.5 Graph 3 – Wylfa to Pentir response on agreement with Strategic Options Report

**Wylfa to Pentir Response on Agreement with Strategic Options Report**



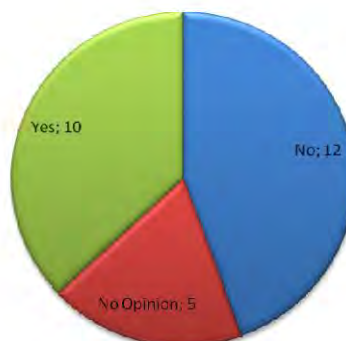
1.3.6 Graph 4 – West Gwynedd Response on Agreement with Strategic Options Report

**West Gwynedd Response on Agreement with Strategic Options Report**



1.3.7 Graph 5 – Glaslyn Estuary Response on Agreement with Strategic Options Report

**Glaslyn Estuary Response on Agreement with Strategic Options Report**



- 1.3.8 National Grid received 1,057 pre-printed postcards. The postcards were headed, in Welsh and English; *“NO PYLONS! Having my say on pylons!”*
- 1.3.9 951 respondents ticked the postcard statement; *“I am against National Grid’s option of pylons for the transmission of electricity across North Wales”* and 881 respondents ticked the postcard statement *“I support subsea cables from North Anglesey.”*
- 1.3.10 Taking into account the 951 respondents who identified on the postcards that they were; *“against National Grid’s option of pylons for the transmission of electricity across North Wales”* along with those who answered no to question one on the feedback form, 1,246 respondents (92% of respondents) were against/did not agree with the findings of the SOR.
- 1.3.11 Question two on all three feedback forms asked respondents to; *‘Please provide reasons for your answer, and any other comments on our Strategic Options Report’*. Of the 401 that answered ‘No’ to question 1, 276 respondents provided their reason for answering ‘No’. The following responses were received from the public through the Wylfa-Pentir, West Gwynedd and Glaslyn Estuary Feedback Forms as well as through other formats.
- 1.3.12 **Strategic Options Report**
- 1.3.13 Several members of the public expressed their opposition to pylons and overhead lines. These tended to refer to Anglesey, Gwynedd or the overall project area; in a few cases the opposition was specifically related to certain places in the project area, primarily the Menai Strait, as well as the Gwynedd and Dwyryd estuaries and Snowdonia.
- “It is concluded that another overland 400 kV Supergrid Transmission Line overhead across the Straits would be intrusive and unacceptable to the community at large regardless that it provided the cheapest technical solution.”* (User ID 690)
- 1.3.14 A number of respondents stated that they oppose or challenge the SOR on the way in which it had been carried out, as subsea and underground options were not included. Some respondents commented that inadequate detail and options were provided. However, a number of respondents expressed support for the SOR, noting that all options had been well-considered and explained and that the preferred option makes sense.
- 1.3.15 *“With due consideration to cost and impact in my opinion the preferred option is the best choice.”* (User 58)
- “The SOR is flawed in not fully investigating the subsea option and excluding from its scope consideration of the works that might be required to meet the higher generation scenario (para.15.27).”* (User ID 694)
- 1.3.16 Several respondents said there were already too many overhead lines and pylons in the area and that they did not want any more, whilst others were concerned about how new overhead lines would interact with proposed wind farms, tidal options, or future transmission lines (should they be required).
- 1.3.17 **Route corridor proposals**
- 1.3.18 These responses related to the free text field of the SOR question of the Stage One Consultation feedback form. Most responses relating to route corridors were attributed to the relevant section of the feedback form and are found in chapter 7 of this Report.
- 1.3.19 Several respondents opposed all route corridors, all pylons and overhead lines, largely due to the visual impact on the landscape and the ramifications this would have for tourism and the local economy and on the views and amenity of local residents. A number of respondents challenged the route corridor selection process used by National Grid.
- 1.3.20 Several respondents referred to specific corridors in their comments. One respondent opposes additional lines near the existing blue and orange route corridors and one respondent opposes all proposed routes and notes that Cemaes Primary School is located on the blue and orange routes. Similarly, another respondent said the visual impact of the pylons, particularly along the blue and orange route corridors, would negatively affect tourism and the respondent’s guesthouse. One respondent supports the orange route corridor as overhead lines ‘already exist within it’, while another respondent said the purple route corridor is the best option, provided there is a cable across the Malltraeth Marsh on the railway viaduct.

1.3.21 Respondents who commented on specific principles for routeing focused on the following suggestions: use the route with least environmental, visual or landscape impact; follow existing power lines; use the shortest, most direct route, or that which requires fewest pylons; use the route with least community impact.

1.3.22 Several comments were received regarding security of supply (for example more extreme weather causing overhead outages and current frequency of power cuts), as well as routeing design, existing infrastructure and routeing principles.

### 1.3.23 **Subsea or underground route**

1.3.24 The largest number of comments regarding the SOR relate to respondents' preference for a subsea or underground option as opposed to the overground option presented by National Grid. Many of the respondents want an underground or subsea option for the whole route, although some respondents do mention specific segments of the route. For example, a number of respondents said they would like a subsea route from Wylfa to Deeside or Pembroke. A few respondents want existing lines put underground, to reduce the impact of overhead lines on Anglesey.

1.3.25 Respondents' reasons for requesting subsea and underground connections are primarily because they would have less of an impact on views and the landscape, the environment, the community, the local economy and the health and safety of local residents.

1.3.26 Additional comments stated that subsea options are increasingly being implemented elsewhere in the world, are technically feasible and would favour the higher generation scenario. Respondents referred to instances in the UK where power cables have been placed underground or subsea, such as through designated areas, on Mendip Hills, from Ireland to Deeside and Deeside to Scotland and from Celtic Array to Wylfa and questioned why it was not an option in this consultation. Respondents highlighted negative experiences with overground cables, such as in Rhosgoch.

*"Using the HVDC technology will give the NG a chance to develop this and create an opportunity for the NG to sell the technology abroad where there are great potential markets in the Far East and Japan."* (User ID 216)

1.3.27 Related comments include opposition to pylons or overhead lines (or specifically to the Wylfa-Pentir corridor options) and concern that the subsea and undergrounding options have not been properly considered by National Grid or should be the preferred option, perhaps also leading to removal of existing overhead lines and consequential environmental benefits.

1.3.28 Several respondents suggested undersea cables would facilitate future energy projects much more easily, such as allowing expansion of offshore wind farms along Wales' west coast. Furthermore, one respondent commented that a subsea connection would provide the potential to remove existing or redundant overhead cables and thus reduce impacts further.

1.3.29 One respondent noted that overground cables have less of an impact on the environment than underground cables have, which would require substantial groundwork and could contaminate the land.

1.3.30 A number of respondents discussed the cost of the subsea option, for example disputing the potential cost, or saying that by taking into account issues such as the value of the landscape and tourism the long term cost of a subsea option is worth it.

*"The additional costs overall to individual electricity users would not be unacceptably great and the benefits would be enormous. The subsea route would avoid not only further damaging power lines across Anglesey and Snowdonia but would enable some of the current lines blighting these landscapes to be dismantled."* (User ID 668)

1.3.31 Several respondents noted that undergrounding should occur in specific areas such as designated or environmentally sensitive areas, or named areas such as the Menai Strait, Glaslyn and Dwyryd estuaries (essentially the same kinds of areas where overhead lines are specifically opposed). Reasons for undergrounding included minimisation of landscape and socioeconomic impacts, although there were some concerns about the impacts of undergrounding, particularly during the construction phase:

*“The undergrounding process itself, however, will create major disruption to properties along the route as it will be a major construction exercise and take many years for the scar on the countryside to heal.”* (Various respondents)

### 1.3.32 **Alternative options**

1.3.33 A number of respondents expressed concerns regarding the impact of adding an additional overhead line and suggested alternative connection options to minimise this. These included: following the existing 400 kV overhead line in order to reduce the visual impact and upgrading the existing pylons and cable lines by adding additional lines to enable the use of the existing infrastructure for this project. Several respondents identified the opportunity to remove existing lines, either generally (for example alongside a subsea option) or in specific areas such as designated areas or across the Menai Bridge.

1.3.34 Several respondents want to see a route that is the shortest and most direct, which would minimise the number of pylons required, particularly on an overhead route. Others consider the best way to minimise the visual and environmental impact is to choose the subsea option. It was suggested that no pylons or cables should be sited near populated areas and homes. One respondent suggested using the unused Shell pipeline from Amlwch to Stanlow.

1.3.35 A number of respondents suggested alternative options. One respondent who opposes the SOR suggested that energy should be harnessed from undersea tidal currents and from building barrages across estuaries and bays.

1.3.36 Alternative overall approaches put forward include subsea or hybrid options, rejecting nuclear power generation by focusing on renewables, microgeneration and energy efficiency and suggesting that National Grid reconsider other non-overhead or hybrid options.

*“A hybrid would reduce the risks that a wholly subsea may pose in both technical and financial terms. The first nuclear reactor of a new build could use existing infrastructure with additional capacity on the developing subsea technology. This phased approach is gathering support locally.”* (User ID 649)

*“Hence the preferred alternative route solution is an overhead supergrid line at low level or an Underground Cable in specially sensitive areas. A previous good example of this type of solution is the grid line connecting Dinorwic Power Station to Pentir. This connection is underground all the way.”* (User ID 690)

### 1.3.37 **Need Case**

1.3.38 Several respondents stated that they agree with or understand the Project Need Case and that energy supply needs to be expanded (with reference to system upgrade or security of supply). Conversely, a number of other respondents challenged the Project Need Case.

1.3.39 A number of respondents challenged the suitability of nuclear power generation, either in general or specifically at the Wylfa B site. One respondent observed that should Horizon not proceed there would be uncertainty regarding the Project. Several respondents oppose Wylfa B and nuclear power in general due to safety, economic and environmental reasons. Negative experiences in other countries of new nuclear or wind generation projects were cited. One respondent noted that recent nuclear projects in France and Finland are behind schedule and considerably over-budget, whilst Danish wind farms have experienced diminishing performance from larger fields. One respondent noted that fewer countries are building nuclear power stations due to the high cost of building and decommissioning. Further to this, two respondents oppose wind generation, with one noting that *“wind turbines are a farce”*.

1.3.40 Several respondents expressed concern that Anglesey and other parts of Wales are bearing the brunt of the economic and environmental costs of new energy infrastructure compared to other parts of the UK – which they feel stand to make the most from the additional energy being proposed. One respondent said power generation should be generated closer to where it is needed so that there is no need for long and expensive transmission networks.

1.3.41 A number of respondents feel that there would be no need for new lines following the closure of Wylfa A if Wales’ renewable resources were used effectively and an energy saving programme was implemented. One respondent referred to Germany as a model for community power use.

#### 1.3.42 **National Grid's cost assessment**

1.3.43 Several respondents challenged the estimated costs for alternative options to National Grid's preferred strategic option, including a subsea or underground option and an independent verification was asked for.

1.3.44 A number of respondents feel financial cost is not the most important criterion and that other factors, such as impact on local economies, tourism, the environment, protecting landscapes, inward investment, property prices and agriculture should be factored into the estimated costs. Furthermore, respondents feel that costs should be considered over a longer timeframe. Several respondents believe that if these other factors were taken into account, the overhead line would not be the most economic option.

1.3.45 Several respondents noted that while they would prefer a subsea or underground connection, the costs could be prohibitive and would cause energy bills to rise too much. The cost of maintenance or mitigation is a concern, with one respondent noting that maintenance costs would be higher for a subsea connection. One respondent commented that money saved from a shorter overhead route could balance any extra costs from placing the cables undersea. It was also noted that maintenance costs due to extreme weather should be considered.

1.3.46 Many respondents acknowledged the higher costs for subsea and underground connections but still prefer these options. They feel that the extra cost should either be covered by National Grid, or that the cost should be spread across all energy users. Two respondents suggested that the higher costs of underground or undersea cables could be covered if subsidies for wind power were used for this project instead.

*"If it is too expensive to underground these new lines to save the landscape, then it is clear that the additional low carbon generation sites are in the wrong place."* (User ID 653)

1.3.47 One respondent questioned whether sharing capital investment with other proposed energy infrastructure projects in the area had been considered.

#### 1.3.48 **Environmental impacts**

1.3.49 Several respondents highlighted the need to be aware of the importance of designated or sensitive sites, including statutory wildlife sites and historic landscapes. There was a diverse mix of comments relating to visual, landscape or general environmental impacts; with some respondents expressing concern or asking that further consideration is needed whilst others noted that these issues had already been considered by National Grid.

1.3.50 The visual impact on designated areas and on the Menai Strait was specifically mentioned in several responses with respondents noting that the cumulative impact with existing cables, pylons, a power station and wind turbines would have a detrimental visual impact on local residents and tourists.

1.3.51 A number of respondents suggested that the visual impact could be somewhat mitigated with underground or subsea routes. Others said that visual mitigation may be achieved by hiding the lines with trees or running the lines close to existing lines. Furthermore, several respondents commented that removing the existing and redundant lines would benefit the visual impact.

*"Selection of the Preferred Preliminary Option was not informed by a full assessment of the impact upon the landscape of Anglesey...The assessment of cultural heritage, landscape and visual constraints for Preliminary Preferred Option is restricted to "the Isle of Anglesey Coastal Path ... and settlements". This substantially under-evaluates the significance of the island in landscape terms."* (User ID 694)

1.3.52 Some comments were received relating to the proposed route corridors and crossing options, opposing additional pylons in the area due to the potential impact on the landscape. In addition, two respondents explicitly stated that they are opposed to all of National Grid's preferred options.

1.3.53 Other environmental concerns raised include the impact on birds, wildlife and habitat, as well as marine life in the Menai Strait; the potential archaeological impacts at construction sites; the effect on estuaries and other water courses; the impact on cultural heritage and historic sites. Furthermore, respondents expressed concern for the effect on designated areas: AONBs, national parks such as Snowdonia, Sites of Special Scientific Interest (SSSI) and designated wildlife sites, and listed buildings and structures, such as the Britannia Bridge.

1.3.54 In relation to the corridor options one respondent noted that there may be a historical restriction to a single pylon crossing of the Menai Strait preventing a further overhead line crossing, which may have the potential to influence the Wylfa to Pentir route decision.

### 1.3.55 **Socio-economic impacts**

1.3.56 Several respondents are concerned that adding overhead cables and lines would mar the views, the landscape and amenity, resulting in a decrease in tourist visits to the area. Additionally, many respondents expressed concern about their proximity to the proposed routes, adding that the value of their homes and properties would greatly decrease and National Grid would be forced to purchase these properties. One respondent noted that one of the proposed routes would go very close to Cemaes Primary School, whilst other respondents commented that the construction of a new overhead line would negatively affect landowners and farmers.

*“The construction of new pylons and overhead lines across the Strait would certainly spoil the natural beauty of the area, thus affecting tourism and the local people’s enjoyment of the landscape.”* (User ID 84)

*“Both the Isle of Anglesey and Snowdonia are principally dependent on tourism for income - whilst you acknowledge this fact in your documentation, I see little reference to projected long-term effect post-installation of overhead cabling and local surveying suggests a potentially significant reduction in visitor numbers.”* (User ID 227)

1.3.57 For several respondents the general proximity of a specific community or of their property to a potential overhead route or routes is of concern, particularly if the presence of existing overhead lines or other visible infrastructure mean that there is a risk of cumulative community impact. Property value and the ability to sell a property, quality of life and recreation opportunities are some of the specific concerns raised by respondents. Other concerns include the longer-term impacts of overhead lines alongside the current generation’s role as custodians.

*“Overhead powerlines are cheaper in the short term, but the damage to the precious seascape and countryside, of which we are custodians is permanent.”* (User ID 148)

1.3.58 A number of respondents observed that the local community would not benefit directly from this development. Two respondents suggested National Grid should invest in specific community projects.

*“Where possible, National Grid ought to operate a programme of educational visits both to and by schools. It may additionally consider making appropriate contributions to local communities lying in close proximity to the route, such that some tangible benefit from living with pylons to the community is realised; this is commonly done in the case of, for example, local land-based wind farms.”* (User ID 73)

1.3.59 Respondents raised concerns about the cumulative impact from existing lines and wind turbines as well as future energy projects and about the impact the Project would have on future generations – particularly with regard to visual amenity.

1.3.60 Several respondents addressed pylon design, which they consider unattractive and unappealing. Pylon design, one says, should match the old ones or the present Giles Gilbert Scott pylon. Conversely, a number of respondents maintained that residents in the area are already used to, and could therefore tolerate, an additional overhead line.

### 1.3.61 **Health, safety and security impacts**

1.3.62 The impact of pylons and overhead cables on the physical and emotional health of local people was raised by several respondents. In particular, respondents raised concerns about EMFs and health, including childhood cancer and leukaemia. A couple of respondents commented on the impact EMF’s could potentially have on domestic pets and animals. Several respondents noted that pylons and cables emit buzzing noises and interfere with TV signals and radio equipment.

*“I am an OFCOM-licensed amateur radio operator, mainly in the 1.8-30MHz band, but also at others who, like most operators, invests large sums of money in this activity, which is both recreational and a service (e.g. maritime and disaster relief communication on a global basis). It is also of significant educational value, and the RSGB has, for example, recently engaged with GCHQ.”*

*Anglesey is, for the most part, a radio quiet zone in that there is very little man-made interference experienced here. I consider that the lack of such interference should be considered as part of the island's unspoilt nature, which is of course very much reinforced in terms of nature and environmental protection elsewhere. I therefore consider there is a particular responsibility of the National Grid not to turn Anglesey into simply another interference-blighted region of the UK."* (User ID 73)

- 1.3.63 A number of respondents expressed concern about the general safety of overground pylons and cables. More specifically, they commented on the impact on RAF and other military planes, as well as civilian planes; severe weather; marine recreation activities in the Menai Strait and terrorism risks. It is felt that placing the routes underground or subsea would minimise these effects.
- 1.3.64 Nuclear safety (specifically related to the Wylfa site) was also identified as a concern.
- 1.3.65 **Construction impacts**
- 1.3.66 Several respondents contended that long-term construction would have a negative impact on local communities as well as on tourism, general disruption, interaction with existing wetland habitats, and concern about the impacts of associated central and local management and welfare facilities. One respondent stated that placing the route subsea would minimise this, whilst another said undergrounding the lines would limit disruption to just the construction stage. One respondent suggested constructing the secondary connection first, then taking the existing line out of service while it is upgraded. Two respondents noted that local country lanes would not be able to handle the increase in traffic.
- 1.3.67 Other respondents stated that the project, including the construction phase and containment of waste, is not low carbon with one respondent urging more "*green thinking*".
- 1.3.68 One respondent asserted that strict supervision of contractors is vital to ensure that workers adhere strictly to all the safeguards.
- 1.3.69 Two respondents agreed with overhead lines because maintenance would be easier, particularly in emergencies.
- 1.3.70 A request was received for more information on the planned works (for example increases in the scale of pylons) proposed for existing networks.
- 1.3.71 Several respondents discussed design issues, such as concern that any new pylons would be higher than existing ones and thus cause more environmental or landscape damage, or would require large foundations. One respondent suggested that unusual pylon designs could actually enhance tourism by attracting visitors to the area. There were also comments on the need for more research into HVDC and the suggestion that more frequent weather extremes will lead to higher maintenance costs for overhead lines.
- 1.3.72 **West Gwynedd proposed substation**
- 1.3.73 Comments specific to the West Gwynedd element of the SOR noted that respondents understand the need for a substation and that they are satisfied potential visual and environmental impacts have been taken into account.
- "I fully understand the need for this substation so as to "free" the second circuit between Trawsfynydd and Pentir and still provide a secure supply to West Gwynedd."* (User ID 35)
- 1.3.74 Other respondents stated that the SOR had been well presented and analysed, that they like the suggestion of underground cable (presumably to the existing 132 kV network) and the fact that the substation would be local to the current connection. One respondent did not express a preference for a substation site as they felt that not enough information about the impact on biodiversity in the area had been provided.
- 1.3.75 With respect to the substation, one respondent asked that visual mitigation and the potential impacts on health be taken into account.
- 1.3.76 One respondent expressed specific concern about disruption for residents of Gwynedd and questioned what advantages, if any, the Project would bring to local people.



### 1.3.77 **Glaslyn Estuary proposed underground connection**

1.3.78 Several respondents said that they support the undergrounding of cables in the Glaslyn Estuary area, with reference to the fact that the existing cable is underground. Respondents also noted that they would prefer not just the Glaslyn Estuary area but the whole route to be underground.

*“I am happy about the underground connection at the Glaslyn Estuary, especially in view of the present one being underground and the large visual impact an overhead connection would have in this area.”* (User ID 733)

1.3.79 Furthermore one respondent suggested that National Grid shouldn't waste further time considering other options for this area.

1.3.80 Other comments specifically on the Glaslyn Estuary connection include: a suggestion that National Grid seems uncertain about the precise route and that, once it has found a route acceptable to the public and to National Grid, the (costly) upgrade would be acceptable; the suggestion that there should be a connection running opposite the Porthmadog bypass; concern about the presence of a SSSI, which the respondent suggests could cause issues including local protests.

### 1.3.81 **Policy**

1.3.82 Comments regarding overall UK energy policy and specific generation options, including Wylfa B, were raised. Comments about UK energy policy and performance focusing on the benefits of various generation options (for example looking at experience in other countries) were raised, with a preference for more focus on local supply or energy efficiency, and the need to secure power in a future-proof manner.

*“21st century low carbon green generation should be accompanied by a 21st century green, efficient transmission network. This can include subsea, to limit the impact of overhead pylons and to accommodate the large Irish and Euro interconnectors. Domestic supplies are likely to be generated close to shore lines or offshore therefore subsea can be an asset.”* (User ID 649)

1.3.83 One respondent commented that National Grid should use this project to lead the way in HVDC technology and the need to consider long-term effects on GDP as part of its assessments. One respondent referred to National Grid's 'Creating a Sense of Place' design guidelines with specific reference to the purple route.

## Appendix B: Wylfa-Pentir responses

## APPENDIX B Wylfa-Pentir responses

### 1.1 Overview of analysis

1.1.1 The Stage One Consultation Wylfa to Pentir feedback form (Appendix K) was split into six sections; A, B, C, D, E and F. Section A *'About You'* asked for information about the respondent completing the feedback form. This information has been analysed in chapter 12 of the North Wales Stage One Feedback Report. Section B *'Strategic Options'* is analysed in Appendix A, and Section F *'Your Views on Our Consultation in North Wales'* has been analysed in Appendix E. This section focuses on the responses to section C (Route Corridor), section D (Menai Strait crossing options) and section E (sensitive locations) of the feedback form (and other formats) which specifically asked for feedback on the proposed overhead connection between Wylfa and Pentir.

### 1.2 Analysis of responses from stakeholder organisations

1.2.1 The following stakeholder organisations responded to the Stage One Consultation on proposals for a new overhead connection between Wylfa and Pentir (12 responses were received via the feedback form and other comments were received via emails and letters).

- Aberffraw Community Council
- CCW
- CPRW
- CPRW Anglesey Branch
- CPRW Caernarfonshire Branch
- Cwn Cadnant Community Council
- Cyngor Cymdeithas Llanfaethlu a Llanfwrog/Llanfaethlu a Llanfwrog Community Council
- Cyngor Cymuned Llanddaniel-fab/Llanddaniel-fab Community Council
- Llanddyfnan Community Council
- Malltraeth Ymlaen
- Môn a Gwynedd Friends of the Earth
- Penmynydd Community Council
- Snowdonia National Park Authority
- Welsh Highland Railway Ltd
- Wylfa PLG
- Ynys Môn Ramblers Group.

#### 1.2.2 Route corridors

1.2.3 Question 3 of the Wylfa-Pentir feedback form asked respondents; *'Of the route corridors identified across Anglesey, which one do you feel National Grid should take forward?'* Options orange, purple, yellow and blue were given. The respondents were then asked under question four to; *'Please provide your reasons for selecting this route corridor.'*

1.2.4 Four stakeholders selected an option using the feedback form; CPRW and Malltraeth Ymlaen selected the orange route corridor, Llanfaethlu a Llanfwrog Community Council selected the blue route corridor and Môn a Gwynedd Friends of the Earth selected the yellow route corridor.

#### 1.2.5 Orange route corridor

1.2.6 CPRW Caernarfonshire Branch, Llanfaethlu a Llanfwrog Community Council and CPRW expressed support for the orange route corridor only after stating a preference for underground or subsea cables. Llanddaniel-fab Community Council and CPRW Anglesey branch opposed all options but deemed the orange route the most acceptable:

*"Whilst totally opposed to any selection of corridor across Anglesey we will retain a fallback position by defining what we feel would be the least damaging route."* (CPRW Anglesey branch)

- 1.2.7 CPRW Caernarfonshire Branch felt that it was important to underground in the most sensitive areas and said that the orange route would be the most practical for this as it is the shortest and least populated. It also suggested that National Grid should use the opportunity to put the existing overhead line underground at the same time. Llanfaethlu a Llanfwrog Community Council preferred the orange (or blue) corridors because they are the most direct routes, but also added that the route should be undergrounded where it runs close to the AONB.
- 1.2.8 Both Malltraeth Ymlaen and CPRW felt that the route should follow the existing corridor:  
*“Adopting any route other than the existing corridor would result in a line of pylons through unspoilt parts of Anglesey.”* (Malltraeth Ymlaen)
- 1.2.9 CPRW Anglesey further suggested that when the route reaches the A55 route, it should continue south to cross the Menai Strait to the south of the crossing options area. CPRW Anglesey also asked that the existing pylon line be diverted along this same route to enable pylons near to Llanfairpwllgwyngyll and along the Britannia Bridge to be removed. It added that undergrounding is necessary on the Gwynedd shore to protect views from the Anglesey AONB towards Snowdonia.
- 1.2.10 CCW noted that on balance the orange route corridor is the least damaging option as it is the shortest, can be placed far from the closest part of the Anglesey AONB, and that the rolling landscape and presence of woodland areas and other vegetation provides the greatest potential for the visual impact mitigation of two overhead lines. It expressed confidence that a route can be found within the orange route corridor that would not have significant impact on the natural heritage of the area.
- 1.2.11 As with other corridors, CCW considered National Grid’s assessment of visual sensitivity of the area to be of insufficient detail, with particular mention given to the Anglesey LCA Dulas Bay Hinterland and views from the nearby Anglesey AONB and Amlwch and Parys Mountain Registered Historic Landscape. Also, as with the yellow and blue route corridors, CCW was concerned about the potential for sky-lining along a prominent ridgeline, and the possibility of cumulative visual impact with the existing 400 kV line. It also added that the pylons would cross the grain of the landscape and that, while landscape sensitivity has been considered, this does not include visual sensitivity.
- 1.2.12 The Welsh Highland Railway Ltd was concerned about the impact of the orange route corridor on its land and objected to part of the orange route corridor south of the road and bridleway at Penmount Farm. It hoped that the route alignment would be designed to minimise impacts on buildings, playing fields and sites of historic or nature conservation interest in the area.
- 1.2.13 Môn a Gwynedd Friends of the Earth opposed the orange route corridor due to the potential impact on migrating birds moving between the Talwrn area and Cors Erddreiniog. It cited species including hen harriers, bitterns and corncrakes. The Anglesey and Llyn Fens Ramsar site was also an area of concern for this stakeholder.
- 1.2.14 **Blue route corridor**
- 1.2.15 Llanfaethlu a Llanfwrog Community Council preferred the blue (or orange) route corridors because they are the most direct routes, adding a caveat that the route should be placed underground.
- 1.2.16 Môn a Gwynedd Friends of the Earth wished to draw National Grid’s attention to the Cors Bodwrog SSSI in the blue route corridor area and its importance for birds such as Bewick’s swans flying between the SSSI and Tre-Ysgawen Hall. Although CPRW felt that choosing the blue route would minimise the impact on the Anglesey AONB, it felt this was overshadowed by the landscape impact that would come from a second, separate overhead line:  
*“The more central blue route would impose less on the AONB, but it would be undesirable to open up a second, separate corridor of major landscape impact on the island.”* (CPRW)
- 1.2.17 Similarly, CCW stated greater concern for the potential visual impacts on the Amlwch and Parys Mountain Registered Historic Landscape and on the area of central Anglesey in general. CCW described this central area as unspoilt as it lies within the Anglesey Special Landscape Area (Ynys Môn Local Plan Policy 31), and due to the absence of existing pylons or other man-made elements in the landscape.
- 1.2.18 CCW referred to National Grid’s Holford ‘Rules’, and argued that the blue route corridor would run along a *“prominent local ridgeline”*, as well as creating cumulative visual impact with the existing 400 kV line. CCW felt that the area to the east of Llyn Alaw reservoir would not allow sufficient screening of 400 kV line towers, particularly from the village of Llanerchymedd.

1.2.19 The Welsh Highland Railway Ltd objected to the part of the blue route corridor south of the road and bridleway at Penmount Farm.

#### 1.2.20 **Purple route corridor**

1.2.21 Môn a Gwynedd Friends of the Earth stated concerns about the purple corridor, mainly relating to the potential impact of pylons on migrating birds and general impact on the Malltraeth RSPB reserve and Malltraeth Marsh SSSI. Species that received particular mention include bitterns and the marsh harrier:

*“The diverse population of migrating and wintering waders and other species such as the marsh harrier warrant a high level of protection at odds with overhead power lines.”* (Môn a Gwynedd Friends of the Earth)

1.2.22 CCW expressed opposition to the purple route corridor, stating that the shorter blue or orange route corridors would be more appropriate from a landscape and visual impact perspective. It also felt that National Grid has underestimated the sensitivity of the purple route corridor landscape, and worried that the narrowness of the corridor to the east of Llandaniel Fab would restrict routeing options later in the alignment process. It also commented that the purple route is too close to the Anglesey AONB, Anglesey Coastal Path, Malltraeth Marsh and National Cycle Network. Concerns were expressed about the potential impact on views from these areas and the recreational value of these areas once pylons were placed nearby. As with the blue route corridor, CCW also raised concern about potential sky-lining along the ridge near Llandaniel Fab, stating this would be in conflict with Holford Rule 4.

1.2.23 Aberffraw Community Council described the purple route corridor as *“particularly unsuitable”* from the perspective of the Aberffraw community. It felt that the open, flat landscape would make screening of an overhead line impossible and that therefore pylons would have a detrimental effect on visual impact, particularly within the AONB. It raised concern about wildlife in the area, given the Special Area of Conservation (SAC) at Aberffraw, and the Aberffraw, Llyn Padrig and Llyn Maelog SSSIs. Particular concern was raised about the risk of pylons to birds such as the red-listed bittern.

1.2.24 The Welsh Highland Railway Ltd objected to the part of the purple route corridor south of the road and bridleway at Penmount Farm.

#### 1.2.25 **Yellow route corridor**

1.2.26 Môn a Gwynedd Friends of the Earth preferred the yellow route corridor as it follows the A55 road, although it added a caveat that any route should pass north of Malltraeth SSSI in order to minimise the impact on migrating birds. It suggested undergrounding of the cables to reduce the risk from predation by birds from the overhead cables.

1.2.27 CCW noted that this is the second longest route corridor, and its main area of concern is the part of the route that follows the A55 road. It felt that the visual sensitivity of the area of the route running alongside the road is higher than ‘low’, as assigned by National Grid, due to the views of Snowdonia for road users. Furthermore, CCW raised concern about potential sky-lining of the pylons and the cumulative visual impact with existing 132 kV routes, and as with the yellow route corridor, expressed concern regarding the proximity to Anglesey AONB, Anglesey Coastal Path and National Cycle Routes.

#### 1.2.28 **Route corridor selection**

1.2.29 Four stakeholders stated their opposition to all routes, with both CPRW and Ynys Môn Ramblers Group adding that a subsea route was their preferred option. CPRW gave examples of existing subsea connections in the region, the A5 road tunnel across the Conwy river and the Shell (UK) Ltd oil pipeline crossing at the Eastern end of the Menai Strait. Cwm Cadnant Community Council opposed the SOR and therefore did not consider the route corridor question valid. CPRW called for undergrounding of the line if an onshore route is unavoidable, specifically near to sensitive areas. Môn a Gwynedd Friends of the Earth added that undergrounding the route would minimise the impact on migrating birds.

1.2.30 Wylfa PLG disagreed with this method of route selection, suggesting instead that National Grid should propose one preferred route for comment so as to avoid blanket opposition or friction between communities. It did not select a route corridor in response to question three but requested that the route runs alongside the existing overhead line and that low-profile pylons be used.

1.2.31 Snowdonia National Park Authority expressed concern about the impact of an overground route on designated areas, particularly when combined with proposed onshore wind energy infrastructure:

*“The new overhead line, in combination with onshore windfarms and individual wind turbines which are currently being proposed, has the potential to harm the views of the mountains of Snowdonia and the hills of the Llyn AONB from many parts of the island.”* (Snowdonia National Park Authority)

- 1.2.32 CCW commented on the area south of Wylfa common to all corridors, stating that the presence of the 400 kV and 132 kV overhead lines already in the area means that the landscape is already compromised.
- 1.2.33 CPRW referenced examples of existing subsea connections in the region and stated that the cost of undergrounding the existing and proposed new overhead connection in the most sensitive landscape sections should be factored into National Grid’s decision making process.
- 1.2.34 **Menai Strait crossing options**
- 1.2.35 Question five of the feedback form asked respondents; *‘Of the options identified to cross the Menai Strait to Pentir, which one do you feel National Grid should take forward?’* options A, B, C, D and E were presented. This was followed by question six which asked respondents to; *‘Please provide your reasons for this crossing option across the Menai Strait to Pentir.’*
- 1.2.36 Llanfaethlu a Llanfwrog Community Council and Môn a Gwynedd Friends of the Earth responded to question five and both selected crossing option C.
- 1.2.37 A further ten stakeholders responded to question six along with comments received via letter or email from other stakeholder organisations.
- 1.2.38 **Subsea or underground cables at Menai Strait**
- 1.2.39 Seven stakeholders expressed a preference for placing the route across the Menai Strait underground, subsea or along the seabed, with a small number basing their crossing option decision on the assumption that this would be the case. A number of stakeholders requested that the route be undergrounded all the way to Pentir to avoid impacting on views of Snowdon and other high mountains in the area. CCW stated that the fact that no subsea option was presented to consultees inferred that National Grid wished to avoid discussion around this option, but nevertheless stated a preference for placing both the new and existing lines subsea. CCW referred to Dinorwig Pumped Storage Generation Scheme to Pentir substation which is underground.
- 1.2.40 CPRW opposed all overhead crossing options but stated that any underground option would be suitable. Cwm Cadnant Community Council felt the question was invalid given its opposition to the SOR.
- 1.2.41 CCW provided a detailed objection to the crossing options identification process. It felt National Grid had not given sufficient consideration to the impact on sensitive sites on both the western and eastern sides of the Menai Strait. It also felt that the ecological, geological, historical and cultural aspects of the crossing options landscape had not been taken into account, or had only been assessed in isolation rather than looking at the landscape as a whole. CCW expressed that the route corridor selection played an important role in which crossing options would be most suitable, and added that all crossing options would have a negative impact on the Anglesey Coastal Path.
- 1.2.42 Malltraeth Ymlaen expected National Grid to select an underground route that is technically the most straightforward as well as being the most cost-efficient.
- 1.2.43 Stakeholders emphasised the significance of the Menai Strait and the surrounding area from an environmental perspective:
- “But this is the Menai Strait section, where only a small incursion could have a large and damaging effect.”* (CCW)
- 1.2.44 CPRW called the landscape *“unique”*, and referred to its importance as a backdrop for Snowdonia and as part of the Anglesey AONB. It cited several reports referring to the area, and noted its designation as a Special (Maritime) Conservation Area as well as the plans currently underway by CPRW Caernarfonshire to re-designate the south Menai shore as a Landscape Conservation Area.
- 1.2.45 **Crossing option A**
- 1.2.46 CCW was the only stakeholder to comment on crossing option A via the feedback form. It felt that large pylons and cables in this area would have a negative impact on the views of the listed Menai and Britannia bridges, emphasising the importance of these views. It was concerned about the cumulative effect of adding to the existing overhead line that runs along the bridge, particularly if the new line does not correspond in height and size to the existing line.

#### 1.2.47 **Crossing option B**

1.2.48 CCW identified crossing option B as the option with the least adverse impact, mainly due to the existence of an overhead line in the area meaning that no new area would be impacted. However, it still believed that this option would negatively affect the landscape of the Menai Strait, as well as the setting of the Britannia Bridge, Nelson's Monument, St Mary's Church and the Marquis of Anglesey's Column (described as an important tourist attraction). CCW felt that the difference in span and height of the existing and new line would create a "confusing appearance", which it felt is in conflict with National Grid's Holford 'Rules'.

1.2.49 CPRW and Môn a Gwynedd Friends of the Earth also expressed some support for crossing option B.

1.2.50 Môn a Gwynedd Friends of the Earth listed it as its second choice, with the line running southwest of Llanfairpwll, and asked that National Grid considers using the Britannia Bridge for the crossing. It also called for undergrounding of the line across Anglesey. CPRW, after first expressing support for a subsea option, preferred crossing option B because it felt it would be the easiest to underground across the Menai Strait due to it being one of the shortest routes and because it follows the existing line. It also noted that it would affect a relatively narrow area of the AONB.

#### 1.2.51 **Crossing option C**

1.2.52 Llanfaethlu a Llanfwrog Community Council supported crossing option C because it is narrow and it connects with its preferred route corridors of blue and orange. It did however request the line be placed underground, as does Môn a Gwynedd Friends of the Earth, in order to reduce the impact on bird populations and the Llanfairpwll community.

1.2.53 CCW expressed concerns about crossing option C and focused on its potential impact on sensitive areas. These areas included the Registered Park and Gardens of Plas Newydd and Vaynol, Dinorwig Registered Historic Landscape and the area around Britannia Bridge and Y Felinheli. It also questioned the variance in width of the crossing options, raising concern that because crossing option C is so narrow, there would be little room for manoeuvre during the route alignment stage.

#### 1.2.54 **Crossing option D**

CCW felt that crossing option D was in conflict with the Holford 'Rules' because it is one of the longest options. It believed that the taller pylons required, coupled with the open landscape, made crossing option D unsuitable. It also expressed an opinion that the new overhead line would be visible along the ridgeline to the north of Bethel.

#### 1.2.55 **Crossing option E**

1.2.56 The comments made by CCW regarding the length and pylon height of crossing option D were also applied to crossing option E. It added that this route would separate Brynsiencyn Church from the rest of the village and raised concerns that views near Y Felinheli and near Caernarfon would be adversely affected.

#### 1.2.57 **Other comments**

1.2.58 Several stakeholders comments related to issues other than the crossing options. CCW commented on the substation siting area, asking whether the existing substation at Pentir could be used to secure electricity demand in the local area, rather than a new substation site being introduced in West Gwynedd. It expressed concern about the visual and landscape impact of overhead lines approaching the substation, with particular regard to the views from Snowdonia.

1.2.59 Mitigation of impacts on wildlife or habitats was also discussed by CCW, for example the need to consider protection of specific species, or the level of mitigation that may be required, and its expectation for the level of impact on designated or sensitive areas in specific locations (which in some cases is expected to be minimal).

*"We note that with regard to protected sites the summary states that all can be avoided through careful routeing. We accept that the sites themselves can be avoided but consideration may have to be given to avian issues if a route corridor is chosen that passes close to any site that has any bird feature species. There is a high probability that some protected species, habitat or biodiversity issues would need to be considered in assessing the environmental impact of this element but it is likely that effects can be adequately mitigated."* (CCW)

1.2.60 A small number of comments related to the consultation. Wylfa PLG felt that this process has led to public opposition to National Grid's proposals. CCW requested more information on the size of pylon towers and the reason why taller pylons are required for some options, as well as information relating to how the overhead lines would connect with the substation at Pentir.

#### 1.2.61 Sensitive locations

1.2.62 Question seven of the feedback form asked respondents; *'To help us reduce the effects of our proposals, we would value your opinion in identifying locations that you feel are most sensitive within any of our preferred route corridors and crossing points.'* Four stakeholders responded to this question.

1.2.63 CCW listed the Menai Strait Coastline AONB and Dinorwig Historic Landscape as sensitive locations, before referring National Grid to Annex 1 of its non-form response which contained detailed comments on all elements of National Grid's proposals and therefore was referred to throughout the report.

1.2.64 Llanfaethlu a Llanfwrog Community Council stated that it believed the whole of Anglesey to be sensitive, and is concerned about the cumulative impact of adding pylons to existing energy generation infrastructure on the island. It expressed support for subsea or underground cables.

1.2.65 CPRW Anglesey Branch chose not to specify any particular location, rather saying that the whole of the island crossing is sensitive and therefore the route should be placed underground.

1.2.66 Cwn Cadnant Community Council felt that this questions was not applicable given its rejection of National Grid's SOR.

### 1.3 Analysis of responses from the public

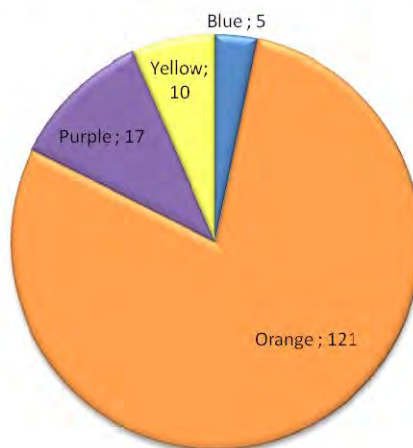
#### 1.3.1 Route corridors

1.3.2 Question three of the feedback form asked respondents; *'Of the route corridors identified across Anglesey, which one do you feel National Grid should take forward?'* Options orange, purple, yellow and blue were given. Respondents were then asked under question four to; *'Please provide your reasons for selecting this route corridor.'*

1.3.3 153 members of the public responded to this question using the Wylfa to Pentir feedback form. The results are shown in graph 1 below.

#### 1.3.4 Graph 1 – Public response to route corridor choice

**Public Response to Route Corridors Choice**



1.3.5 Responses to the feedback form and comments specific to the route corridor proposals received via non-form feedback are reported on below.



### 1.3.6 Orange route corridor

- 1.3.7 The orange route corridor received more supporting comments from members of the public than the other corridor options. The main reason given for supporting the orange route corridor was that it would follow the existing 400 kV overhead line between Wylfa and Pentir:

*"It seems preferable to have 2 lines close together rather than build a line in another part of the island which is as yet relatively unspoilt."* (User ID 108)

- 1.3.8 Respondents stated that they would prefer two lines closer together to minimise visual and landscape impact as well as the impact on communities and health (EMFs) as a whole across Anglesey. Respondents also commented that residents and businesses are accustomed to the presence of pylons in this area. One respondent recommended that the existing overhead line is strengthened to carry the new cables, removing the requirement for a second line. Some respondents hoped that the access roads used to build the existing overhead line could be utilised again, reducing the cost of construction and maintenance.
- 1.3.9 The respondents who supported this route did so as they felt it is the shortest and most direct, minimising the amount of area affected, it is the least costly, will reduce the amount of electricity lost during transmission and meets National Grid's Holford 'Rules'.
- 1.3.10 One respondent felt that as the shortest route, the orange corridor would be the cheapest which would make more money available for mitigation in sensitive areas and for compensation.
- 1.3.11 A number of respondents referred to the fact that the orange route corridor area is the least densely populated, or at least has larger areas which are sparsely populated and therefore would have less impact on communities. A few respondents raised the issue of the potential health risks associated with living close to overhead lines and there was support for reducing this potential risk. The avoidance of traffic, transport and aviation links on the west side of the island, such as the RAF Valley flight path to Snowdonia, was seen as a further reason to support the orange route corridor.
- 1.3.12 Similarly, a few respondents also stated that the orange route corridor has fewer designated areas such as SSSIs and AONB's with one respondent supporting the avoidance of the central part of the island which is referred to as *"the wildest and most isolated"* part. Two respondents hoped that if this route is chosen, care will be taken to protect the fens and wetlands in the area.
- 1.3.13 There were some comments referring to other existing or planned infrastructure in the area. A few respondents selected this route because they felt the corridor is more suitable for connecting at crossing option A, B or C. One respondent pointed out that the orange route corridor would be closer to the Celtic Array development, should it require connection in the future, whilst another favoured the orange route corridor because they believed it would be the easiest corridor to connect into Pentir substation. Another felt that, unlike in the other areas, it would not require liaison with wind farm developers, which the respondent believed could disrupt/delay the construction of the overhead line:
- "Other route corridors would involve complications i.e. the positioning of large wind turbines were planning permission granted (ref. 'Anglesey against wind turbines' on the internet.) I am sure however that you are aware of this."* (User ID 157)
- 1.3.14 One respondent preferred the orange route corridor because it is furthest from the sea. This was seen as a benefit as it reduces the risk of salt deposition on the insulators and associated transmission losses.
- 1.3.15 The orange route corridor was preferred by several members of the public who felt that an overhead line would be easier to mitigate in this area rather than other areas. They believed that the topography of the land is undulating, with more woodland areas than the other route corridors, and would therefore be better at disguising pylons. Some respondents requested that the low-profile T-pylons be used to minimise visual impact along with screening, landscaping and planting, with a few adding that the existing overhead line could also be replaced with the new T-pylon. Some respondents felt that the line should be placed as close as possible to the existing line to avoid the visual impact of two separate lines. Additionally, a number of respondents believed that the new line would be best placed either to the east or to the west of the existing line. A few respondents expressed that they hoped the existing line of pylons could be removed either during the installation of the new line, or at a later date once the infrastructure is in place.

1.3.16 Conversely, a number of respondents opposed the orange route corridor. The reasons for objection included; the proximity of the route to one respondent's property; the proximity to a caravan site; the 'flat landscape' as referred to by another respondent; and the visual cumulative impact with the wind turbines that have been proposed for the area.

#### 1.3.17 **Blue route corridor**

1.3.18 Those who supported the blue route corridor generally compared the option favourably to the orange route corridor, arguing that two separate lines would have less environmental and social impact on the environment than the visual cumulative impact of following the existing line, as the orange route corridor would.

*"If both pylon lines were in the same corridor, it could cause a possible "eyesore" on the landscape and affect people's quality of life."* (User ID 134)

1.3.19 One respondent felt that placing an overhead line away from the existing line would be safer.

1.3.20 One respondent stated that the blue route corridor is mainly farmland and less populated than other areas and is the only route corridor that does not come close to Plas Coch, a business in the area that has been subject to recent investment. Some respondents supported the blue route only if an underground/subsea option is not possible

1.3.21 Opposition to the blue route corridor was expressed alongside opposition to other route corridors. One respondent was concerned that this line would be close to their home and local holiday rental business near Llangefni and Gaerwen. Others pointed out that the blue route corridor is close to the Cefni Marshes RSPB reserve and could impact its future development, and RAF Mona. A few respondents felt that the blue route corridor would have a more negative environmental and economic impact than the orange route corridor, whilst several other respondents opposed the blue route corridor option because it could link to crossing option C, D or E, which they felt would be detrimental to the Menai Strait area.

#### 1.3.22 **Purple route corridor**

1.3.23 A number of respondents felt that an overhead line in the purple route corridor would spoil less of the landscape of Anglesey and have the least environmental effect than the other route corridors and therefore would have less impact on tourism. One respondent preferred this route as it avoids the main areas of population. Whereas the avoidance of the existing 400 kV line was welcomed by one respondent, others expressed their support for the purple route corridor by saying that it runs alongside the existing 132 kV line and therefore would minimise cumulative visual impact, with one respondent also hoping for the removal of the existing Wylfa-Penrhos 132 kV line. In terms of other infrastructure, the purple route corridor follows the existing A55 road and therefore one respondent expected it to have the least impact on environment and local amenity. One resident from the purple route corridor area fully supported the placement of overhead lines on his land. They welcomed the pylons in order to deter low-flying helicopters and other aircraft from flying near to their property.

1.3.24 One respondent who supported the purple route corridor hoped to see the new T-pylon design employed. In line with comments about the blue route corridor, a number stated a preference for subsea cables rather than overhead lines.

1.3.25 The purple route corridor was described by one respondent as the longest and would therefore be the most costly option. Additionally, many respondents felt the negative environmental and economic impact would be greater than that of the orange route. Respondents expressed concern about the impact on the landscape and views in areas such as Rhoscolyn and Cwyfan, with concern about the knock-on effect on tourism. A couple of respondents opposed the purple route corridor as they felt it would create a "*wirescape*" around the village of Llanddaniel, and a few were concerned specifically about the presence of pylons near their properties or the potential impact of construction and infrastructure works on water supplies for domestic use and farming purposes. A small number of respondents were also concerned about the proximity of the purple route corridor to the RAF Valley. Two respondents felt that the purple route corridor would likely link to cross the Menai at wider points via options C, D or E, which they opposed.

1.3.26 A number of sensitive or designated areas were mentioned, including Malltraeth, Newborough Forest and Warren, the Cefni Marshes and the bordering Anglesey AONB. Regarding the latter, one respondent pointed out that visual impact mitigation would be difficult here as screening, planting and burying the cable is not possible in a marshy area, and that tourist revenues of these areas, including associated industry and commercial venture, would be adversely impacted.

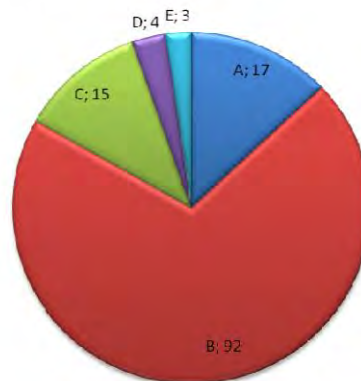
One respondent doubted that visual impact mitigation would be possible anywhere in the route corridor area given the flat landscape, and because the proposed pylons would not be in line with the ridges and valleys of the landscape.

*“The above character study refers to the extensive geological form of the area and Coedana granite rock outcrops which provide the characteristic undulating ridges and valleys that run in a south westerly to north easterly direction and which would be perpendicular to the proposed pylon route and therefore at greater odds with the overall and dominant grain of the wider landscape.”* (User ID 694)

- 1.3.27 One member of the public stated via a non-form response that the purple route has the largest number of conservation sites and that National Grid’s ecological assessment of the area was insufficient. Concern was raised about the risk of accidental bird strikes on pylons for various species, including the northern shoveler, common shelduck, bitterns and ospreys. Water voles and otters were also mentioned, and there was concern that the construction could result in habitat loss and greater risk of road deaths. Additionally, the respondent referred to a colony of bats nearby, and a population of great crested newts near Malltreat.
- 1.3.28 An alternative route corridor option was suggested, combining the yellow and the purple corridor options. The suggested route follows the existing 132 kV line from Wylfa to the former Anglesey Aluminium works and then parallels the A55 across the centre of the island.
- 1.3.29 **Yellow route corridor**
- 1.3.30 Supporters of the yellow route corridor believed that new overhead lines would have less of an impact if placed where there is existing energy or transport infrastructure. Particular reference was given to the A55 main road.
- “The first part follows the A55 and is already a man-made landscape.”* (User ID 135)
- 1.3.31 Some respondents felt that placing the proposed line parallel to the road, which also follows a railway, would minimise wider environmental impact on the rest of the island and reduce the potential impact on tourism. One respondent suggested that constructing the route near to a road would minimise transport costs. The A5025 road was also mentioned by one respondent who hoped that choosing the yellow route corridor would provide a good opportunity to improve this road for better construction and maintenance access.
- 1.3.32 In a similar vein, respondents pointed out that the yellow route corridor would allow the new overhead line to follow the existing Wylfa to Penrhos 132 kV line and therefore minimise wider visual impact. A similar argument was applied to the wind turbines in the north of the route corridor area. A few respondents also expressed hope that the 132 kV line could be removed and that any new line could utilise the shorter T-pylon design in order to minimise visual impact on the area.
- 1.3.33 One respondent supported the yellow route corridor as it does not follow the existing Wylfa-Pentir overhead line, thus providing more security of supply. Another supported the yellow route corridor because it contains the least number of sensitive areas. An alternative route corridor option combining the yellow and the purple corridor options was proposed, which follow the existing 132 kV line from Wylfa to the former Anglesey Aluminium works before paralleling the A55 across the centre of the island.
- 1.3.34 Some of the same reasons for opposing the blue and/or purple route corridors were also applied to the yellow route corridor. Respondents expressed concern that it is close to the RAF Valley and RAF Mona bases and the Cefni Marshes RSPB reserve. A few respondents believed the potential environmental and economic impacts would be greater than those of the orange route, and others that the yellow route corridor would increase the likelihood of Menai Strait crossing options C, D or E being chosen, which they did not support.
- 1.3.35 One respondent felt that, together with the purple route, the yellow route was the longest route and therefore would be the most expensive option. A small number of respondents living in the yellow route corridor area were concerned about the impact of new pylons on their view or on the success of their local business. One respondent opposed the placement of overhead lines close to the A55 route as they felt it would be an eyesore for those travelling along the road.
- 1.3.36 **Other comments**
- 1.3.37 Respondents questioned the necessity of a new line between Wylfa and Pentir, objecting either to the placement of pylons in Wales to supply electricity to England, to the connection to the proposed nuclear power station in Wylfa, or to nuclear power itself. One respondent referred to the Anglesey Manifesto by PAWB, a local group campaigning against nuclear power.

- 1.3.38 74 members of the public who responded via the feedback form opposed all the proposed route corridor options, and the majority of opposition was accompanied by the reason that the route should instead go underground and/or subsea, or made reference to their response to question two. Pylons were opposed due to the feeling that they would have a long-term impact on the landscape, cultural heritage, housing, jobs and wildlife habitats, and because some respondents felt that the economy of Anglesey relies heavily on tourism. Respondents also expressed concern about the visual, emotional, physical and health impacts of pylons. One respondent felt that all route corridors were inappropriate given the various national and international wildlife designations within the proposed routes. There was a general feeling that, even though undergrounding or subsea cables would cost more, it would be both worthwhile and acceptable in the long-term and that cost should not be a barrier to using these transmission options instead. Another respondent proposed that, since subsea was rejected on cost, route corridors should be chosen using the same criteria, and that therefore the orange corridor should be selected.
- 1.3.39 Some respondents did not express a preference for any corridor option at this stage, for the following reasons: they felt there was insufficient information available; that there was confusion over whether two lines would be needed or one would be removed; that the route corridor choice depends on whether it will be placed underground or overhead; that more clarification on where undergrounding would be used was necessary in order to select a corridor; that route corridor options set communities against each other; or because they do not see any difference between the routes.
- 1.3.40 **Menai Strait crossing options**
- 1.3.41 Question five of the feedback form asked respondents; *'Of the options identified to cross the Menai Strait to Pentir, which one do you feel National Grid should take forward?'* options A, B, C, D and E were presented. This was followed by question six which asked respondents to; *'Please provide your reasons for this crossing option across the Menai Strait to Pentir.'*
- 1.3.42 131 members of the public responded to this question using the Wylfa to Pentir feedback form. The responses are shown in graph 2 below.
- 1.3.43 **Graph 2 – Public response to crossing point selection**

**Public Response to Crossing Point Selection**



- 1.3.44 In response to question six, members of the public provided comments via the feedback form along with comments received via letter or email. These are reported on below.
- 1.3.45 **Crossing options – general themes**
- 1.3.46 Many respondents opposed all crossing options, with some choosing not to select a preference for any of the crossing options. Concerns were raised about the impact of pylons on the views of the Menai Strait, the Menai Suspension Bridge and the Britannia Bridge, and the surrounding landscape. Many felt the route across the Menai Strait should be undergrounded or that the cables should be placed along the seabed, with some selecting the crossing option where this would be most easily achieved, or stating no preference as long as it is placed underground or subsea. One respondent specified that, if cost is a constraint, the line should still be undergrounded across the Menai Strait even if pylons are used for the rest of the route.

- 1.3.47 While some respondents felt that the existing line is effectively screened by Britannia Bridge, others disagreed and suggested that the existing connection be placed underground or subsea at the same time due to the visual impact it has on the Menai Strait. Several comments supported the use of the existing corridors rather than adding a new line of pylons, although one respondent was concerned that this might compromise a new road crossing across the Menai Strait.
- 1.3.48 Concerns were raised about the use of subsea cables across the Menai Strait. These included the potential impact on the marine environment and wildlife in the area, the added cost to consumer bills, and the potential impact of future tremors caused by movements at the geological fault line running from Llanberis down Llanberis Pass and under the Menai Strait. One respondent noted that National Grid should consider other infrastructure development in the area:
- “Need to identify where Celtic Array would need to make land fall at Pentir. Existing pylon route would not need new crossing.”* (User ID 62)
- 1.3.49 Rather than undergrounding across the Menai Strait, some respondents believed that the money would be better spent undergrounding near to Llanfairpwll. Other respondents stated that if underground or subsea is not an option, the route should cross the Menai Strait either underneath or along Britannia Bridge. One respondent suggested the electricity should be transmitted via the existing overhead line and that the existing cables across the Menai Strait should be placed underground.
- 1.3.50 A number of respondents made alternative suggestions for how National Grid could cross the Menai Strait. One respondent felt a new road crossing should be built which could incorporate the new cable route. Another respondent asked National Grid to consider using the old Shell gas/oil pipeline which runs from Rhosgoch to Stanlow for an underground cable. One respondent questioned why the route couldn't be run from the Vaynol estate to Pentir. Furthermore, one respondent pointed to a specific point on the shoreline, near Llanedwen Church, which they felt would be suitable for the start of a subsea route, also suggesting an alternative transmission technology:
- “Consideration might be given to the submerged tube method of construction, with pre-cast sections being floated out and lowered onto the bed or into a shallow trench. Concrete mattresses might be laid over the sections giving it a profile to tidal currents, scour and bedload transport of sediment.”* (User ID 2476)
- 1.3.51 Several respondents who declined to answer question three on the feedback form did nevertheless provide criteria that they wished National Grid to factor in when choosing a crossing option. These include choosing the shortest option, choosing the one that is the most cost-efficient, or the crossing option that would have the least impact on the landscape, ecology or on local communities.
- 1.3.52 A number of respondents felt unable to make a decision about the crossing options until they have more information or National Grid has determined its overall strategy.
- 1.3.53 **Crossing option A**
- 1.3.54 Respondents who preferred crossing option A tended to do so as it follows the existing line.
- 1.3.55 A number of respondents that preferred crossing option A explained their preference for this crossing option over crossing option A (which also follows the existing line) by emphasising the benefits of not running too close to the existing 400 kV overhead line. Additionally, respondents felt that crossing option A would put less pressure on communities near the existing line such as Llanfairpwll, and potential *“congestion”* with the existing overhead line. One respondent felt that undergrounding would be difficult at crossing option B and as such, they preferred crossing option A.
- 1.3.56 Several respondents expressed their hope that the Britannia Bridge could be used to camouflage the new overhead line due to the height of the bridge. One respondent highlighted the section of the Menai Strait between Britannia Bridge and Telford Suspension Bridge as an area particularly conducive to screening and suggested the line is placed northeast of Britannia Bridge to ensure that views from the Bridge are not affected. Another respondent requested that the line be placed as close to Britannia Bridge as possible to minimise the impact on views of the Menai Bridge, whilst another respondent suggested the line could be carried underground along the Britannia Bridge.
- 1.3.57 A number of respondents claimed that as crossing option A is the shortest crossing option it would therefore be the cheapest to underground. One respondent expressed their hope that the route could pass through Nant Y Garth which would minimise the impact on the landscape in the Arfon area.
- 1.3.58 Crossing option A was chosen by a few respondents because it links to their preferred route corridor, either the orange or blue corridors.

- 1.3.59 A number of respondents listed crossing option A as their second choice after crossing option B. A couple of respondents added a caveat to their support for crossing option A with the request that the route is placed underground, particularly when crossing the Menai Strait and in populated areas. One respondent also stipulated that no large pylons should be placed within a mile of the Menai Strait.
- 1.3.60 Respondents expressed concerns about the effect crossing option A would have on the natural beauty of the Menai Strait and the implications on tourism. Particular viewing points included; near to Ynys Gored Goch and lookouts on the A55 road. Furthermore, one respondent raised concern about whether placing an overhead line near the Menai Suspension Bridge would affect the tourism industry.
- 1.3.61 One respondent did not think there was enough room for the route to run alongside the existing cables if crossing option A were selected, due to the planning application for a new housing development at Ffordd Cynan/Fford Crwys. One respondent was concerned about the effect crossing option A would have on their land.
- 1.3.62 **Crossing option B**
- 1.3.63 Crossing option B received more support than any other crossing option, primarily because it follows the existing 400 kV line across the Menai Strait. Respondents felt that this option would have the least visual impact on what is considered by many to be a beautiful landscape, generally because it avoids adding a separate overhead line to the landscape. Views of the Menai Suspension Bridge from the Britannia Bridge, as well as views towards Snowdonia and southwest towards Plas Newydd were mentioned as particularly important to conserve. A few respondents added that the existing overhead line does not detrimentally impact on local residents or businesses:
- "I have found that there are a surprisingly substantial number of "local" people who are unaware of the existing overhead line that traverses the Straits alongside the Britannia Bridge." (User ID 215)*
- 1.3.64 One respondent also believed that the cost would be less if the crossing option paralleled the existing line and that the effect on land value would be less than in other areas.
- 1.3.65 Several respondents pointed out that Britannia Bridge could play a role in reducing the visual impact of the new overhead line. Some respondents felt the bridge, which is higher than the cables at this crossing point, could partly screen the new crossing, with one respondent stating that this is also the case for the existing crossing at the Menai Strait.
- "The visual impact of the existing 400 kV crossing is lessened by its proximity to the Britannia Bridge, which from many aspects hides the line and reduces its impressions on the skyline." (User ID 91)*
- 1.3.66 A number of respondents suggested that National Grid should consider putting the cables either above, below, or within the structure of the Britannia Bridge:
- "Could the cable/cables be slung under the A55 Britannia Road Deck, just like Scottish Power's 33,000V cables do?" (User ID 194)*
- 1.3.67 One respondent suggested fitting the cables on outriggers from the bridge so that maintenance is easier and cost is lower, which would also avoid any impact on train or bridge maintenance.
- 1.3.68 Several respondents also stated their support for crossing option B because it is the shortest and most direct. As part of this, respondents listed benefits of choosing the shortest route including; being easier to construct, easier to place underground/subsea, minimising the area that is visually or environmentally impacted, as well as being the cheapest. One respondent preferred the shorter crossing as they felt it would enable lower-profile pylons to be used.
- 1.3.69 Three respondents supported crossing option B as it follows on from their preferred orange route corridor option. A couple of respondents listed crossing option B as their second choice after crossing option A.
- 1.3.70 Several respondents only gave support for crossing option B if underground or subsea cables would not be possible. One respondent acknowledge that there may not be sufficient space to put the cables underground on this route. A couple of respondents asked that the existing cable crossing is removed at the same time and a number of respondents also suggested that the existing line is replaced rather than added to. One respondent requested that the new line runs to the west of the existing overhead line, parallel to the A55.

1.3.71 There were a small number of comments stating opposition to crossing option B. Respondents either felt that the cumulative impact of adding another line to the existing crossing would detract from the setting of Britannia Bridge and damage the local tourism industry, or that option B contains a greater number of sensitive sites, with reference to ancient woodland in the area.

#### 1.3.72 **Crossing option C**

1.3.73 Those respondents selecting crossing option C did so as it is one of the shortest routes and crossed the Menai Strait at one of the narrowest points. Two respondents felt that this would therefore reduce the cost of the overhead line, and another that it would make the route more suitable for undergrounding. Respondents also felt that this crossing option would avoid populated areas more than other crossing options and would therefore have less direct visual impact on communities. The avoidance of ancient woodlands and listed buildings was also given as a reason for support. One respondent described crossing option C as being close to the existing route, therefore having less impact on the landscape. Several respondents requested National Grid minimise impact on the vegetation and wildlife in the parks in the area and also minimise construction impacts on the environment.

1.3.74 Several respondents expressed support for crossing option C only after stating opposition to all options, or preference for use of undergrounding or seabed cabling.

*"The lesser of 5 evils..."* (User ID 54)

1.3.75 *"I would like an underground crossing, but as you have ruled this out I have chosen option C."* (User ID 733)

1.3.76 One respondent noted that crossing option C was the most suitable for undergrounding due to it being the shortest crossing of the Menai Strait as well as away from sensitive areas such as the Brynsiencyn oyster lays and mussel cultivation plots. One respondent listed crossing option C as their third preference after crossing options B and A.

1.3.77 Reasons for opposing crossing option C were often also applied to crossing options D and E. The greatest concern was the potential visual impact on the Menai Strait, which respondents regarded as an unspoilt area of natural beauty. A couple of respondents expressed concern that pylons at crossing options C would be highly visible in the sky-line and were also worried about the impact on the AONB.

1.3.78 Specific locations and settlements were thought to be at risk from crossing option C, including Llanedwen and Y Felinheli, as well as National Trust land in the area. One respondent commented that the church at Llanedwen, along with Plas Newydd, are important tourist hotspots, with another suggesting that the line should be placed underground in the part of the AONB northeast of Llanedwen Church. Again referring to crossing options C, D and E together, one respondent also raised concern about the impact of these options on Llanddaniel Fab and Brynsiencyn.

1.3.79 There are a couple of comments opposing crossing option C as it was the least direct crossing option, or because it does not connect easily to respondents' preferred route corridor.

*"Whilst crossing C appears nearer to Pentir, it would require additional pylons from the "Blue" route at Llanfairpwll."* (User ID 134)

1.3.80 Two respondents felt that the overhead connection from crossing options C, D and E would cause the most significant environmental impact.

#### 1.3.81 **Crossing option D**

1.3.82 Only four respondents selected crossing option D. One respondent commented that the route should be subsea and crossing option D would be the easiest for this. One respondent chose this crossing option as it is the shortest and avoids their property.

1.3.83 As with crossing option C, respondents were concerned that this crossing option would have a detrimental impact on the scenic views of the Menai Strait, or that the pylons would stand out along the sky-line. Similarly, a couple of respondents were worried about the impact on the AONB.

1.3.84 As per above, one respondent was concerned about the disruption crossing option D could cause to residents in Llanedwen, Llanddaniel Fab, Brynsiencyn and Y Felinheli. One respondent believed the pylons of crossing option D would be visible from Caernarfon Castle, a UNESCO World Heritage Site. Two respondents felt that the overhead connection from crossing options C, D and E would cause the most significant environmental impact.

1.3.85 Respondents raised a few concerns that were specific to crossing options D and E. One respondent felt that the cumulative visual impact of the new route combined with a major road development near Bethel and Seion would be too much. The fact that crossing options D and E would be longer and therefore require taller pylons led to several respondents opposing these crossing options because of cost implications (due to the length and size of the corridor) and the visual impact of the taller pylons. One respondent felt that taller pylons would impact on property values, quality of life and the local tourism industry whilst another respondent was concerned that more solid pylons would also be required for crossing options D and E:

*“It is presumed that the pylon structure would also be very heavy to cater for the end forces at the end of the cable run/change in direction.” (User ID 188)*

1.3.86 One respondent was concerned about the interaction of this proposed option with the planned A487 road, and also pointed out that the area around Bethel is a flood plain for the River Cadnant.

#### 1.3.87 **Crossing option E**

1.3.88 Of those respondents selecting crossing option E, one respondent gave their support only if the line is placed underground, whilst another respondent commented that an underground or undersea route across the Menai Strait would be preferred. Respondents in favour of this crossing option stated that it would have the least impact on views from Britannia Bridge or that it would have the least general impact on the mainland side of the Menai Strait.

1.3.89 Respondents opposing crossing option E raised issues that were common to crossing options C and/or D. Respondents were concerned that option E would have a detrimental impact on the scenic views of the Menai Strait, or that the pylons would stand out along the sky-line. Again, a couple of respondents were worried about the impact on the AONB.

1.3.90 The fact that crossing options D and E would be longer and therefore require taller pylons led to several respondents opposing these options because of cost implications (due to the length and size of the corridor), the visual impact of the taller pylons and potential impact on property values, quality of life and the local tourism industry. One respondent is also concerned that more solid pylons would also be required for crossing options D and E.

1.3.91 One respondent was concerned with how Bethel and Seion would be affected by the cumulative visual impact of the new route combined with a major road development.

1.3.92 As with crossing options C and D, one respondent was concerned about the disruption crossing option E could cause to residents in Llanedwen, Llanddaniel Fab, Brynsiencyn and Y Felinheli. One respondent believed the pylons required for crossing option E would be visible from Caernarfon Castle – a UNESCO World Heritage Site.

1.3.93 Two respondents felt that the overhead connection from crossing options C, D and E would cause the most significant environmental impact.

1.3.94 One respondent was concerned about the interaction of this proposed option with the planned A487 road, and also pointed out that the area around Bethel is a flood plain for the River Cadnant.

#### 1.3.95 **Other comments**

1.3.96 Whilst one respondent acknowledged the need for the generation of more electricity, a couple of respondents believed these proposals to be premature as they felt the Wylfa B development might not yet go ahead. One respondent referred to research conducted by Bangor University which highlights a low-level of support for the nuclear power station proposals. One respondent commented that the existing overhead line should be utilised to remove the need for a new crossing option.

1.3.97 Many respondents commented that the whole route should be placed subsea to remove the need for new overhead lines across Anglesey and the Menai Strait. Suggested routes included going subsea from Wylfa to Liverpool, to Deeside, or to Pembroke. Respondents acknowledged the extra cost of placing cables subsea, but felt that in the long-term this would be a worthwhile investment.

1.3.98 Several respondents called for undergrounding of the whole route, with one citing a £1.6 billion cost difference but still expressing their support.

1.3.99 An alternative route was suggested by one respondent which would run an overhead line from Wylfa to Caergeiliog or the RAF Valley, then subsea to Bryncir. One respondent felt that the route should follow the Purple route corridor and continue directly to Merseyside. One respondent referred to the underground cables from Dinorwig power station to Pentir and asked for the same treatment for the North Wales Connection Project.



*“Was consideration given to use of the old railway from Amlwch to Gaerwen for underground cables, as used between Dinorwig and Brynrefail? (Then onwards along the yellow line.)” (User ID 320)*

1.3.100 National Grid was asked to take the long-term cost of the proposed infrastructure into account when making its decisions, as well as to consider the environmental implications of the crossing option in isolation rather than looking at the route as a whole.

1.3.101 General comments were made about the potential impact of National Grid’s proposals on the environment, mainly referring to the scenic landscape of the Menai Strait and surrounding areas and expressing concern that this could be compromised. Several respondents pointed out that the area contains a designated AONB and a SAC. The heritage aspect of the area and the bridges is also mentioned:

*“The entire Menai Strait is an exceptional national icon and much admired throughout the United Kingdom and abroad.” (User ID 268)*

1.3.102 Respondents outlined the significance of the Strait for wildlife, referring to natural shellfish sites, the

1.3.103 Brynsiencyn oyster lays and mussel cultivation plots. Several respondents urged National Grid to consider the importance of the Menai Strait area as the gateway to the island, and that the Menai and Britannia bridges are assets for the tourism industry and the local economy.

1.3.104 Respondents requested that the visual impact of the overhead line is mitigated as much as possible. However, several respondents were doubtful that this could be achieved without undergrounding the line.

1.3.105 Concern was raised that overhead lines would have a negative health impact on local communities.

#### 1.3.106 **Sensitive locations**

1.3.107 Question seven of the feedback form asked respondents; *‘To help us reduce the effects of our proposals, we would value your opinion in identifying locations that you feel are most sensitive within any of our preferred route corridors and crossing points.’* The results were as follows:

- **Question 7a Sensitive location: 108**
- **Question 7b Sensitive location: 60**
- **Question 7c Sensitive location: 43**

1.3.108 A further location could be provided under ‘Q7d’ should the respondent wish to comment on any further locations they felt were particularly sensitive. Forty-one members of the public responded to this question using the Wylfa to Pentir feedback form.

1.3.109 Below reports on the locations members of the public have identified in at least one of the questions in question seven.

1.3.110 A number of respondents stated that the whole project area is sensitive, rather than pointing towards specific locations. One respondent commented that any site within the Anglesey AONB is sensitive. Others provide specific coordinates or postcodes, or talk about designated areas or other amenities without naming them in full (for example “the SSSI”).

#### 1.3.111 **Bethel**

1.3.112 29 respondents mentioned Bethel as a sensitive location. Respondents feel that an overhead line would have an adverse effect on what is considered to be a populated area. One respondent expresses concern about the school in the area.

1.3.113 The other main concern for Bethel is that pylons would have a negative impact on the landscape.

1.3.114 There is concern that pylons would be placed on a ridge line in an open and high area and therefore would be seen from afar. One respondent is also concerned that pylons this high up would create a hazard to helicopters. Other concerns are generally that pylons across the landscape surrounding Bethel would be detrimental to the views of Bethel residents of Snowdonia and Anglesey. Three respondents to this question are also concerned about the impact of overhead lines in this area on local wildlife.

#### 1.3.115 **Britannia Bridge**

1.3.116 Seven respondents deem the area surrounding Britannia Bridge to be sensitive. Some specify either to the east or to the west. Few respondents gave reasons for their view, although those that did consider that the heritage status and beauty of the bridge should be preserved by not placing pylons nearby.

### 1.3.117 **Menai/Menai Strait/Menai Strait SSSI**

1.3.118 The 34 respondents who selected the Menai Strait area often state that it is because it is an AONB, with some highlighting the area's environmental status. Respondents are concerned that overhead lines would be visually intrusive in an otherwise scenic area. A couple of respondents are also concerned that the overhead line would be very visible in the area.

1.3.119 A few feel that pylons in this area would be too close to the historic Britannia Bridge, and others point out that the area has recreational value and that the views are good for tourism. One respondent identifies the mainland side of the Menai Strait to be the most sensitive. There are requests for undergrounding through the Menai Strait or for subsea cables to be used instead of overhead lines.

### 1.3.120 **Seion**

1.3.121 18 Respondents list Seion as a sensitive area because they feel the landscape is scenic, that it is a populated area and are concerned about the cumulative impact of adding new overhead lines to an area which already houses pylons and the Pentir substation. One respondent refers to the ancient hill fort nearby and another specifically to views of Snowdonia and the potential impact on wildlife. Four respondents note that crossing options D and E would impact on the Seion community and the value of properties in the area.

### 1.3.122 **Llanfairpwll/Llanfair PG**

1.3.123 Seven respondents are concerned about the proximity of many of the proposed overhead lines to the village of Llanfairpwll, with some stating that the existing line already has a negative impact on the community there. The nearby AONB is also mentioned.

### 1.3.124 **Llandeiniolen**

1.3.125 The landscape in this area is the main reason that 19 respondents feel it is a sensitive location, with specific mention of the views of Snowdonia. The impact on wildlife in the area is also mentioned. Crossing options D and E are singled out as leading to the most negative impact for Llandeiniolen and one respondent says that it is too close to Pentir and that the route following the existing line would be preferable. The nearby ancient hill fort is also mentioned.

### 1.3.126 **Plas Newydd Country House and Gardens**

1.3.127 This stately home on the shore of the Menai Strait is deemed sensitive by eight respondents. They refer in particular to the views from the grounds as well as the historical importance of the National Trust building. Respondents wish it to be protected from placement of pylons nearby to ensure that it will remain an important tourist attraction.

### 1.3.128 **Cemaes Bay**

1.3.129 Three respondents identified Cemaes Bay as a sensitive location. The primary school in Cemaes Bay is specifically mentioned, and one respondent asks that any transmission line be undergrounded in this area. One respondent worries that the addition of a line of pylons would detract from the appeal of the town and impact on its local economy.

### 1.3.130 **Llanddaniel/Llanddaniel Fab**

1.3.131 Four Respondents refer to the narrowness of the corridor at this point, raising concerns about the potential visual and health impact on the community here.

### 1.3.132 **Malltreath RSPB reserve/Malltreath Marsh SSSI**

1.3.133 The presence of a flood plain in this area, the visual impact of overhead lines crossing the reserve and hence impact on tourism, and the potential ecological impacts on important wetlands, birds and other wildlife are all of concern to seven respondents.

### 1.3.134 **Between Talwrn and Llangefni**

1.3.135 Three respondents are concerned that Llangefni is a 'pinch point' for the orange route corridor and that there would not be room for another line of pylons here. The potential impact on these two communities or on respondents' own properties is of particular concern.

### 1.3.136 **Menai Bridge/Telford Suspension Bridge**

1.3.137 The Telford Suspension Bridge (or Menai Bridge) itself is identified as a sensitive area by six respondents, with one respondent believing that it is historic and of international significance, and therefore should be protected. Another respondent comments that the designated area between Menai Bridge and Llanfairpwll should be protected.

### 1.3.138 **Rhosgoch**

1.3.139 Four respondents mentioning Rhosgoch say that it is one of the highest points used by the RAF in their flight paths, that there is already a line of pylons here, and that migrating birds, especially geese, also use this airspace.

### 1.3.140 **Brynsiencyn**

1.3.141 The Brynsiencyn Strait Crossing is described as a wide crossing which would require tall pylons; three respondents are concerned about potential impacts on the beauty of the location and the presence of an AONB.

### 1.3.142 **Fferam Uchaf and Salbri SSSIs**

1.3.143 Three respondents raised general concerns relating to the impact of a new power line in the area close to these two locations, immediately east of Mynydd Mechell.

### 1.3.144 **Llanedwen/Llanedwen Church**

1.3.145 Three respondents mentioned Llanedwen. The beauty of this location is described by one of respondent as “exceptional”, with another commenting that the church is unusual because candles rather than power are used for lighting. There are concerns that pylons would spoil the beauty of its setting.

### 1.3.146 **Bryn Du**

1.3.147 The presence of low-flying helicopters between Bryn Du and Bodorgan concerns one respondent; another is concerned about visual impacts in the Bryn Du to Llangaffo area and hence impacts on tourism.

### 1.3.148 **Cefni Marshes/reserve/reservoir**

1.3.149 Two respondents had a range of concerns with respect to the Cefni area: firstly relating to any intrusion or damage to important wader and wildfowl habitats; secondly the impact on recreation and tourism opportunities in this location; and thirdly the presence of low-flying aircraft, both military and civil.

### 1.3.150 **Y Felinheli**

1.3.151 Concerns from three respondents regarding Y Felinheli focus on activity in the village itself – that it is expanding and has a new school and marina – as well as the beauty of the area and the width of the potential nearby crossing.

### 1.3.152 **Ferodo Factory**

1.3.153 Two respondents both mention the same concern with respect to the Ferodo Factory; the potential presence of asbestos.

### 1.3.154 **Greenwood Forest Park**

1.3.155 Two respondents name Greenwood Forest Park as a sensitive location. One then points the reader towards other comments regarding National Grid’s strategic options; another mentions that this is an important tourist attraction.

### 1.3.156 **Vaynol/Newydd/Vaynol Estate**

1.3.157 Landscape impacts and the fact that the Vaynol Estate is an area of outstanding heritage are both concerns for the two respondents who mentioned this area.

### 1.3.158 **Other locations**

1.3.159 The remaining locations receive just one comment each in response to questions 7a-7d. These locations are listed below, alongside the key concern mentioned in relation to each.

- A487 bypass route (proposed): proposed bypass route, the flood plain and high aquifer.
- A55 corridor: should be avoided or undergrounded.

- Anglesey Fens: important for a range of species, including fly orchids only plentiful on two nature reserves in Wales.
- Bodewryd: cumulative visual effects with wind turbines in the area.
- Bryn Celli Ddu: ancient site which should be maintained including its surroundings (i.e. no pylons for a mile around the site).
- Capel Coch: adjacent to respondent's house, with presence of existing power lines.
- Cors Ddyga: "beautiful and wild area".
- Grug Farm: unexcavated site of historic interest.
- Hirdre-faig standing stone: a solar calendar from around 3000bc.
- Llanbadrig: risk of spoiling views from this location.
- Llannig: impact on views if there are any pylons west of the current transmission lines.
- Llyn Alaw: flight point used by RAF, and by migrating birds (especially geese).
- Llyn Coron: overwintering site for migrant birds.
- Llyn Mill: picturesque tourist site.
- National Watersports Centre/Plas Menai: potential impact of overhead lines on the future of this centre ("people travel from all over the world to sail on the Menai Strait from Plas Menai").
- Newborough, Warren and Sands: important wetlands, diverse rare wildlife population, importance for tourism.
- RAF Mountain and RAF Valley: "there should be no power lines erected anywhere near these sites" (this respondent then therefore questions the viability of the Blue, Purple and Yellow route corridors and asks whether the Orange route corridor is a foregone conclusion).
- Star: adjacent to respondent's property, which is hoped to be developed for leisure purposes.
- The Swellies and Ynys Gorad Goch: a much-photographed beauty spot.
- Tregaiian: no supporting comment.
- Ysbyllidir, Caergeliog: rock of geological interest.
- Ysgubor Newydd: middle of MoD low-flying helicopter routeing into RAF Valley, therefore safety implications.

## Appendix C: West Gwynedd responses

## APPENDIX C West Gwynedd responses

### 1.1 Overview of analysis

1.1.1 The Stage One Consultation West Gwynedd feedback form (Appendix L) was split into four sections; A, B, C, and D. Section A *'About You'* asked for information about the respondent completing the feedback form. This information has been analysed in chapter 12 of the Feedback Report. Section B asked for feedback on *'Strategic Options'* and is analysed in Appendix A and Section D asked for *'Your Views on Our Consultation in North Wales'*, which has been analysed in Appendix E. This chapter focuses on the responses to section C *'A New Substation'* of the feedback form (and other formats) which specifically asked for feedback on the siting of the proposed substation at West Gwynedd.

### 1.2 Analysis of responses from stakeholder organisations

1.2.1 The following stakeholders responded to the Stage One Consultation on proposals for a new substation in West Gwynedd:

- Snowdonia National Park Authority
- Countryside Council for Wales (CCW)
- National Farmers Union (NFU)
- Royal Society for the Protection of Birds (RSPB)
- CPRW Caernarfonshire Branch
- Anglesey Economic Regeneration Partnership

1.2.2 CCW and Snowdonia National Park Authority responded to the West Gwynedd consultation via the feedback form. The remaining stakeholder responses were received via other formats. All of the responses have been analysed together below.

#### 1.2.3 Proposed substation sites – general themes

1.2.4 Question three of the West Gwynedd feedback form asked respondents; *'Of the substation sites identified, which one do you feel National Grid should take forward?'* Options for Northern, Central and Southern substations were presented. This was followed by question four which asked respondents; *'Please provide your reasons for selecting this substation site, and any other comments'*.

1.2.5 Snowdonia National Park Authority and CCW did not select an option for question three.

1.2.6 Snowdonia National Park Authority stated it had no preferred site out of the three sites presented but does expect National Grid to employ mitigation measures with respect to visual impacts whichever substation site is chosen.

1.2.7 The NFU Cymru commented that it had no preference for substation location, but highlighted wider concerns about the lack of inclusion of subsea or underground options and the specific impacts relating to an overhead connection.

1.2.8 RSPB commented that between the Llŷn AONB and the Snowdonia National Park, the substation study area contains a small number of designated sites (specifically SAC, SSSI and County Wildlife Sites (CWS)), as well as supporting a number of farmland and upland fringe birds such as yellowhammers and curlews.

1.2.9 Welsh Highland Railway said it would support in principle a new substation if the existing SP Manweb overhead connection could be decommissioned.

1.2.10 Anglesey Regeneration Partnership noted that the proposed development of a new substation in the vicinity of Bryncir could be utilised as an alternative connection point to Pentir, with a subsea connection coming ashore at a point North East of Clynnogfawr. They felt that this would negate the need for an overhead connection across the Menai Strait.

#### 1.2.11 Northern substation site

1.2.12 No comments were received specifically concerning the Northern site.

### 1.2.13 Central substation site

1.2.14 CPRW Caernarfonshire branch identified that although it had no strong views on choice of location for the substation it *'would look for effective screening of the site'* using vegetation. CPRW stated that the central option would be its overall preference from a landscape perspective (see its comments on other sites below), as to some extent it is concealed by the built-up area of Bryncir and *'would probably impose the least damage on the wider landscape'* despite impacting more than the other two sites on local residents.

### 1.2.15 Southern substation site

1.2.16 Further to the above comments on the Central site, CPRW Caernarfonshire Branch noted that despite the southern site being in a more open position it potentially offers the best scope for effective screening.

1.2.17 CCW stated that it *'would not exclude any of the sites on the basis of impact on aspects of natural heritage'* but identified that *'the southern location is likely to have the least environmental impact'*. CCW commented that all three substation sites are faced with the same problem over how to cross the Afon Dwyfach:

*"Clearly 'open-cut' methods are highly invasive and, depending on the results of species and habitat surveys, may require the acquisition of species licences prior to their commencement. We note that the intention is to use wooden structures at the new sealing ends for the 132 kv cables and suggest that carrying the lines over the river on wooden poles before 'undergrounding', is likely to have less environmental impact."* (CCW)

## 1.3 Analysis of public responses

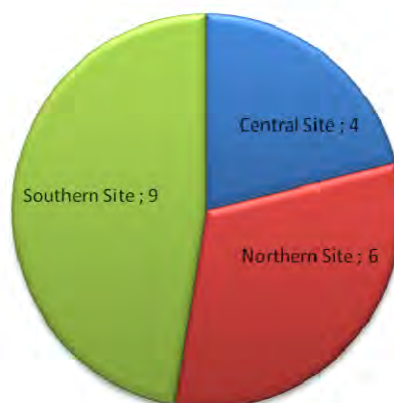
### 1.3.1 Proposed substation sites – general themes

1.3.2 Question 3 of the West Gwynedd feedback form asked respondents; *'Of the substation sites identified, which one do you feel National Grid should take forward?'* Options for Northern, Central and Southern substations were presented.

1.3.3 19 members of the public and other organisations responded to this question. The majority of respondents selected the southern substation site, followed by the northern and then the central site. The results are shown in graph 1 below.

### 1.3.4 Graph 1 – West Gwynedd response to substation selection

**West Gwynedd Response to Substation Selection**



1.3.5 This was followed by question four which asked respondents; *'Please provide your reasons for selecting this substation site, and any other comments'*.

- 1.3.6 24 members of the public and other organisations responded to this question.
- 1.3.7 Respondents made a range of comments regarding the three substation sites. Several respondents noted that they were unable to make a decision on a site whilst one respondent commented that any site option would be ok. One respondent commented that the people of Bryncir should decide the best site.
- 1.3.8 One respondent commented that the substation would not be required if National Grid built a subsea connection.
- 1.3.9 A number of questions were posed in the comments. These included;
- “What proposed mitigation measures would be put into place for noise?” (User ID 143)
- “How long would the local electricity network be interrupted?” (User ID 143)
- “Where will the habitat creation be?” (User ID 277)
- “What other mitigation measures are being considered?” (User ID 227)
- 1.3.10 Northern substation site**
- 1.3.11 Comments received relating to the northern substation site highlighted that this site is in a less populated area and therefore has less of an impact on local residents and would be the least costly.
- “The site is a fair distance from livestock market, village of Bryncir and SSSI.” (User ID 118)
- 1.3.12 References were made to the high quality agricultural land in the area which could be disrupted if the northern site was selected.
- 1.3.13 It was noted that the Northern site is close to the existing 400 kV line and that access to the site is already in place via the A487.
- 1.3.14 One respondent commented that the Northern site was preferred as there are no sites of scientific interest and only one scheduled monument.
- 1.3.15 One respondent commented that the topography of the land lent itself well to screening with the use of woodland and other plantations. Conversely, other respondents were doubtful that successful visual impact mitigation could be achieved due to the open landscape and the fact that the site is overlooked by a raised road.
- 1.3.16 Central substation site**
- 1.3.17 Comments on the Central substation site included the suggestion to use the industrial/commercial site to the west of the A487 road for the new substation as it was felt that it was already an ‘industrial area’, that the land here is of poorer quality and of little agricultural importance. Additionally, it was suggested that a substation here would be less visually intrusive.
- 1.3.18 One respondent suggested that the existing 132 kV line in the area should be undergrounded to further reduce the visual impact on the area.
- 1.3.19 Several respondents opposed the Central substation site due to its proximity to the residents of the village of Bryncir.
- 1.3.20 Southern substation site**
- 1.3.21 Several respondents preferred the Southern substation site as it is further away from populated areas, particularly Bryncir, and would therefore have less impact on local residents than the other site options. This view is supported by concerns about the impact of electric and magnetic fields (EMFs) on nearby residents. Additionally, respondents felt that this site option would minimise the required length of the 132 kV line.
- 1.3.22 A number of respondents identified the Southern substation site as being located on agricultural land and in a scenic landscape. As such, respondents raised concerns regarding the position of the substation and whether this would be in an elevated position as it would be difficult to screen. It was, however, noted that the Southern site could not be seen from the main road.



## Appendix D: Glaslyn Estuary responses

## APPENDIX D      The Glaslyn Estuary responses

### 1.1 Overview of analysis

1.1.1 The Stage One Consultation Glaslyn Estuary feedback form (Appendix M) was split into four sections; A, B, C, and D. Section A *'About You'* asked for information about the respondent completing the feedback form. This information has been analysed in chapter 12 of the North Wales Stage One Feedback Report. Section B asked for feedback on *'Strategic Options'* and is analysed in Appendix A and Section D asked for *'Your Views on Our Consultation in North Wales'*, which has been analysed in Appendix E. This chapter focuses on the responses to section C *'An additional underground connection at the Glaslyn Estuary'* of the feedback form (and other formats) which specifically asked for feedback on the proposed additional underground connection at the Glaslyn Estuary,

### 1.2 Analysis of responses from stakeholder organisations

1.2.1 The following stakeholder organisations responded to the Stage One Consultation on proposals for an additional underground connection at the Glaslyn Estuary:

- CCW (Countryside Council for Wales)
- Ffestiniog Railway Company
- Welsh Highland Railway Ltd
- CPRW Caernarfonshire Branch
- Isle of Anglesey County Council
- National Trust
- RSPB
- Snowdonia National Park

1.2.2 Three stakeholders responded to the Glaslyn Estuary consultation via the feedback form. The rest of the responses were received via other formats. All of the responses have been analysed below.

#### 1.2.3 Proposed route corridor and possible route alignment

1.2.4 Question three of the Glaslyn Estuary feedback form asked respondents; 'Do you have any comments about the proposed route corridor and possible route alignment?'

1.2.5 Ffestiniog Railway Company and Welsh Highland Railway Ltd commented on how the proposals would impact its respective railways. Ffestiniog Railway Company highlighted a specific area it would be happy for the underground cable to be contained within, namely the section between the northern side of the bypass road bridge and the Pen-y-mount train station. It also mentioned particular concerns about railway track stability (both during and after construction), timing of construction (with corresponding comments about the need for National Grid to agree compensation for any loss of earnings), and potential effects of Electric and Magnetic Fields (EMFs) on telephone and signaling control cables.

1.2.6 Welsh Highland Railway Ltd explained that it does not support the specific alignment currently proposed by National Grid and suggested an alternative alignment that would have less conflict with its land interests. The alternative route is between the trunk gas main and the bypass bridge. Welsh Highland Railway Ltd requested full details from National Grid on its proposed work, alongside assurances that any work undertaken would not cause adverse impacts to its land or operations.

1.2.7 CCW suggested that, subject to a Habitats Regulations Assessment, a path could be found through the Glaslyn Estuary route corridor that would not have a significant adverse impact on natural heritage.

1.2.8 RSPB noted that the route corridor is within two designated areas: Glaslyn SSSI, and Meirionnydd Oakwoods and Bat Sites SAC, the former having particular features such as breeding bird assemblage of lowland damp grassland.

1.2.9 The possibility of extending the underground route was mentioned by two stakeholders:

"...we would advocate extending the route underground through the urban area of Penrhyndeudraeth and under the Dwyryd, where the Briwet Bridge is being replaced, and as far as Llandecwyn. At present, there is a considerable ugly massing of pylons, approaching Penrhyn on the bypass from Porthmadog." (CPRW Caernarfonshire branch)

*"We consider that this underground section of the network should be extended to include the neighbouring Dwyryd Estuary to remedy the harm caused by the existing powerlines."* (The National Trust)

- 1.2.10 Isle of Anglesey County Council expressed disappointment in what it perceived as special treatment being given to the Glaslyn Estuary area.

*"Members considered that special treatment was being given to undergrounding part of the network at Aber y Glaslyn and criticised the fact that Anglesey, or part of it, does not merit the same special consideration."*

### **1.3 Analysis of responses from the public**

- 1.3.1 Question three of the Glaslyn Estuary feedback form asked respondents; 'Do you have any comments about the proposed route corridor and possible route alignment?'

- 1.3.2 25 members of the public and other organisations responded to this question.

- 1.3.3 Respondents made a range of comments regarding an additional underground connection. Several respondents commented that the alignment is logical and appropriate and that National Grid knows what it is doing. Respondents commented that undergrounding is the right thing to do in the Glaslyn Estuary area. Specific reasons for support included that this route had taken into account, or would have least impact on, surrounding habitats, that it would avoid the cables being visible, that it is in keeping with previous developments, such as the undergrounding of the existing line or the screening of the bypass, and that it avoids the need to put cables through Tremadog.

*"I believe that the potential route alignment shown in the display is the most appropriate within the identified corridor. I also believe that this route represents the minimum impact on the natural habitat as I understand it."* (User ID 97)

- 1.3.4 A number of respondents identified particular considerations they believe National Grid should consider. These included; the presence of the Meirionnydd Oakwoods, Bat Sites and the presence of breeding ospreys.

- 1.3.5 Several respondents expressed concerns regarding traffic disruption and long detours in Tremadog should the underground cables be placed near this area. One respondent suggested that aligning cables with existing road and rail infrastructure across Traeth Mawr would minimise disturbance. Another respondent stated that the bypass, which has a roundabout to Maes Gerddi, should not be dug up as it is only a year old.

- 1.3.6 From a more strategic perspective, one respondent reiterated that they would prefer a subsea solution, whilst another respondent suggested an alternative overhead route by way of an extension to the existing overhead line at Wern.

- 1.3.7 Several respondents commented on the construction process. One respondent questioned if contractors would be strictly supervised to ensure adherence to safeguards. One respondent noted the different construction methods available for underground cables including trench and cover or borehole drilling.

- 1.3.8 In terms of wider impacts, one respondent expressed concern that the work involved appeared to bring no employment opportunities for local people, suggesting that the large-scale clearance of invasive species such as rhododendron and Himalayan balsam as part of the works could both enhance local employment and reduce threat to indigenous habitats.

- 1.3.9 One respondent raised concerns regarding National Grid's infrastructure being located close to the National Park.

*"Policy of having respect for National Park standards should not be disrespected at the boundary"* (User ID 730)

- 1.3.10 Several respondents raised concerns regarding the consultation process expressing disappointment that the information available was not sufficient to answer the feedback form. Additionally, one respondent commented that the feedback form had little regard for the environmental impact the proposals would have.

*"I am disappointed at the way the National Grid has devised a questionnaire which is heavily placed on surface mounted installation which will obviously have an environmental impact for years to come."* (User ID 295)

Appendix E: Consultation responses

# APPENDIX E Consultation in North Wales responses

## 1.1 Overview of analysis

1.1.1 The final section of each feedback form was entitled; '*Your Views on Our Consultation in North Wales*'. This section was designed to gather views from the respondent on their experience of the North Wales Connection Project Stage One consultation. The comments relating to the consultation received from all of the three packages of work (and other formats) have been analysed together and are set out below. Where geographic differences occur these have been drawn out in the analysis.

## 1.2 Analysis of responses from stakeholder organisations

1.2.1 The following stakeholder organisations responded to the Stage One consultation about the consultation process.

- Aberffraw Community Council
- Anglesey Economic Regeneration Partnership
- Anglesey Tourism Association
- Asiantaeth yr Amgylchedd Cymru/Environment Agency Wales
- Bangor City Council
- CPRW
- CCW
- CPRW Anglesey Branch
- CPRW Caernarfonshire Branch
- CPRW Meirionnydd Branch
- Cwm Cadnant Community Council
- Cymdeithas Eryri – Snowdonia Society
- Cyngor Cymdeithas Llanfaethlu a Llanfwrog
- Cyngor Cymuned/ Llanddaniel-fab Community Council
- Cyngor Tref Porthaethwy/Menai Bridge Town Council
- Federation of Small Businesses, Ynys Môn branch
- Ffestiniog Railway Company
- Gwynedd Council's Cabinet
- Horizon Nuclear Power
- Isle of Anglesey County Council
- Llanbadrig Community Council
- Llanddeiniolen Community Council
- Llanddyfnan Community Council
- Llanfairpwllgwyngyll Community Council
- Malltraeth Ymlaen (Community Group Bodorgan)
- Mechell Community Council
- Môn a Gwynedd Friends of the Earth
- Network Rail
- NFU Cymru
- North Wales Fire & Rescue Service
- North Wales Wildlife Trust
- RSPB
- Snowdonia National Park
- The National Trust
- Trewalchmai Community Council
- Welsh Highland Railway Ltd
- Wylfa PLG
- Ynys Môn Ramblers Group

1.2.2 The feedback form asked respondents; 'Has the information presented been useful in helping you to give feedback on our proposed work?'

1.2.3 16 stakeholders responded to this question across all three packages of work. The results are shown in graph 1 below. The majority of stakeholders found the information presented at the consultation useful.

1.2.4 **Graph 1 - Stakeholder response to consultation information**

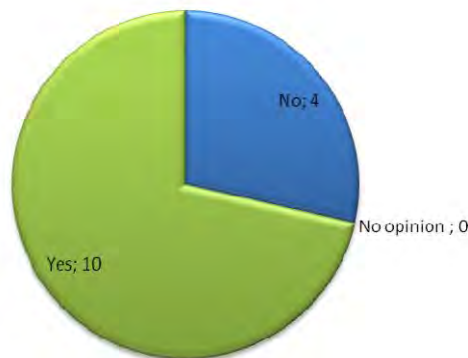
**Stakeholder Response to Consultation Information**



1.2.5 The feedback form also asked respondents; 'Do you feel National Grid has given you sufficient opportunity to comment on our proposed work?' 14 stakeholders responded to this question across the three packages of work. The results are shown in graph 2 below. The majority of stakeholders agreed that there was sufficient opportunity to comment on the proposed works.

1.2.6 **Graph 2 - Stakeholder response to opportunity to comment**

**Stakeholder Response to Opportunity to Comment**



1.2.7 On all three feedback forms respondents were asked to provide their reasons for their response to the previous questions and provide any further comments on National Grid's consultation on the North Wales Connection Project. The following responses were received by stakeholders through the Wylfa and Pentir, West Gwynedd and Glaslyn Estuary feedback forms as well as other formats.

1.2.8 **Consultation on subsea/underground options**

1.2.9 Ynys Môn Ramblers Group and CPRW Anglesey Branch objected to the fact that there had not been a consultation on a subsea option. CPRW Anglesey Branch called for a public consultation on a subsea route from Wylfa to Deeside, Lancashire, or to where the power would primarily be used and asked for an independent body to make the final decision. This view was backed up by Isle of Anglesey County Council.

*“The consultation process is flawed by not providing an opportunity to oppose pylons in favour of the subsea option.”* (Isle of Anglesey County Council)

1.2.10 Wylfa PLG expressed its hope that the next stage of consultation would be a preferred route with a significant amount of undergrounding.

1.2.11 Môn a Gwynedd / Friends of the Earth stated that a subsea option should have been included in Stage One Consultation.

#### 1.2.12 **Providing meaningful consultation**

1.2.13 Cwm Cadnant Community Council challenged the influence of the consultation stating that public views would not be taken on board by National Grid.

1.2.14 A number of stakeholders commented that there were too few options to respond to or no option to reject National Grid’s proposals. As such, they felt the consultation was not valid and National Grid is unlikely to be influenced by responses or are already biased with respect to the outcome.

1.2.15 Penmynydd Community Council expressed disappointment at not being contacted by National Grid.

1.2.16 In its response, CCW commented that National Grid’s approach to the North Wales Connection Project does not comply with its methodology set out in its document, *‘Our approach to the design and routeing of new electricity transmission lines’*. CCW stated it believed National Grid’s consultation included elements from Stage 1 Strategic Options, Stage 2 (outline routeing and siting), and Stage 3 (detailed routeing and siting). CCW commented that it is inappropriate to move onto detailed routeing and siting before Stage 2 and the results from Stage One Consultation have been assessed and published.

*“This consultation appears to include elements from Stage 1 (Strategic Options), Stage 2 (Outline Routeing and Siting), and Stage 3 (detailed routeing and siting). Whilst some flexibility in the methodology is reasonable, it is inappropriate in the case of such a major project, to have moved onto detailed routeing and siting before Stage 2 and the results of the consultation have been assessed and published.”* (CCW)

1.2.17 CCW noted that they have previously raised concerns about the consultation process with focus on the lack of feedback to comments already provided and outstanding National Grid actions from consultation meetings between CCW and National Grid in February and September 2012. CCW states that; *“these were set out in our letter of 10 September 2012 to which we have had no written response. We remain concerned about this situation.”*

1.2.18 Wylfa PLG felt that National Grid’s consultation process had led to widespread opposition to National Grid’s proposals.

1.2.19 Ffestiniog Railway Company and Welsh Highland Railway Ltd provided positive feedback regarding National Grid’s consultation, stating it had been a useful introduction to the Project. That said, as statutory stakeholders, both would like to be involved in further consultation with National Grid before any final decisions are made to address specific concerns.

1.2.20 A number of stakeholders requested further consultation in order to focus on specific actions suggested for National Grid to undertake. These included; further assessments and research and requests for further meetings. These stakeholders also requested to remain involved in further stages of consultation.

1.2.21 Three stakeholders commented that the consultation process was welcome.

#### 1.2.22 **Consultation materials**

1.2.23 Malltraeth Ymlaen Community Group Bodorgan criticised the feedback form and its level of complexity. Môn a Gwynedd / Friends of the Earth commented that it had a negative experience filling in the online feedback form.

1.2.24 Based on National Grid’s community council presentations, information boards and feedback forms, Cwn Cadnant Community Council commented that National Grid was biased in favour of an overhead line between Wylfa and Pentir.

1.2.25 A number of respondents made positive comments about the consultation, including the quality of the information materials – with CPRW praising the public exhibitions. Malltraeth Ymlaen Community Group Bodorgan said they were provided with sufficient opportunity to comment.

Those stakeholders that criticised the consultation materials commented that the content was inaccurate and/or biased towards an overhead line. Issues that stakeholders would like to have more information on included:

- biodiversity, including birds, other wildlife and habitats;
- environmental impacts, including visualisations of likely impacts across different locations;
- pylon design, size and number;
- the use of HVDC with nuclear power stations;
- construction impacts of undergrounding;
- routeing;
- clarification of legal/statutory procedures;
- the project case, specifically economic drivers; and
- lifetime cost analysis.

#### 1.2.26 Consultation timescales

1.2.27 CCW expressed concern regarding the short timescale of the consultation. It explained the large volume of information provided along with the timescales for responding to the consultation made it difficult to respond with a proper assessment.

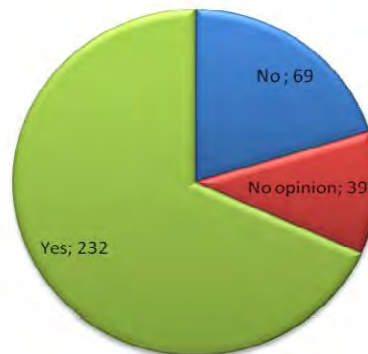
#### 1.2.28 Analysis of responses from the public

1.2.29 The feedback form asked respondents; *'Has the information presented been useful in helping you to give feedback on our proposed work?'*

1.2.30 The results are shown in graph 3 for all three packages of work. There was little differentiation between each package of with the majority of respondents finding the consultation information provided useful.

#### 1.2.31 Graph 3 - Public response to consultation information

**Public Response to Consultation Information**



1.2.32 The feedback form also asked respondents; *'Do you feel National Grid has given you sufficient opportunity to comment on our proposed work?'* The results demonstrated there was a difference between each package of work. The results are shown in graph 4.

1.2.33 Graphs 5, 6 and 7 below present the results for the individual packages of work and show that a higher proportion of respondents answered 'no' to this question in respect of the Wylfa and Pentir consultation, than for the West Gwynedd and Glaslyn Estuary consultations. Despite this difference, the majority of respondents agreed that there was sufficient opportunity to comment on the proposed works.



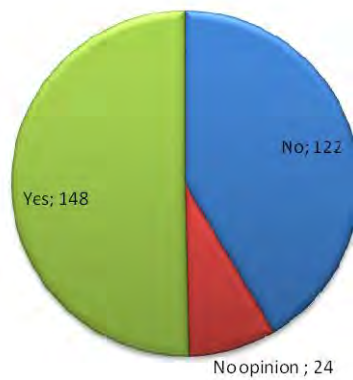
1.2.34 Graph 4 – Overall public response to opportunity to comment

Public Response to Opportunity to Comment



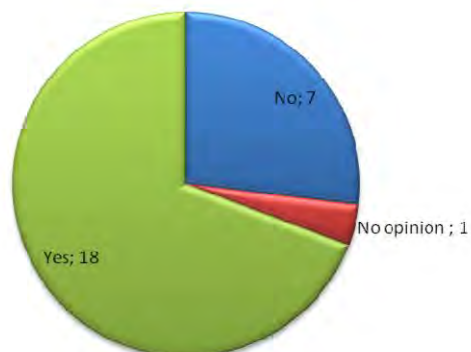
1.2.35 Graph 5 - Wylfa to Pentir response to opportunity to comment

Wylfa to Pentir Public Response to Opportunity to Comment



1.2.36 Graph 6 – West Gwynedd response to opportunity to comment

West Gwynedd Public Response to Opportunity to Comment



### 1.2.37 Graph 7 – Glaslyn Estuary response to opportunity to comment

**Glaslyn Estuary Public Response to Opportunity to Comment**



1.2.38 On all three feedback forms respondents were asked to provide their reasons for their response to the previous questions and provide any further comments on National Grid's consultation on the North Wales Connection Project. The following responses were received by members of the public through the Wylfa and Pentir, West Gwynedd and Glaslyn Estuary feedback forms as well as other formats.

#### 1.2.39 Consultation on subsea/underground options

1.2.40 Many respondents challenged National Grid's consultation as it did not provide a subsea or underground option in the feedback forms. It was felt that by excluding these options, National Grid had already chosen an overhead line and the consultation process would not change this.

1.2.41 A number of respondents believed National Grid chose its preliminary preferred option as it was the cheapest and, as a result, did not allow the public to choose a subsea or underground connection option. Several respondents commented that inadequate consideration had been given to the cost of the proposals when factored against the impact the proposals would have on the environment, landscape, local businesses and tourism.

1.2.42 Several respondents said that most local residents prefer subsea route and are willing to pay a higher cost for this.

#### 1.2.43 Providing meaningful consultation

1.2.44 Several respondents asserted that the opinions of local residents should be valued and taken into account during the decision-making process. Further to this, it was suggested that the consultation process was not genuine and therefore should not be seen as representing the true opinion of the local residents. A major factor contributing to this feeling was the perception that National Grid is unlikely to be influenced by respondents' feedback.

1.2.45 Many respondents felt they were not provided with a choice as National Grid only presented its preferred option. They commented that the lack of opportunity to support a subsea option and to reject National Grid's proposals for an overhead line on the feedback forms was not fair. The majority of the challenges were received via postcard responses. 587 respondents ticked the following statement on the postcards (in Welsh and English).

*"I feel that the National Grid's consultation feedback form does not allow me to express my views clearly."* (Postcard response)

1.2.46 A number of respondents stated that the decision has already been made and people's views will have little impact on the development of the Project. Of those, two had a negative experience with consultation exercises carried out by other organisations whereas one respondent claimed the public should have been involved earlier when the preferred strategic option was chosen

*"This is just lip service, as with all companies you will do as you wish."* (User ID 45)

- 1.2.47 Similarly a number of respondents stated that the consultation was a limited scope and invited the public to comment only on those options pre-selected by National Grid rather than giving them the opportunity to comment on all aspects of the Project. Conversely, several respondents praise the consultation process.
- 1.2.48 One respondent commented that there had been no consultation with interested national bodies.
- 1.2.49 A couple of respondents complained about the divisive nature of the consultation stating it has pitted areas of the island against each other which will fragmentise and weaken the opposition to the Project.
- 1.2.50 A number of respondents felt the Project was not publicised well enough. One respondent expressed concern that the English residents of Anglesey are more outspoken than the locals and that the consultation will reflect their views.
- “A lot of the people affected by your proposals have not been informed or given the opportunity to leave feedback (e.g. Rhosybol and Rhosgoch), but people outside your corridor route have been informed (e.g. Amlwch). This gives a false impression that a low turnout and low feedback gives you the thumbs-up, but it doesn't.”* (User ID 712)
- 1.2.51 Several respondents expressed their belief in the importance of public consultation and involvement – with a number of respondents expressing their satisfaction in being given the opportunity to comment on National Grid’s proposals.
- 1.2.52 Some respondents, while acknowledging that National Grid presented them with a variety of means to get involved, expressed doubts that their views will actually have any effect on National Grid’s decision-making process.
- 1.2.53 Other challenges included general comments that the consultation was not valid or fair with concern expressed that it was a pointless exercise.
- 1.2.54 A number of suggestions or requests for the consultation process going forward were made including; general requests for a wider or fuller consultation; a follow-up consultation; suggestions of specific people or organisations National Grid should talk to; and a request to be involved in any steering committee set up in the future. Some respondents requested direct responses to their input from National Grid.
- 1.2.55 **Public exhibitions**
- 1.2.56 A variety of responses were received regarding National Grid’s public exhibitions. A number of respondents commented that National Grid staff at the exhibitions were helpful, well-informed and sympathetic. The presence of a Welsh representative and materials in Welsh and English was welcomed. On the other hand, a number of respondents commented that the staff at the public exhibitions did not provide clear information and had limited expertise.
- “The consultation event I attended seemed overstuffed, with disparity of expertise. I had to speak to three different people to get the answer to my questions.”* (User ID 126)
- “Your staff could not identify an exact route”* (User ID 124)
- “Exhibition well presented with knowledgeable personnel to answer all questions in a manner that was understandable.”* (User ID 115)
- “The exhibition and literature was informative. Staff were very happy to explain further over the phone.”* (User ID 734)
- 1.2.57 A number of the respondents found the accessibility of the consultation limiting and commented that some of the exhibitions had “inconvenient hours” which were discriminatory to working people. Conversely, several respondents described the consultation as widely accessible.
- 1.2.58 **Consultation publicity**
- 1.2.59 Several respondents stated that they did not receive any details through the post. They expressed views that the newsletter was poorly distributed, together with the fact that the feedback forms had to be requested rather than directly sent to those affected, which they felt left many people unaware of the Project. One respondent stated that the design of the Project News document made it look like a circular and failed to attract enough attention.
- “Although we have received your booklet, there are other homes in the area that have not had it and many people seem completely unaware of the proposals.”* (User ID 111)

Conversely, a number of respondents felt the Project documents were well distributed.

*"It seems to me that National Grid has gone to extraordinary lengths to inform people of their proposals."* (User ID 198)

#### 1.2.60 Consultation materials

1.2.61 Conflicting views were expressed on how useful respondents found the consultation materials provided by National Grid. Some respondents challenged the accuracy of the data National Grid provided and felt they needed more information before making an informed decision. A number of respondents commented that the information was not useful, informative or clear. Specific problems included that the materials were too technical for the average person and the information provided in the SOR was subjective as the costs provided were subjective and unclear.

*"There is no information about the proposed height, number of pylons or proposed routes. In short, there is not enough information to make an informed choice."* (User ID 340)

*"The SOR does not appear to have gone through a verification checking or peer review process."* (User ID 230)

1.2.62 One respondent observed that the photograph used on the front of the Autumn 2012 Project News included tall pylons east of the Britannia Bridge, between the two iconic bridges, and over Ynys Gorad Goch, which the respondent felt was insensitive.

1.2.63 A number of respondents were not satisfied with the quality of the maps provided, or would have liked larger maps, and some felt the overall presentation of the information was hard to follow. One respondent commented that there was no map provided with the crossing options marked on it and one respondent commented that a hotel had been misplaced on the map. Several respondents commented that the Project maps were wrong as they could not find the new Minffordd to Tremadog bypass. One respondent said that their house is mislabelled as a disused mill on one of the consultation maps, but it is a Grade II listed dwelling.

1.2.64 Conversely, many respondents remarked that they found the information to be clear, useful and informative:

*"The information is well presented, clear and makes it very clear what the proposed and preferred options are."* (User 221)

1.2.65 A number of respondents felt that more information was needed on particular topics including; more background information on the area (either generally or specific to the Wylfa-Pentir area); and proposed mitigation measures for crossing the Dwyryd and Glaslyn Estuaries:

*"I would just like more information on how you will minimise damage to both the estuaries. Much more about the crossing of the Dwyryd estuary, equally beautiful. This would be a wonderful opportunity to underground the cables there."* (User ID 227)

1.2.66 Further to this, several respondents stated they would like more information on specific issues before a decision is made by National Grid. These included:

- detailed costs of the preferred option;
- cost of placing the routes underground and subsea;
- amount consumers' bills will increase should the route be placed underground or subsea;
- images that show the proposed route once it is completed;
- impact of overground lines on health;
- impact of underground lines on towns and villages;
- pros and cons of undergrounding;
- design of the pylons and number of lines;
- proposed routes and the siting of pylons within them;
- substation design;
- specific project elements such as the Menai crossing and Pentir or Wylfa substations;
- cost of maintenance;
- cost of using T-pylon;
- sound implications;
- subsea options and implications more generally;
- the project case and supporting documents;
- safety considerations;

- routing;
- compensations where property value might be affected;
- undergrounding, including location and length of undergrounded cables;
- environmental and socioeconomic impacts and mitigation;
- impact on biodiversity and wildlife, and plans to protect statutory wildlife sites in each corridor;
- planned alterations to the substation at Pentir or the existing overhead cables; and;
- future projects, including projects to link to the same grid connections.

1.2.67 One respondent asked for a written confirmation that there is no intention of increasing the area of the Pentir substation site or of making any changes in the area that would have a visual impact.

1.2.68 One respondent would have liked more information about the potential impact on ancient woodland and other specific areas before being asked to express their preferred route corridor.

1.2.69 One respondent asked for an explanation about what National Grid meant by the phrase “underground where appropriate” in its Overview document.

1.2.70 A number of respondents raised concerns regarding the consultation website noting that they had difficulty responding to the sensitive locations question. One respondent commented that the inaccessibility of the map question on the website meant that the consultation process was not equally open to all.

*“Another flaw in the process is that completing this on-line form is a nightmare. Every time I try to access the map it just returns to the first page of this form with all entries deleted. This is a common problem also experienced by others.”* (User ID 264)

1.2.71 Conversely, one respondent noted that the website was very informative and had enough information for them to make a decision.

*“I found the information material very useful, well presented and easy to follow. It has been supported by easy language with the minimum use of industry jargon.”*

#### 1.2.72 **Consultation feedback forms**

1.2.73 The feedback forms were criticised for not providing more options to comment on, such as a subsea option, underground options and subsea cabling or routing under Britannia Bridge. With the opportunity to comment only on options already selected by National Grid, a number of respondents suggested this was deliberate so National Grid could gain support for its preliminary preferred option.

1.2.74 Several respondents felt that the feedback forms stated as a certainty that the Wylfa B nuclear power station would go ahead.

1.2.75 Similarly, one respondent felt the ‘Yes/No/No opinion’ format was too restrictive as it did not permit National Grid’s proposals to be supported or rejected with caveats.

1.2.76 Opinions were split on the user-friendliness of the feedback forms with equal numbers of respondents having a favourable or negative attitude towards them. One of the challenges voiced among those who expressed discontent with it was that the feedback forms were only useful when read together with the other documents. Whereas another respondent says that the form was very easy to follow.

1.2.77 According to one respondent, consultation feedback forms were only provided to people who attended the public exhibitions and, thus, many residents – particularly those in the Llandaniel area – were either unaware of the consultation or had insufficient opportunity to comment.

#### 1.2.78 **Consultation timescale**

1.2.79 Comments on the consultation timescales included the timescale was acceptable while others criticised it for being too short, late or unclear.

*“The reason for the low turnout may be that the dates for consultation events were in the middle and not on page 2.”*(User ID 185)

#### 1.2.80 **Further consultation**

1.2.81 Several respondents felt that further consultation was in order as there are many details still left to be decided on. As a way to improve the consultation process, one respondent suggested open surgeries could be set up in the affected regions, or public meetings. Queries were made about the next steps in National Grid’s decision-making process.

### 1.2.82 **Consultation fatigue**

Concerns were raised that the public experienced consultation fatigue and suggested National Grid find an alternative approach to get people's opinions on its proposals. Other comments identified the number of consultations local residents have had to respond to recently.

Appendix F: National Grid's commitments when undertaking works in the UK: Our Stakeholder, Community and Amenity Policy





# National Grid's commitments when undertaking works in the UK

Our stakeholder, community and amenity policy

**nationalgrid**

The power of action.™



This note sets out National Grid's ten commitments when undertaking electricity and gas works in the UK. It covers how we will meet our amenity responsibilities and our commitments to effectively involving stakeholders and communities.

## Engaging stakeholders and communities

The development of gas and electricity networks, and their maintenance and refurbishment, can affect communities through which the networks pass. How we manage our relationships and work together with these communities and other affected stakeholders is important to us.

National Grid aspires to engage positively with stakeholders and communities. We are committed to involving stakeholders and communities effectively in our works and recognise the benefits of doing this. We will listen, take into account views and opinions expressed and respond to these when developing and undertaking works.

The principles contained in our Commitment 2 (Involving stakeholders and communities) provide the framework that will help us to promote genuine and meaningful stakeholder and community engagement and to develop and maintain a culture that delivers this.



## Application

This document applies to National Grid's transmission activities in the UK, for both electricity and gas works. It also applies to all works on our gas distribution network operating above 7 bar (gauge) pressure. Gas works for networks of below 7 bar in pressure are excluded from these commitments because they are of much smaller scale, tend to be undertaken in the public highway and are controlled under the provisions of the New Roads and Street Works Act 1991 and Traffic Management Act 2004. They are also planned and implemented in much shorter timescales resulting in short-term impacts which are generally less significant and restricted to the communities in the immediate vicinity of the works.

In this document, we interpret **amenity** to mean the natural environment, cultural heritage, landscape and visual quality. We also include within this interpretation the impact of our works on communities, such as the effects of noise and disturbance from construction activities.

By **works** we mean constructing new transmission or distribution infrastructure such as overhead lines, underground cables, sealing end compounds and substations; pipelines, compressor stations, pressure reduction installations and other above ground gas installations (where all are part of networks operating above 7 bar (gauge) pressure); major refurbishment of any of these; and the dismantling and removal of any parts of the system.

By **stakeholders** we mean organisations and individuals who can affect or are affected by our works. By **communities** we include those stakeholders (organisations and individuals including residents) with a particular remit or interest in the local area affected by the works.



### Before

Construction of one of two new gas pipelines through the south west.



### After

Careful reinstatement of the land upon completion of the groundwork.

*Location: Gas pipeline reinforcement at Milford Haven to Aberdulais.*



A reinstatement to a road crossing on the route of The South West Reinforcement Project. The breach was repaired using traditional Devon Banks methods.

## Our Commitments

We, at National Grid, have made ten commitments to underpin our aspirations to engage positively with stakeholders and communities and to meet our amenity responsibilities when undertaking electricity and gas works.

### 1. Establishing need

We will only seek to build electricity lines or pipelines along new routes, or above ground installations in new locations, where our existing infrastructure cannot be technically or economically upgraded to meet system security standards and regulatory obligations, where forecasted increases in demand for electricity or gas will not be satisfied by other means, or where connections to customers are required.

### 2. Involving stakeholders and communities

We will promote genuine and meaningful stakeholder and community engagement. We will meet and, where appropriate, exceed the statutory requirements for consultation or engagement.

We will adopt the following principles to help us meet this commitment:

- ◆ we will seek to identify and understand the views and opinions of all the stakeholders and communities who may be affected by our works
- ◆ we will provide opportunities for engagement from the early stages of the process, where options and alternatives are being considered and there is the greatest scope to influence the design of the works
- ◆ we will endeavour to enable constructive debate to take place, creating open and two-way communication processes
- ◆ we will ensure that benefits, constraints and adverse impacts of proposed works are communicated openly for meaningful stakeholder and community comment and discussion. We will be clear about any aspects of the works that cannot be altered
- ◆ we will utilise appropriate methods and effort in engaging stakeholders and communities, proportionate to the scale and impact of the works
- ◆ we will provide feedback on how views expressed have been considered and the outcomes of any engagement process or activity

### 3. Routing of networks and site selection

If new infrastructure is required, we will seek to avoid the following areas which are nationally or internationally designated for their landscape, wildlife or cultural significance: National Parks; Areas of Outstanding Natural Beauty; National Scenic Areas; Heritage Coasts; World Heritage Sites; Sites of Special Scientific Interest; Special Protection Areas; Special Areas of Conservation; Ramsar sites; National Nature Reserves; Scheduled Ancient Monuments; and registered parks and gardens.

#### **4. Minimising the effects of new infrastructure**

We will seek to minimise the effects of works and new infrastructure on communities by having particular regard to safety, noise and construction traffic. We will also seek to minimise the effects of new infrastructure on areas which are nationally or internationally designated for their landscape, wildlife or cultural significance and other sites valued for their amenity such as listed buildings, conservation areas, areas of archaeological interest, local wildlife sites, historic parks and gardens and historic battlefields. We will take into account the significance of these and other areas through consultation with local authorities and other stakeholders with particular interests in such sites.

#### **5. Mitigating adverse effects of works**

We will undertake relevant environmental investigations and report on these in any applications for consent for new works. We will use best practice environmental impact assessment techniques to assess possible effects of our works and identify opportunities for mitigation measures. In the course of this we will consult with relevant stakeholders and affected landowners. Where works are likely to have an adverse effect on amenity, we will carry out mitigation measures to reduce those effects as far as reasonably practicable.

#### **6. Offsetting where mitigation is not practicable**

Where mitigation measures cannot adequately mitigate against loss of amenity, or where mitigation is not practicable, we will offer to undertake practical offsetting measures. These measures, which will be developed in discussion with relevant stakeholders, could include landscaping and planting works or other benefits to affected communities.

#### **7. Enhancing the environment around our works**

When undertaking works, we will consider what practicable measures can be taken to enhance areas in the vicinity of the works for the benefit of local communities and the natural environment.

#### **8. Monitoring and learning for the future**

We will monitor, evaluate and review our engagement processes so that we can learn from our experiences and continue to improve engagement programmes in the future. We will carry out periodic reviews of the environmental impact of our works and consider the effectiveness of our assessment and any mitigation we have undertaken. The results of these reviews will be used to foster continuous improvement in the environmental assessment and management of works. In undertaking all reviews of our processes and procedures we will take into account stakeholder and community feedback.

#### **9. Reviewing these commitments**

We intend to review these commitments at least every five years. Additional revisions will be made as necessary in response to new legislation, policy and guidance. As a responsible company practising good corporate governance, we will review the relevance of these commitments and report on our web site case studies illustrating our stakeholder and community engagement and our performance in preserving amenity.

#### **10. Working with others**

We require others undertaking works on our behalf to demonstrate these same commitments and we will create an environment where best practice can be shared and delivered.

## Background

### Meeting our duties under Schedule 9 of the Electricity Act

#### Electricity Act 1989

#### Extracts from Schedule 9

#### Preservation of amenity: England and Wales

##### Paragraph 1(1)

1.-(1) In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate or supply electricity-

- (a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and
- (b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects.

##### Paragraph 2(1)

A licence holder shall within twelve months from the grant of his licence prepare, and from time to time modify, a statement setting out the manner in which he proposes to perform his duty under paragraph 1(1) above, including in particular the consultation procedures.

This document sets out how National Grid, as an electricity transmission system licence holder, will meet the duty placed on it under Section 38 and Schedule 9 of the Electricity Act 1989 (see above). This duty relates to the preservation of amenity and forms only part of National Grid's wider environmental responsibilities. Information on those environmental issues not formally covered by Schedule 9, such as our role in countering climate change, in connecting new and renewable sources of electricity generation, in pollution control, and in electric and magnetic fields is available in other publications.

There is no equivalent to a Schedule 9 statement requirement in the provisions of the Gas Act 1986. However, National Grid believes that the principles in this document should apply equally to both our electricity and gas transmission and gas distribution works above 7 bar in pressure.



## History

The first significant revision to our Schedule 9 Statement was prepared following a stakeholder workshop facilitated by the Environment Council in 2001. The statement and our performance in meeting the commitments were reviewed in 2006 and our statement was modified slightly as a result. In preparing that revision we consulted the bodies referred to in Schedule 9 of the Act which have statutory responsibilities for amenity, namely: Natural England; Countryside Council for Wales; CADW: Welsh Historic Monuments; and English Heritage. In addition, we consulted other non-government organisations concerned with amenity such as: Civic Trust; Council for National Parks (now the Campaign for National Parks); Tree Council; Wildlife Trusts; RSPB; CPRE; and representatives of other stakeholder groups together with our staff.

## Preparing this policy

With the advent of the Planning Act 2008, we have incorporated our Schedule 9 statement duty into this wider policy, which incorporates gas works (above 7 bar in pressure), and new commitments to stakeholder and community engagement. In preparing our stakeholder and community engagement commitments we commissioned work from the consultancies, Corven and Entec UK, utilised best practice from 3G Communications Ltd., and met with a number of non-government organisations.

We are keen to hear your views on this policy comments should be sent to:  
[landd.consultation@uk.ngrid.com](mailto:landd.consultation@uk.ngrid.com)

### **Land and Development**

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Published: February 2010

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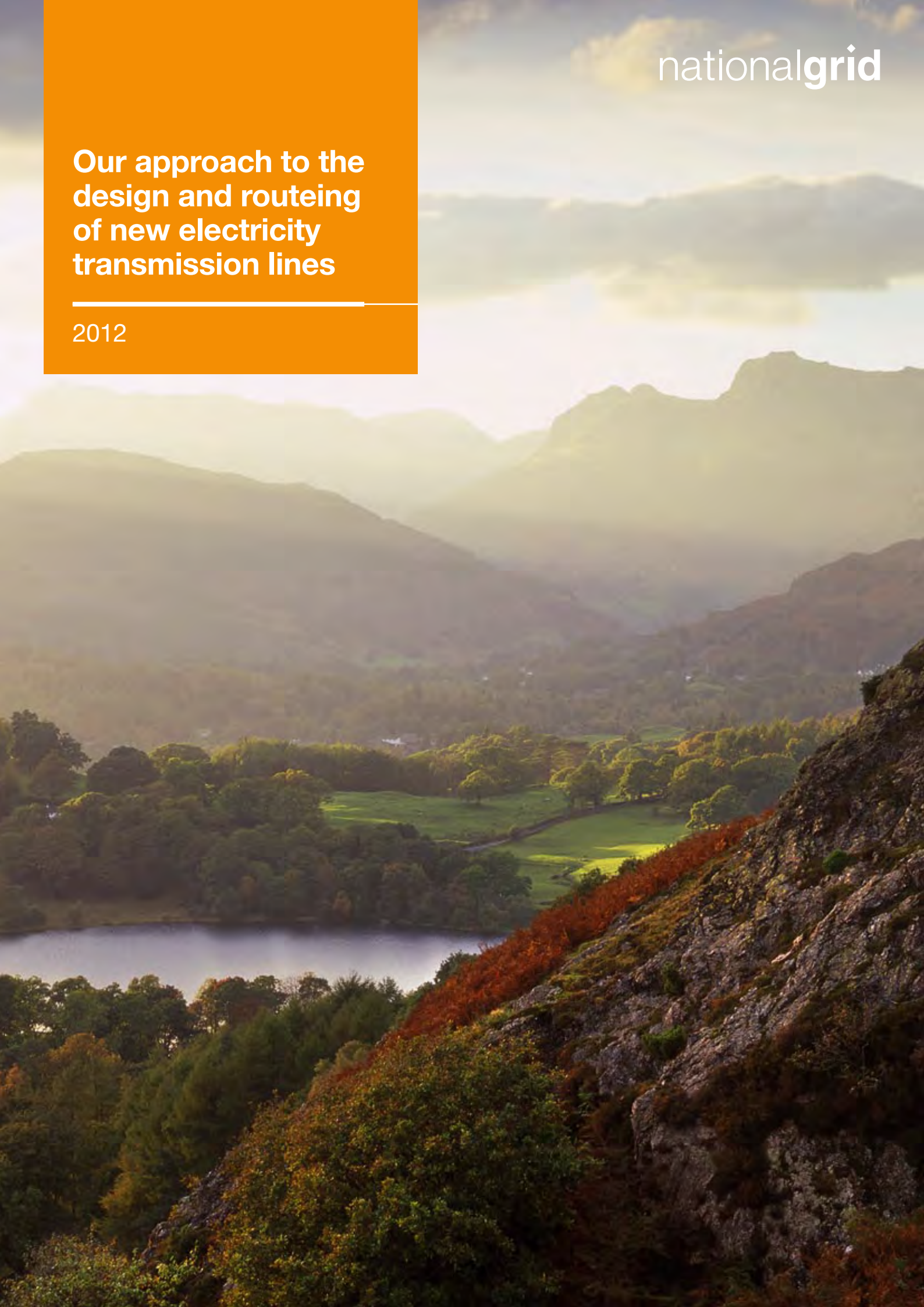
Appendix G: Our approach to the design and routing of new electricity transmission lines (2012)



**Our approach to the  
design and routing  
of new electricity  
transmission lines**

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2012









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National Grid's job is to connect people to the energy they use to warm and light their homes, to connect factories and offices to the power that keeps them going and to provide the infrastructure essential to maintain our modern lifestyle.

Our approach to the design and routing of new electricity transmission lines  
**Page 01**



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We own and manage the grid to which many different energy sources are connected. In Britain we run systems that deliver gas and electricity across the entire country, holding a vital position at the centre of the energy system.

That puts us at the heart of one of the greatest challenges facing our society: the creation of new sustainable energy solutions and the development of an energy system that can underpin our economic prosperity in the 21st century.

---

# Introduction

## The energy challenge and electricity transmission

The UK faces a major challenge in the way it produces and generates electricity. As a country we need to ensure secure and reliable energy supplies while at the same time tackling climate change. This means a significant investment in new low carbon power sources.

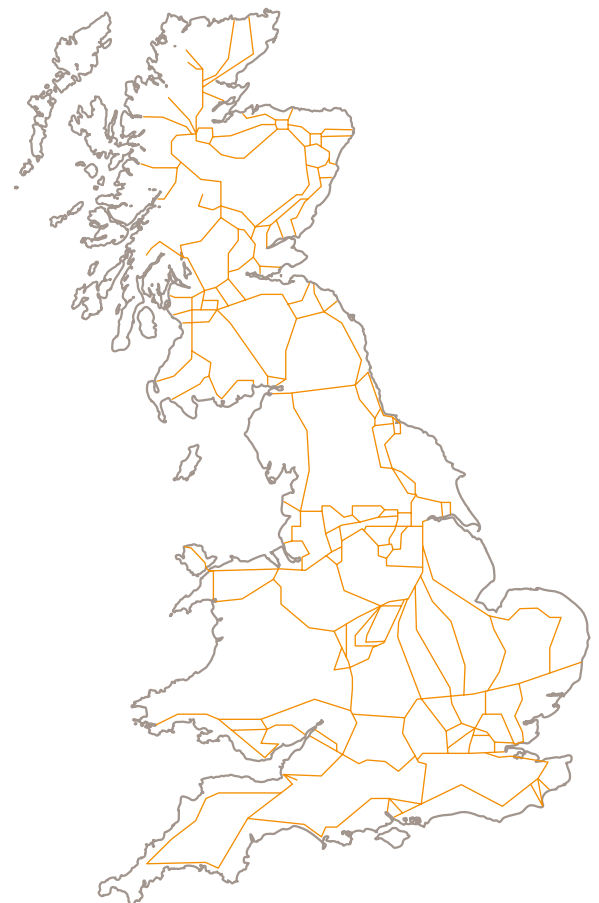
Part of this challenge is ensuring that these new power sources, whether from nuclear, wind and other renewables, gas or clean coal, are connected to the high voltage electricity transmission network in order to carry the electricity to where it is needed. In England and Wales, much of the new electricity generation will be sited on the coast, or offshore, where there is currently very little existing transmission infrastructure. New electricity transmission lines will therefore be required in these areas. We may also need to carry out work on existing areas of the network to upgrade and reinforce it to make it fit for these new low carbon sources of electricity.

Deciding where and how to build new high voltage electricity transmission lines is a complex issue. Most of the existing network takes the form of overhead lines, as these provide the most economic solution to the energy transmission challenge, and therefore the least impact on consumer bills. As we build the country's new network, we need to balance the need for secure and reliable energy supplies with affordability for bill-payers and the visual impact of the network.

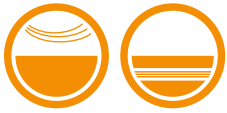
We are very aware of the impact of new overhead transmission lines on the landscape and on local communities, and we do consider other technologies to mitigate this such as placing new electricity lines underground as buried cables. This is known as 'undergrounding'.

We carried out a public consultation on this topic between December 2010 and July 2011, and we have listened to communities on this important issue. Respondents to this consultation demonstrated strong support for undergrounding. This document sets out how we consider undergrounding together with other methods of mitigating the visual impacts of our transmission lines.

## The current UK high voltage electricity transmission network



We have no inherent preference for either overhead or underground approaches and we will always seek to deliver the best balance.



### Our duties and obligations

We are regulated by Ofgem, the electricity and gas markets regulator, to ensure value for money for consumers and we must satisfy our various statutory duties (see back page). We are required under the Electricity Act (1989) to “develop and maintain an efficient, coordinated and economical electricity transmission system, and to facilitate competition in the supply and generation of electricity”. We need to be responsible for the cost of projects we promote as those costs will ultimately be borne by all electricity users.

We also have a duty to “consider the desirability of preserving amenity” when undertaking projects which includes impacts on communities, landscape and visual amenity, cultural heritage and ecological resources. To satisfy this duty, we seek to avoid areas which are nationally or internationally designated for their landscape, wildlife or cultural significance, such as National Parks.

We recognise, however, that not all sites that are valued by, and important for, the wellbeing of local communities are included in designated areas. Our approach therefore ensures that we consider all of the potential economic, environmental and social impacts of proposed projects, not just those relating to designated sites.

### Achieving the balance

Satisfying all of our duties can be complex and so we treat each project on a case-by-case basis to strike the appropriate balance. Our stakeholders confirmed that this was the right approach during our public consultation on undergrounding.

We believe that we will best achieve this balance by:



Consulting widely, effectively and at a formative stage of our project proposals.



Being open with information and transparent about the judgements we make.



Developing proposals that deliver what society needs from us.

Ultimately the relevant decision-making body has to decide whether our proposals strike the right balance and so we aim to bring them fully developed and well-considered plans on which to base their decisions.

# Our Process

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This document sets out how we identify the most appropriate location and technology for any new electricity transmission line in order to best satisfy society's needs. It sets out how we will collect data, undertake research and analysis, consult stakeholders and communities and listen to feedback in order to inform our judgements.

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To find out more about the Holford Rules and our other statutory duties see pages 18–20

The process involves the development of our projects from the earliest stage of identifying high-level options right through to the submission of detailed proposals. We begin by looking at all of the feasible options, which may cover a very wide geographical area and a number of different technologies such as underground cables or overhead lines. We then narrow down the options through a process of careful analysis and consultation. Having established which of the potential option(s), we think best meet(s) society's needs, we focus in on broad corridor locations for any new transmission lines by talking with local communities and others, and then we concentrate on where a new line might run to minimise any impacts on local people.

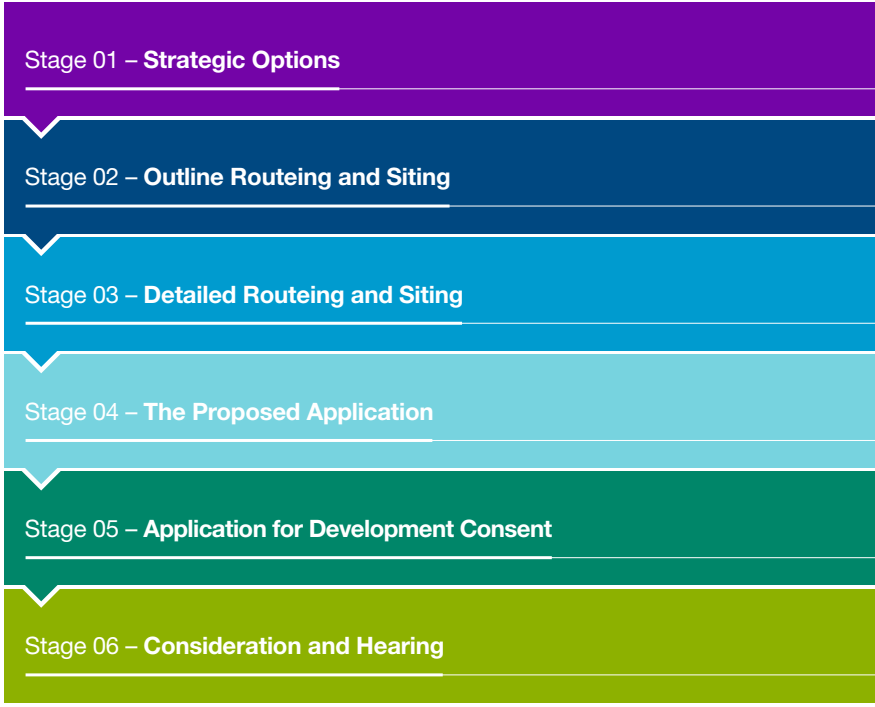
At each stage of refinement we gain more detailed information about the constraints that might affect a particular route. These might include designated sites like National Parks but could also include non-designated areas such as particularly sensitive landscapes or iconic views. As we learn more, we back-check at each stage to see if any new information exists that would have an impact on the best technology or route.

Our Approach is informed by the results of our undergrounding consultation and our experience of major transmission infrastructure projects. It complies with the requirements of the Planning Act 2008 and the National Policy Statement on Electricity Networks Infrastructure (EN-5), and retains the principles of the Holford Rules which give guidance on the routeing of overhead lines.

We will review our Approach in the light of:

- changes to our responsibilities, legislation, government policy or guidance;
- changes in best practice guidance in environmental, social or economic appraisal;
- relevant technology advances; or
- new information about the application or costs of different technologies.

This process, which is described fully overleaf, is intended as guidance for our project teams and for all stakeholders with an interest in our projects. All projects are different and where we need to deviate from this process, we will explain the reasons, and ensure that we still satisfy all of our obligations. For example, in the case of some smaller projects, such as the replacement of a short section of overhead line, we may combine some or all of stages 1, 2 and 3 to identify a preferred choice.







# Stage 1 Strategic Options

## What is needed?

The identified need could be: to connect new generation sources to the existing network; to create more capacity where needed in the existing network; or an investment in anticipation of potential new generation. The need case is kept under review throughout the development of the project.

## Do we need new infrastructure?

We always see if the existing network can accommodate the customer or capacity needs economically and efficiently before we would consider building any new infrastructure. We look at alternatives to meet the required need, which may include adjusting arrangements with customers, how we operate the network, or investments in equipment that can optimise the use of the existing network to reduce or avoid the need for major investment. This is usually more sustainable, less expensive and is likely to have the least visual impact.



## Identifying Strategic Options

Where new infrastructure is needed, we consider the many ways in which this could be achieved. We call this 'generating strategic options'. We will identify a number of different strategic options, which might include:

- different technologies (such as underground cables, gas-insulated lines, overhead lines or sub-sea High Voltage Direct Current (HVDC) cables);
- different geographical connection points; or
- a combination of the two.

## Technical Compliance Filter

Before we do any further work we make sure that all of the potential strategic options would work on our network and we reject any that would not meet technical standards. We do this because we need to understand which options would work in practice before we talk to stakeholders.

## Benefit Filter

There are potentially many ways in which we could meet the identified need, and many of them will be very similar. We reduce the number of options for stakeholders in an open and transparent way by making sure that every potential strategic option we take forward for further appraisal has some benefit over another option.





**At this Stage we explore with stakeholders the different ways in which we might meet the need for new infrastructure in a particular area, and discuss those options and how we assess them with core stakeholders.**



### Consult Core Stakeholders

At the early stages of the project we consult a number of organisations – referred to as our core stakeholders – who represent statutory interests. We talk to core stakeholders about the potential options we are considering and how we should assess them. We seek their views as to which considerations should inform our judgements based on what is important to local stakeholders. We ask the relevant local authorities to input into our consultation arrangements.

More information  
about who we  
consult and when  
is on page 16

### Options Appraisal

Options Appraisal is the method we use to compare options and analyse their relative costs and benefits. We take a structured approach to determining overall preferences among alternative options. This means that stakeholders can see the basis on which we have made our judgements and have balanced our duties. We consider environmental, socio-economic and technical issues alongside a capital and lifetime cost for each strategic option.

More information on  
Options Appraisal is  
on page 17



### Consult Core Stakeholders

We consult our core stakeholders on the results of options appraisal and ask for their views about the different strategic options.

### Preferred Strategic Option

We identify a preferred strategic option or options to take forward for further assessment. This may involve a choice of technology or may simply be the identification of connection points, with further development of the technology choice at Stage 2.

If a predominantly overhead route is preferred at this stage, there will still be a continuing process of appraisal and consultation throughout Stages 2 and 3, which will consider the ways in which the impact of a new line can be mitigated and may ultimately result in undergrounding of certain sections of the route. At this stage we may also look for options which have opportunities to remove existing infrastructure in order to minimise the overall 'wirescape'.

We may promote a sub-sea or predominantly underground strategic option at this stage, particularly in light of very significant constraints relating to landscape or visual issues. Such constraints might include: locations with physical difficulties in constructing an overhead line (such as in urban areas or mountains) or the presence of highly valued landscapes such as National Parks or Areas of Outstanding Natural Beauty (AONBs). Sometimes there are significant constraints to a sub-sea or underground solution, such as important ports and harbours, or significant concentrations of buried archaeology.

### Outputs



#### Need Case

Strategic Options Report  
including Options Appraisal

Project Consultation  
Strategy



## Stage 2 Outline Routeing and Siting

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### **Route Corridor Studies**

Routeing studies are carried out to identify broad potential corridors for the new transmission route within all strategic options that we are still considering. Similar siting studies are carried out to identify suitable locations for infrastructure, such as substations or converter stations if required.

When routeing overhead lines, we apply the Holford Rules (see page 18) and start to consider the types of mitigation that could offset any landscape or visual effects.

The routeing of sub-sea cables can be affected by constraints at the point of landfall, such as eroding shorelines or sensitive sand dune systems, and by marine constraints such as shipping lanes, fisheries, major ports and harbours, and ecological constraints, such as Special Protection Areas or Special Areas for Conservation. If a constraint was identified at this stage that could not be avoided or mitigated, then we may need to reconsider land-based options.

For onshore underground options we would consider the type of technology (cross-linked polyethylene insulated (XLPE) or Gas-Insulated Lines (GIL)) and whether the cable would be buried directly or in a surface trough or tunnel. When routeing underground cables, we may be restricted by built development, topography, soil type or existing land use. There may also be valuable habitats or cultural heritage sites that would be affected by ground disturbance. In these cases, we try to find a route corridor that avoids these constraints altogether. Where that is not possible, we may consider placing a section of line overhead on an otherwise underground route. The siting of sealing end compounds (which are used to make the transition from underground cable to overhead line) also requires careful consideration.



**We identify and appraise a number of potential route corridors through which the transmission line could be routed and identify potential locations for associated infrastructure. We consult again with core stakeholders and local communities.**



### Consult Core Stakeholders

We consult our core stakeholders on the potential route corridor options we are considering and on the scoping of the next stage of Options Appraisal (below). We again seek views on the factors that are most important to local stakeholders and which are likely to be the most significant in judging the route corridors that would best serve society's needs.

### Options Appraisal

Options Appraisal is again applied to determine the environmental, socio-economic, technical, and cost implications associated with the different route corridor options. At this stage we have more detailed information about the different route corridors and carry out a more detailed appraisal.



### Consult Stakeholders and Communities

During Stage 2 we will carry out a public consultation, which examines all of the options we have considered, and asks for views both on our preferred strategic option and the potential route corridors we have identified to achieve this. As a result of this public consultation, we may re-examine options that we have previously discounted or consider new alternatives proposed by members of the public. We produce a feedback report which will identify all of the comments received and how we intend to take them into account. Where we cannot take someone's comments into account, we will explain why not.

### Choice of Preferred Route Corridor

The results of the consultations, together with all of the studies carried out to this point, are used to identify the preferred route corridor or corridors.

In cases where we have previously chosen a predominantly overhead option, we may propose a fully overhead corridor or a route corridor which is a mixture of overhead and underground

technologies, depending upon the constraints identified. Candidates for undergrounding might include: locations with physical difficulties in constructing an overhead line (such as in urban areas), wide river or estuary crossings, the presence of highly valued landscapes (which include National Parks and AONBs but could also include particularly sensitive landscapes and iconic views or areas where other potential impacts could only be mitigated by undergrounding). This is not an exhaustive list and all projects will be considered on a case-by-case basis.

If the preferred route corridor is predominantly overhead line, there will still be a continuing process of appraisal and consultation throughout Stage 3, as a result of which we may propose undergrounding certain sections of the route.

Where we have previously chosen a sub-sea strategic option, we will identify the preferred marine corridor and the locations for any associated land-based infrastructure. Where we have chosen an underground strategic option, we will identify the preferred underground corridor and the locations for any associated above-ground infrastructure. In some cases, we may not make a decision on technology at Stage 2, but simply identify a land-based corridor, and determine the most appropriate technology at Stage 3 once we have a full understanding of all of the constraints.

### Outputs



Route Corridor Study  
including Options Appraisal

Project Consultation  
Strategy

Consultation  
Feedback Report



# Stage 3

## Detailed Routeing and Siting

### Development of the Detailed Alignment

Whether the preferred route corridor is predominantly overhead, underground or sub-sea, detailed survey and assessment work is carried out to find the alignment of the transmission line which best satisfies all of our obligations and the needs of stakeholders. In doing this we seek to avoid as far as possible any impacts on people, settlements, and environmentally sensitive areas.

We continue to refine the route alignment to minimise any visual and other environmental impacts, in consultation with stakeholders and communities.

In cases where a predominantly overhead route has been selected, we will continue to apply the Holford Rules and we will identify any sections where it would be more appropriate to place the infrastructure underground. We may propose other forms of mitigation, which could involve tree planting or alternative pylon designs or the removal of other electricity transmission or distribution infrastructure. We will use the same approach for siting the associated land-based / above-ground infrastructure such as substations, converter stations or sealing end compounds.



### Consult Stakeholders and Communities

We continue to exchange information with our stakeholders during the development of the detailed alignment. During consultation with the public we may establish community forums as a mechanism to support this consultation.

We may also establish thematic groups, which will involve experts including local representatives of technical consultees to review our approach to specific issues. We will revisit earlier stages of our project development as required and will publish the outcomes of our public consultations explaining why we have selected a particular proposal. This will allow stakeholders to see how and where we have exercised our judgement and the factual basis upon which we have done so. We will develop our draft Statement of Community Consultation with the relevant local authorities, which sets out who and how we will consult on our proposals.

### Environmental Impact Assessment and Options Appraisal

Where we are required to do so, we will carry out a full Environmental Impact Assessment of our preferred alignment and will consult with key stakeholders on the scope and results of this study. We may use Options Appraisal to compare the environmental and socio-economic performance of alternative alignments, and we will publish the results of our appraisal of the preferred alignment in a report or draft Environmental Statement.



Preliminary Environmental Information

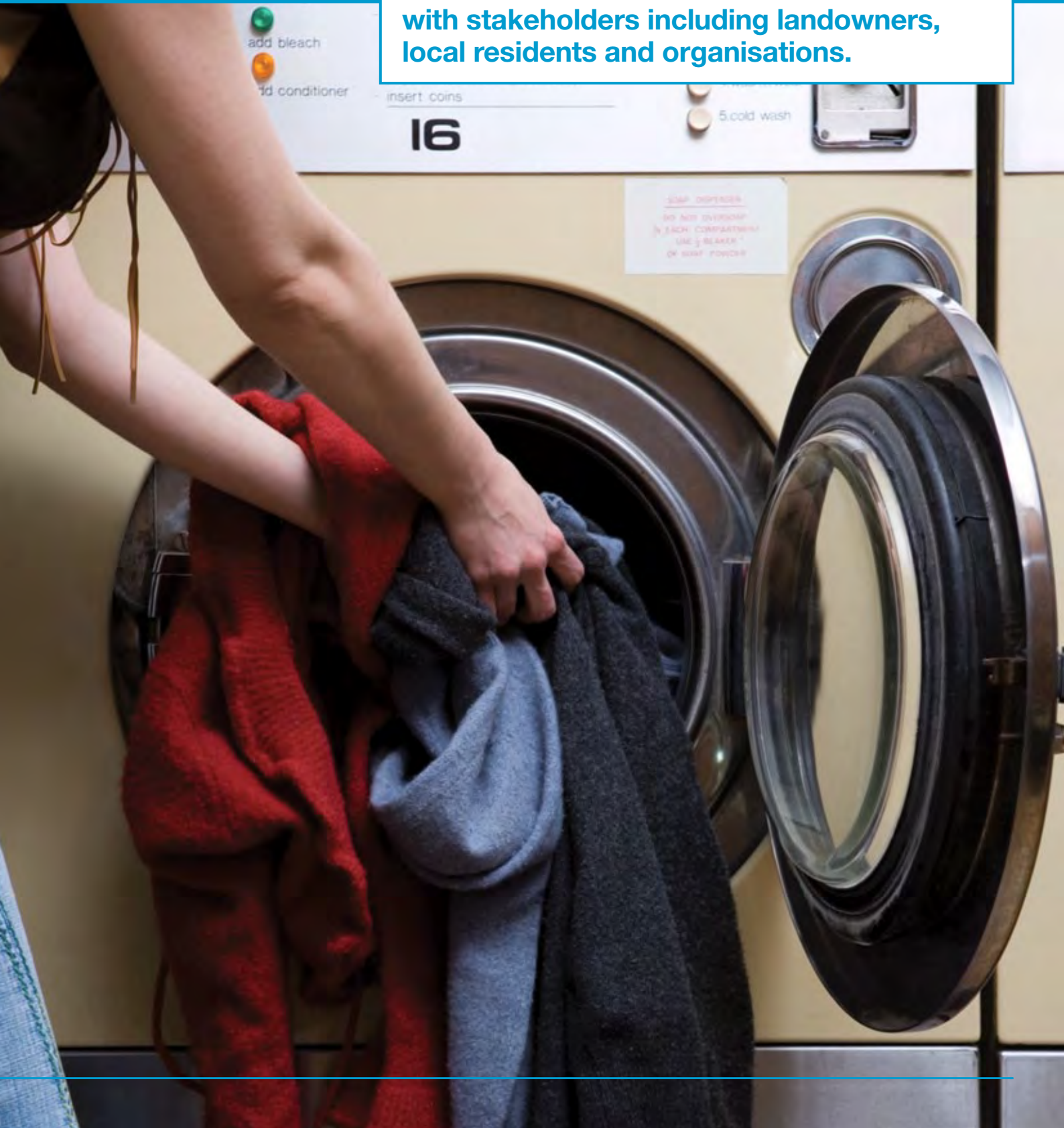
Outputs of Options Appraisal if appropriate

Draft Statement of Community Consultation

Consultation Feedback Report



**Having identified a broad route corridor, we look within that route to identify and appraise the preferred alignment through which the transmission line will be routed and the locations of any associated infrastructure. We do this in close liaison with stakeholders including landowners, local residents and organisations.**





# Stage 4

## The Proposed Application



We hold a public consultation on our draft proposals to help us prepare our application for submission to the Planning Inspectorate for decision.

### Consult All Stakeholders

We will carry out a public consultation on our proposed application as required by Sections 42 and 47 of the Planning Act (2008). This consultation includes communities, local councils, expert consultees and those who may be affected by our proposals. At the close of the consultation period, we will review our proposals and make any necessary amendments to what we propose in the light of information received through consultation. If necessary we will carry out further survey and appraisal work for alternative solutions.

We will produce a Consultation Report which sets out all of the feedback we have received throughout the process and how we have responded to it. This will allow all stakeholders who have contributed to see how their comments have been taken into account.

Examples of current and existing Consultation Reports can be found on our website

### Preparation of documentation

Having carried out detailed assessments and consultation with the public and key stakeholders we will prepare all of the documents necessary for our proposed application.

We will consult with Local Planning Authorities and seek to agree Statements of Common Ground with them and potentially with other interested parties.

### Outputs



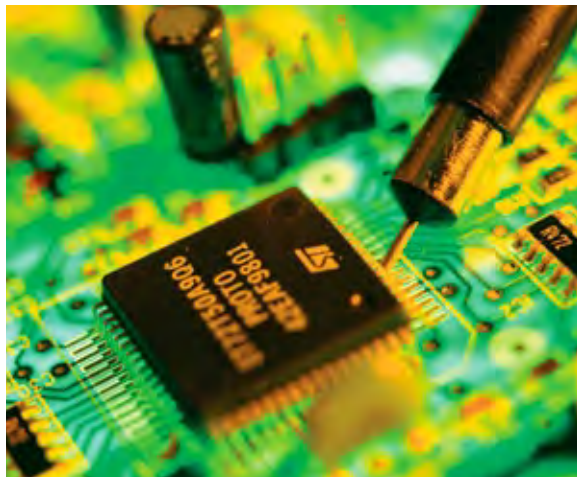
Consultation Report

Draft Application Documents

Statements of Common Ground

Statement of Community Consultation

Draft Environmental Statement





## Stage 5 Application for Development Consent

### Submission of our application

Once we have assessed the outcomes of the public consultation and made any necessary changes to the proposals we will submit our application for development consent to the Planning Inspectorate or other relevant decision-maker.

We follow the processes of the Planning Inspectorate for overhead line applications in England and Wales. We formally notify the public, core stakeholders and other bodies prescribed in the APFP Regulations 2009\* of our application and those consulted have the opportunity to make relevant representations to the Planning Inspectorate and to register themselves as interested parties.

In England, our application will usually also include any additional development associated with overhead lines, such as substations and sealing end compounds.

In Wales, consent for this associated infrastructure will be determined by the relevant local planning authority.

Underground cables in England and Wales are considered as permitted development which means that planning permission has already been granted. Any planning applications for associated above-ground infrastructure such as sealing end compounds and substations are determined by the relevant local planning authority if not as part of a Development Consent Order (DCO) application.

For sub-sea cables, applications in English waters are determined by the Marine Management Organisation, and in Welsh waters by the Welsh Government. In both cases, applications for associated onshore infrastructure such as converter stations will be determined by the relevant local planning authority.

\* Infrastructure Planning (Application: Prescribed Forms and Procedure) Regulations 2009







## Stage 6 Consideration and Hearing

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**Once we have submitted our application we will provide such further information on our proposals as may be required for a hearing or Public Inquiry.**

**We will continue to follow the process of the relevant decision-making authority (see Stage 5) and to engage with interested parties.**

**Interested parties have the opportunity to influence the decision-making body through written representations and by giving evidence at a hearing or Public Inquiry.**







The following reports are available  
at [www.nationalgrid.com/  
majorprojectdocuments](http://www.nationalgrid.com/majorprojectdocuments)

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**Our approach to Options Appraisal**

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**Our approach to Consultation**

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**Our approach to Socio-economics**

# Who do we consult?

## Core stakeholders

Our core stakeholders for most projects would be drawn from the following:

- Local authorities
- Environment Agency
- English Heritage and/or Cadw
- Natural England and/or Countryside Council for Wales
- Marine Management Organisation and/or Welsh Government
- Joint Nature Conservation Committee
- Other parties proposed by the above
- Scottish Natural Heritage and Marine Scotland for projects that link to the network in Scotland

These parties are consulted from the earliest stages of our projects as a matter of good practice to ensure we take the best technical advice and local knowledge into account in the early development of our projects. The group of stakeholders is expanded and refined as the project develops and more local groups become involved. At this early stage we do not usually consult the public, as we may not have enough information about where any new lines might be located to have a meaningful dialogue. However the role of local groups including local planning authorities is partly to represent local opinion.

## What is the role of the public?

We talk to people who may be affected by our new transmission lines throughout the development of each project. Our first public consultation will normally take place at Stage 2, but will cover all issues in the development of the project to date including the need case, strategic options and route corridor options. This gives local communities the opportunity to review the judgements we have made, and the information we have based them on. We publish the results of all our consultations, so that stakeholders can see how they have influenced the design of the scheme.

At the detailed routing stage, we talk regularly to our consultees including more local stakeholders such as parish councils and local interest groups. We also consult with landowners along the proposed alignment. A further formal period of public consultation is held before we submit an application for development consent as required by the Planning Act 2008.

Once an application is submitted, taking account of the feedback from local people, the public can continue to make representation to the relevant decision-making body either in writing or in person at a hearing or Public Inquiry.

For more information on Options Appraisal, please refer to National Grid's 'Our Approach to Options Appraisal' document which can be found at [www.nationalgrid.com/majorprojects](http://www.nationalgrid.com/majorprojects)



# Options Appraisal

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Our Options Appraisal methodology takes the following considerations (referred to in our internal guidance as 'topics' and 'sub-topics') into account when appraising alternative strategic options or route corridors.

## Environment

- Landscape/Visual
- Ecology
- Historic Environment
- Air Quality
- Noise and Vibration
- Soils and Geology
- Water

## Socio-economic

- Aviation and Defence
- Traffic and Transport
- Local Economic Impact

## Technical

- Technical Complexity
- Delivery
- Capacity
- Technology
- Network Efficiency/Benefits

## Cost

- Capital Cost
- Lifetime Cost

The methodology helps us to assess the implications of each alternative across a range of critical issues with the input of core stakeholders and the public. By assessing each of these areas, we are able to judge which option will deliver the needed infrastructure whilst balancing the various considerations such as minimising the visual impact and reducing the cost on consumers. There is no hierarchy between the environmental, socio-economic, technical and cost requirements, and each project will take into account the views of its stakeholders in determining the weight to be attributed to different sub-topics.

Whilst the results of Options Appraisal will inform decision-making, the methodology itself does not provide the answer. Instead it objectively sets out the implications of the different options across a wide range of subjects, and broadly shows which option performs best across the board. Those sub-topics that are considered by the stakeholders to be especially important will merit particular consideration in the decision-making process.

Options Appraisal is a robust and transparent approach to the option selection process, ensuring that all interested parties will be able to understand the information and analysis that underpin the judgements we make.

# The Holford Rules

These guidelines on overhead line routing were first set out in 1959. They are presented in the National Policy Statement for Electricity Networks Infrastructure (EN-5) and will continue to form the basis on which we route overhead lines.

Since the formulation of the original Rules, formal requirements for environmental assessment have been introduced. Whilst environmental assessment for overhead lines addresses wider topics than the visual amenity issue on which the Rules concentrate, they remain a valuable tool in selecting and assessing potential route options as part of the environmental assessment process. The Rules and our added notes of clarification are set out below:

## Rule 1

Avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the line in the first place, even if the total mileage is somewhat increased in consequence.

## Note on Rule 1

Investigate the possibility of alternative routes, avoiding where possible the areas of the highest amenity value. The consideration of alternative routes must be an integral feature of environmental statements.

Areas of highest amenity value include: Areas of Outstanding Natural Beauty; National Parks; Heritage Coasts; World Heritage Sites and Registered Parks and Gardens.

## Rule 2

Avoid smaller areas of high amenity value or scientific interests by deviation, provided this can be done without using too many angle towers, i.e. the bigger structures which are used when lines change direction.

## Note on Rule 2

Some areas (e.g. Sites of Special Scientific Interest) may require special consideration for potential effects on ecology (e.g. to their flora and fauna).

Where possible choose routes which minimise the effects on the setting of areas or architectural, historic and archaeological interest including Conservation Areas, Listed Buildings, Listed Parks and Gardens and Ancient Monuments. Again, recognise that some sites of value may not be within designated areas.

## Rule 3

Other things being equal, choose the most direct line, with no sharp changes of direction and thus with fewer angle towers.

## Note on Rule 3

Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds.

## Rule 4

Choose tree and hill backgrounds in preference to sky backgrounds wherever possible. When a line has to cross a ridge, secure this opaque background as long as possible, cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees.



### Rule 5

Prefer moderately open valleys with woods where the apparent height of towers will be reduced, and views of the line will be broken by trees.

### Note on Rules 4 and 5

Utilise background and foreground features to reduce the apparent height and domination of towers from main viewpoints. Minimise the exposure of numbers of towers on prominent ridges and skylines. Where possible avoid cutting extensive swathes through woodland blocks and consider opportunities for skirting edges of copses and woods. Protect existing vegetation, including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscapes.

### Rule 6

Where country is flat and sparsely planted, keep the high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concentration of lines or 'wirescape'.

### Note on Rule 6

In all locations minimise confusing appearance.

Arrange wherever practicable that parallel or closely related routes are planned with tower types, spans and conductors forming a coherent appearance; where routes need to diverge, allow where practicable sufficient separation to limit the effects on properties and features between the lines.

### Rule 7

Approach urban areas through industrial zones, where they exist; and when pleasant residential and recreational land intervenes between the approach and the substation, carefully assess the comparative costs of undergrounding.

### Note on Rule 7

When a line needs to pass through a development area, route it so as to minimise as far as possible the effect on development.

Alignments should be chosen after consideration of effects on the amenity of existing development and on proposals for new development.

When siting substations take account of the effects of the terminal towers and line connections that will need to be made and take advantage of screening features such as ground form and vegetation.

### Supplementary notes

#### Residential Areas

Avoid routing close to residential areas as far as possible on grounds of general amenity.

#### Designations of County, District and Local Value

Where possible choose routes which minimise the effect on Special Landscape Areas, areas of Great Landscape Value and other similar designations of County, District or Local Value.

#### Alternative Tower Designs

In addition to adopting appropriate routing, evaluate where appropriate the use of alternative tower designs now available.

## Our Statutory Duties

These are some of National Grid's statutory duties most relevant to our development of new infrastructure.

Section 9(2) of the Electricity Act 1989  
(General duties of licence holders)

"It shall be the duty of the holder of a licence authorising him to transmit electricity:

(a) to develop and maintain an efficient, co-ordinated and economical system of electricity transmission;..."

Section 38 and Schedule 9 of the  
Electricity Act 1989

"(1) In formulating any relevant proposals, a licence holder or a person authorised by exemption to generate, transmit, distribute or supply electricity:

(a) shall have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archeological interest; and

(b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects."

Section 11A(2) of the National Parks and Access to the Countryside Act 1949 (Duty of certain bodies and persons to have regard to the purposes for which National Parks are designated).

"In exercising or performing any functions in relation to, or so as to affect, land in a National Park, any relevant authority shall have regard to the purposes specified in subsection (1) of section five of this Act and, if it appears that there is a conflict between those purposes, shall attach greater weight to the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the area comprised in the National Park."


Section 85 of the Countryside and Rights of Way Act 2000 (General duty of public bodies etc)

"(1) In exercising or performing any functions in relation to, or so as to affect, land in an area of outstanding natural beauty, a relevant authority shall have regard to the purpose of conserving and enhancing the natural beauty of the area of outstanding natural beauty."

Section 40 of the Natural Environment and Rural Communities Act 2006 states that "Every public body must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."





A scenic landscape photograph showing rolling green hills and valleys. In the foreground, there are lush green fields with scattered trees and a few small buildings. The middle ground features more hills with dense forests. In the background, a range of mountains is visible under a sky with soft, golden light, suggesting sunrise or sunset. The overall atmosphere is peaceful and natural.

**National Grid**

National Grid House,  
Warwick Technology Park,  
Gallows Hill, Warwick.  
CV34 6DA United Kingdom  
Registered in England and Wales  
No. 4031152



## Appendix H: Project News 2012 – dual language

## Mae National Grid am glywed barn pobl Gogledd Cymru



Mae National Grid wedi lansio cam cyntaf ei ymgynghoriad ar ei gynllun i gysylltu cynlluniau cynhyrchu trydan newydd yng Ngogledd Cymru.

**Mae cyflenwad ynni'r DU yn wynebu her fawr a bydd yn effeithio ar bob un ohonom. Er mwyn cyrraedd targedau newid yn yr hinsawdd ac i adnewyddu pwerdai sy'n heneiddio, mae angen cenhedlaeth newydd o brosiectau cynhyrchu ynni carbon isel, a bydd angen cysylltu'r ynni newydd hwn â'r rhwydwaith trydan.**

Yng Ngogledd Cymru, mae nifer o brosiectau ynni carbon isel yn cael eu hystyried, ac o ganlyniad bydd yn rhaid i ni gryfhau'r rhwydwaith presennol.

Rydym yn gofyn am ymateb y cyhoedd ar ein cynigion i gysylltu gorsaf bŵer niwclear arfaethedig Horizon yn Wylfa, sydd hyd at 3.6 gigawatt (GW), ynghyd â 2GW o ynni gwynt ar y môr ym Môr Iwerddon sy'n cael ei gynnig gan Celtic Array, a fydd hefyd yn cael ei gysylltu ag Ynys Môn.

Er nad yw rhanddeiliaid Horizon, RWE npower ac E.ON yn bwrw ymlaen â'r cynlluniau i gynhyrchu pŵer niwclear yn y DU, mae Horizon yn ffyddiog y ceir prynwr newydd, ac maent wedi cadw'u contract â National Grid. Rydym felly'n parhau â'n hymgyngoriad i sicrhau bod y prosiect mawr a thechnegol gymhleth hwn yn parhau ar y trywydd cywir.

Er mwyn ymdopi â'r prosiect cynhyrchu ynni newydd sylweddol hwn, rydym wedi dod i'r casgliad bod angen uwchraddio'r rhwydwaith presennol yng Ngogledd

Cymru gyda chysylltiadau trydan newydd. Rydym wedi edrych ar nifer o opsiynau i gyflawni hyn, gan ddefnyddio technegau ar y môr ac ar y tir, ac rydym wedi asesu pob un o'r opsiynau hyn gyda golwg ar yr effeithiau a gânt ar yr amgylchedd a'r gymuned, eu dichonoldeb technegol a chostau oes gyfan. Rydym hefyd wedi eu trafod gyda nifer o sefydliadau er mwyn clywed eu barn hwy.

Yn dilyn proses werthuso drylwyr, rydym wedi penderfynu ar yr opsiwn a ffeirir gennym ac y credwn sy'n sicrhau cydbwysedd gorau rhwng pob un o'r ystyriaethau pwysig y mae'n rhaid i ni eu cadw mewn cof.

### Dweud eich dweud

Mae'r opsiwn a ffeirir gennym yn cynnwys y tri phegyn gwaith allweddol canlynol:

#### **WP Rhwng Wylfa a Phentir**

**Cysylltiad uwchben ychwanegol (gweler tudalen pedwar)**

#### **WG Gorllewin Gwynedd**

**Is-orsaf newydd er mwyn cynnal cyflenwadau dibynadwy i'r ardal (gweler tudalen pump)**

#### **G Aber Afon Glaslyn**

**Cysylltiad tanddaearol ychwanegol i ymdopi â'r cynnydd yn y trydan a gynhyrchir (gweler tudalen chwech)**

Ar gyfer ein cynigion rhwng Wylfa a Phentir, rydym yn ystyried pedwar llwybr cyffredinol lle gellid adeiladu'r cysylltiad uwchben ychwanegol. Ar gyfer ein cynigion yng Ngorllewin Gwynedd, rydym yn ystyried tri lleoliad posibl ar gyfer yr is-orsaf, ac ar gyfer ein cynigion yn Aber Afon Glaslyn, rydym yn cynnig llwybr posibl a ffeirir ar gyfer y cysylltiad tanddaearol ychwanegol.

Yng ngham cyntaf yr ymgynghoriad, byddwn yn croesawu eich sylwadau ar bob un o'r cynigion hyn.

Rhoddir ystyriaeth ofalus er mwyn lleihau unrhyw effeithiau o ganlyniad i'n gwaith arfaethedig, gydag opsiynau sy'n cynnwys gofal wrth greu llwybrau a lleoli, plannu a chuddio er mwyn lleihau'r effeithiau gweledol, creu cynefinoedd, mesurau i reoli gwastraff ac i leihau sŵn a thraffig, ac ystyrir gosod rhannau o'r cysylltiad uwchben o dan y ddaear.

Drwy gydol y broses ymgynghori, byddwn yn adolygu'r opsiwn a ffeirir gennym er mwyn sicrhau mai'r opsiwn mwyaf priodol a fydd yn cael ei fabwysiadu yn y diwedd. Yn sicr, bydd yn rhaid ailasesu'r opsiynau os na phenderfynir bwrw ymlaen â gorsaf niwclear neu ddull arall o gynhyrchu trydan, ac ni fyddwn yn adeiladu dim oni bai ein bod yn gwbl bendant y bydd ei angen.

## National Grid Yng Ngogledd Cymru



### Annwyl breswlydd,

Fy enw i yw Martin Kinsey a fy swydd i yw Uwch Reolwr y Prosiect.

**Fel y bydd rhai ohonoch chi'n gwybod, gwaith National Grid yw cysylltu pobl â'r ynni a ddefnyddir gennym. Yr ynni a ddefnyddir i gynhesu a goleuo ein cartrefi, yr ynni sy'n cadw'n ffatrioedd a'n swyddfeydd i weithio, a'r seilwaith sy'n hanfodol i'n dull modern o fyw.**

Efallai y byddwch yn ymwybodol hefyd bod nifer o brosiectau cynhyrchu trydan newydd yn cael eu hystyried yng Ngogledd Cymru. Mae'r prosiectau hyn, fel llawer o rai eraill ym mhob rhan o'r DU, yn bwysig dros ben er mwyn cymryd lle'r gorsafydd ynni presennol sy'n dod i ddiwedd eu hoes.

Rydym yn cysylltu'r holl brosiectau newydd hyn i gynhyrchu ynni â'r rhwydwaith trydan. Mae hyn yn golygu bod yn rhaid cryfhau'r rhwydwaith presennol mewn rhai mannau fel y gall ymdopi â'r trydan ychwanegol a fydd yn cael ei gynhyrchu.

Yn y cylchlythyr hwn cewch fwy o wybodaeth am bob un o'r pecynnau gwaith sy'n ffurfio'r opsiwn a ffeirir gennym i gysylltu'r prosiectau cynhyrchu trydan newydd sy'n cael eu hystyried yng Ngogledd Cymru.

Yn ystod yr wythnosau nesaf, byddwn yn trefnu nifer o arddangosfeydd yn eich ardal lle byddwn yn egluro'n cynigion yn fwy manwl a bydd aelodau'r tîm ar gael i ateb unrhyw gwestiynau sydd gennych – gweler y dudalen gefn am ragor o fanylion.

**Rydym yn gobeithio cwrdd â chymaint â phosibl ohonoch chi ac mae clywed eich barn yn eithriadol o bwysig i ni fel sail i'r penderfyniadau a wneir.**

## Dysgwch fwy

Bydd y cylchlythyr hwn yn rhoi trosolwg i chi o'r gwaith yr ydym yn gobeithio'i wneud yng Ngogledd Cymru a sut y gallwch gymryd rhan yn yr ymgynghoriad.

### Tudalennau 2-3

Trosolwg o'n gwaith yng Ngogledd Cymru

### Tudalen 4

Ein gwaith arfaethedig rhwng Wylfa, Ynys Môn a Phentir, Gwynedd

### Tudalen 5

Ein gwaith arfaethedig yng Ngorllewin Gwynedd

### Tudalen 6

Ein gwaith arfaethedig yn Aber Afon Glaslyn

### Tudalen 7

Sut y gallwch chi ddweud eich dweud

### Tudalen 8

Dyddiadau a lleoliadau'r arddangosfa



# Yr opsiynau rydym wedi'u hystyried ar gyfer cysylltiadau

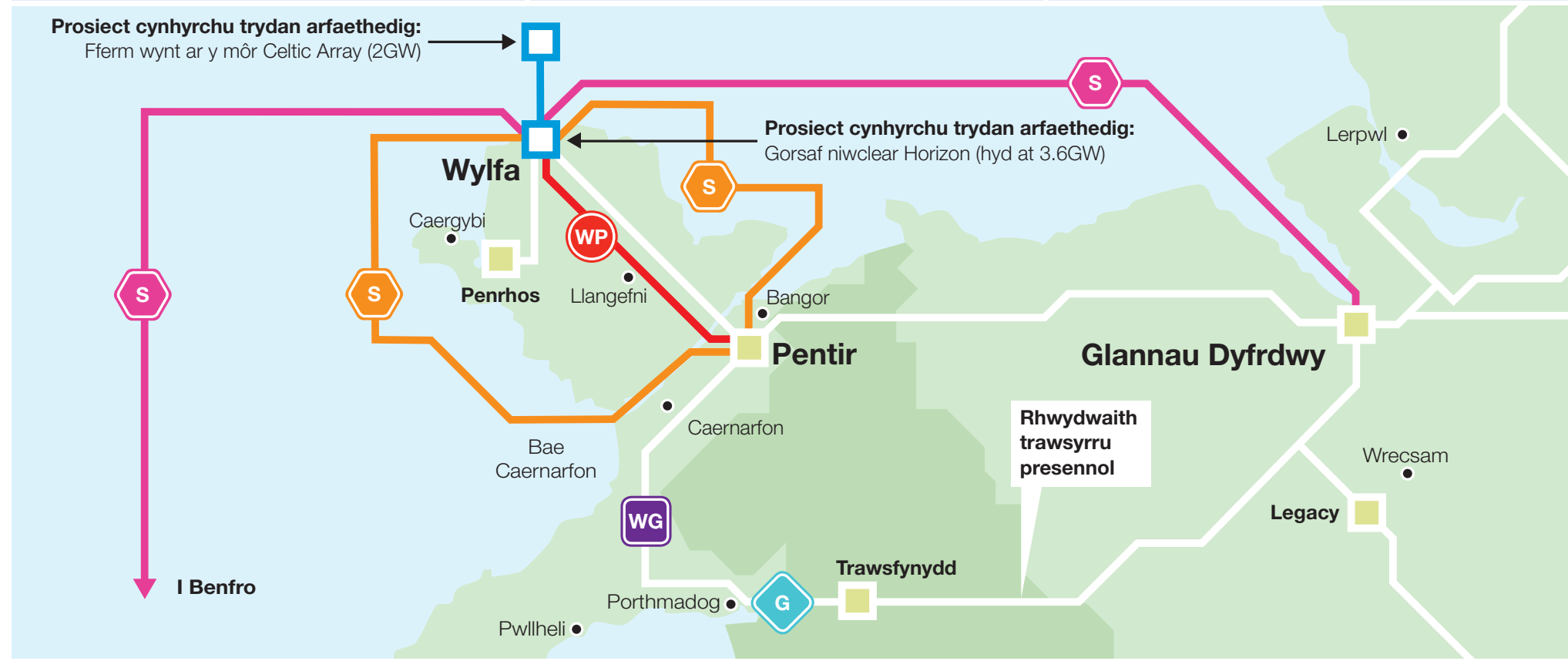
Er mwyn canfod y ffordd orau i gysylltu'r prosiectau cynhyrchu ynni newydd yng Ngogledd Cymru, mae National Grid yn dilyn proses i ganfod 'opsiynau strategol'.

Yn ystod y broses hon, rydym wedi edrych ar nifer fawr o fforddau posibl o gysylltu'r prosiectau cynhyrchu ynni sy'n cael eu cynnig yng Ngogledd Cymru â'r rhwydwaith trydan. Roedd y rhain o dan y môr, ar y tir, neu gyfuniad o'r ddau a rhoddir crynodeb ohonynt isod.

Cewch fwy o fanylion y dull sy'n cael ei fabwysiadu gan National Grid pan fydd yn cysylltu prosiectau cynhyrchu ynni newydd drwy ddarllen 'Our approach to the design and routing of new electricity transmission lines'. Cewch hefyd ragor o wybodaeth am y gwahanol opsiynau a ystyriwyd gennym i gysylltu'r prosiectau cynhyrchu trydan yng Ngogledd Cymru drwy ddarllen ein 'Strategic Options Report'. Gweler y dudalen gyferbynt am fanylion.

## MAE'R DIAGRAM ISOD YN DANGOS Y GWAHANOL OPSIYNAU CYSYLLTU A YSTYRIWYD GENNYM:

O dan y môr	O dan y môr/ar y tir	Ar y tir
<p><b>O dan y môr</b></p> <p>Byddai angen cysylltiad newydd o dan y môr; un ai rhwng Wylfa a Glannau Dyfrdwy, neu rhwng Wylfa a Phentir.</p>	<p><b>O dan y môr, ac uwchben/tanddaearol</b></p> <p>Byddai angen cysylltiad newydd o dan y môr o amgylch arfordir gorllewinol neu ddwyreiniol Ynys Môn rhwng Wylfa a Phentir. Byddai angen cysylltiad ychwanegol, un ai uwchben neu danddaearol, i gryfhau'r rhwydwaith yn Aber Afon Glaslyn. Byddai angen is-orsaf newydd yng Ngorllewin Gwynedd hefyd. Hefyd byddai angen gwneud peth gwaith ychwanegol ar y system bresennol.</p>	<p><b>Uwchben/tanddaearol rhwng Wylfa-Pentir-Trawsfynydd</b></p> <p>Byddai angen cysylltiad ychwanegol, un ai uwchben neu danddaearol, rhwng Wylfa a Phentir. Byddai angen cysylltiad ychwanegol, un ai uwchben neu danddaearol, i gryfhau'r rhwydwaith yn Aber Afon Glaslyn. Byddai angen is-orsaf newydd yng Ngorllewin Gwynedd hefyd. Hefyd byddai angen gwneud peth gwaith ychwanegol ar y system bresennol.</p>



## Adolygu'r opsiynau

<p><b>O dan y môr – HVDC/AC</b></p> <ul style="list-style-type: none"> <li>Ar gyfer cysylltiadau o dan y môr i Lannau Dyfrdwy neu Benfro, byddai angen i National Grid ddefnyddio ceblau HVDC (Cerrynt Uniongyrchol Foltedd Uchel). Ar gyfer y cysylltiad o dan y môr i Bentir, gallent ddefnyddio un ai ceblau HVDC neu AC (Cerrynt Eilectol), gan fod y pellter yn llawer llai.</li> <li>Rhaid cadw ystyriaethau amgylcheddol mewn cof wrth osod ceblau o dan y môr. Fodd bynnag, gellir lleihau neu osgoi'r rhain yn gyfan gwbl drwy ddevis y llwybr yn ofalus.</li> <li>Mae HVDC yn dechnoleg sy'n datblygu. Nid oes dim system HVDC o'r capasiti hwn wedi'u gosod mewn unrhyw le yn y byd. Byddai'r naill opsiwn neu'r llall yn risg technegol ac ariannol.</li> <li>Yn achos cysylltiadau HVDC, byddai angen gorsafod trawsnewid newydd ar ben pob cysylltiad. Mae gorsaf drawsnewid arferol tua'r un maint â warws DIY fawr.</li> </ul>	<p><b>Amcangyfrif y byddai'r costau cyfalaf rhwng £1.6 biliwn a £2 biliwn ar gyfer HVDC, a rhwng £2.2 a £2.5 biliwn ar gyfer cysylltiadau AC o dan y môr. Mae'r gost yn bwysig gan y bydd yn cael ei throsglwyddo i'r cyhoedd yn y diwedd drwy eu biliau trydan.</b></p> <p><b>Ar ôl ystyried yr holl opsiynau hyn, nid yr opsiwn o dan y môr yw'r opsiwn cysylltu a ffeirir gennym ar hyn o bryd.</b></p> <p><b>Is-orsaf yng Ngorllewin Gwynedd</b></p> <p>Yn achos pob opsiwn (heblaw HVDC o dan y môr), byddai angen is-orsaf newydd yng Ngorllewin Gwynedd i gynnal cyflenwadau dibynadwy i'r ardal.</p>	<p><b>Uwchben/tanddaearol rhwng Wylfa a Phentir</b></p> <ul style="list-style-type: none"> <li>Byddai effeithiau llwybr cyfan gwbl danddaearol yn cael eu cyfyngu'n bennaf i'r cam adeiladu.</li> <li>Mae effaith weledol cebl uwchben a'i effaith ar y dirwedd yn cael ei chydabod, ond mae National Grid o'r farn y byddai modd lleihau/osgoi hyn gydag opsiynau sy'n cynnwys dewis y llwybr yn ofalus, plannu neu guddio neu ystyried gosod rhannu ohono o dan y ddaear.</li> <li>Byddai cyfanswm cost y prosiect, gan gynnwys cysylltiad AC tanddaearol 40 km o hyd tua £1.7 biliwn. Mae hynny'n £923 miliwn yn fwy na'r prosiect cyfatebol llwybr cebl uwchben.</li> </ul> <p><b>Ar ôl ystyried y ffactorau hyn, mae National Grid ar hyn o bryd yn ffafrio cysylltiad uwchben.</b></p>	<p><b>Uwchben/tanddaearol yn Aber Afon Glaslyn</b></p> <ul style="list-style-type: none"> <li>Byddai effeithiau llwybr cyfan gwbl danddaearol yn cael eu cyfyngu'n bennaf i'r cam adeiladu.</li> <li>Mae'r cysylltiad presennol yn Aber Afon Glaslyn eisoes yn un tanddaearol.</li> <li>Byddai cysylltiad cyfan gwbl uwchben yn cael effaith sylweddol ar y dirwedd ac yn weledol, yn enwedig o ran Parc Cenedlaethol Eryri.</li> <li>Byddai cysylltiad cyfan gwbl danddaearol yn 6 km o hyd a byddai'n costio £132 miliwn. Mae hynny'n £121 miliwn yn fwy na chysylltiad cebl uwchben.</li> </ul> <p><b>Ar ôl ystyried yr holl opsiynau hyn, mae National Grid ar hyn o bryd yn ffafrio cysylltiad tanddaearol yn Aber Afon Glaslyn.</b></p>
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# Yr opsiwn a ffeirir gennym ar hyn o bryd

Yn dilyn y broses opsiynau strategol, yr opsiwn a ffeirir gennym ar hyn o bryd yw cysylltiad dros y tir, sy'n cynnwys tri phecon gwaith allweddol. Mae'r rhain yn cynnwys cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir, is-orsaf newydd yng Ngorllewin Gwynedd, a chysylltiad tanddaearol ychwanegol yn Aber Afon Glaslyn.

<p><b>Rhwng Wylfa, Ynys Môn a Phentir, Gogledd Gwynedd</b> (WP)</p> <p><b>Y gwaith arfaethedig</b> Cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir.</p> <p><b>Pam y mae ei angen</b> Cysylltu ffynonellau cynhyrchu ynni carbon isel newydd â'r rhwydwaith presennol yng Ngogledd Cymru.</p> <p><b>Lleisiwch eich barn</b> Hoffem glywed eich barn ar yr opsiwn a ffeirir gennym ar gyfer cysylltiad uwchben. Hoffem hefyd glywed eich barn ar goridau llwybr a nodwyd gennym ac unrhyw ardaloedd sensitif. <b>Cewch ragor o wybodaeth ar dudalen pedwar.</b></p>	<p><b>Gorllewin Gwynedd</b> (WG)</p> <p><b>Y gwaith arfaethedig</b> Is-orsaf newydd yng Ngorllewin Gwynedd.</p> <p><b>Pam y mae ei angen</b> Cryfhau'r rhwydwaith a sicrhau cyflenwadau dibynadwy i'r ardal, gan gynnwys Llŷn.</p> <p><b>Lleisiwch eich barn</b> Hoffem glywed eich barn ar dri safle posibl ar gyfer yr is-orsaf a nodwyd gennym. <b>Cewch ragor o wybodaeth ar dudalen pump.</b></p>	<p><b>Aber Afon Glaslyn</b> (G)</p> <p><b>Y gwaith arfaethedig</b> Cysylltiad tanddaearol ychwanegol i gymryd lle ac i uwchraddio'r cysylltiad tanddaearol presennol.</p> <p><b>Pam y mae ei angen</b> Cryfhau'r rhwydwaith er mwyn ei alluogi i ymdopi â'r lefel cynyddol o ynni yn y system.</p> <p><b>Lleisiwch eich barn</b> Hoffem glywed eich barn am y dewis a ffeirir gennym ar hyn o bryd ar gyfer cysylltiad tanddaearol a choridor llwybr ac aliniad posibl y llwybr a nodwyd gennym. <b>Cewch ragor o wybodaeth ar dudalen chwech.</b></p>
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Byddai angen gwneud sawl gwaith ychwanegol hefyd i gryfhau'r rhwydwaith trydan. Byddai hyn yn cynnwys gwaith ar linellau uwchben presennol yng Ngogledd Cymru, gosod offer i roi hwb i'r cryfder trawsyrru a gwaith ar yr is-orsafod presennol yn Wylfa, Pentir a Thrawsfynydd. Ni wyddom eto beth fydd manylion llawn y gwaith hwn ond byddwn yn hysbysu pobl o'r datblygiadau fel y daw'r manylion yn fwy eglur.

Fel rhan o gam cyntaf yr ymgynghoriad, rydym yn croesawu eich syniadau a'ch barn ar yr opsiwn a ffeirir gennym ar hyn o bryd. Cafodd ei ddewis gan ein bod yn credu ei fod yn cyflawni'r cydbwysedd gorau rhwng ystyriaethau technegol, economaidd, cymdeithasol ac amgylcheddol pwysig o'i gymharu â'r opsiynau eraill a aseswyd gennym. Fodd bynnag, byddwn yn parhau i adolygu'r opsiwn a ffeirir gennym drwy gydol y broses ymgynghori i sicrhau mai'r opsiwn mwyaf priodol a gaiff ei fabwysiadu.

## Ffynonellau ynni ychwanegol

**Mae prosiectau cynhyrchu ynni newydd yn cael eu cynnig yn barhaus i ateb y galw am ffynonellau trydan carbon isel, newydd.**

Llofnodwyd cytundeb ym mis Gorffennaf 2012 â Greenwire i gysylltu 1 GW o ynni gwynt Gwyddelig ar y môr i Bentir. Mae National Grid yn awr yn ystyried y ffordd orau o wneud y cysylltiad hwn. Mae'n bosibl hefyd y bydd angen i National Grid gysylltu ffynonellau cynhyrchu trydan newydd arfaethedig eraill â'r rhwydwaith trydan yng Ngogledd Cymru yn y dyfodol.

Wrth i'r gwaith hwn fynd yn ei flaen, bydd National Grid yn hysbysu pobl o'r datblygiadau, ac mae wedi ymrwngwyo i adolygu'r opsiwn a ffeirir gennym

yn rheolaidd i sicrhau bod yr opsiwn mwyaf priodol yn cael ei fabwysiadu.

Fodd bynnag, mae National Grid yn credu mai'r opsiwn strategol a ffeirir ar gyfer gorsaf ynni niwclear newydd Horizon a'r fferm wynt ar y môr sy'n cael ei chynnig gan Celtic Array yw'r opsiwn cysylltu gorau ar gyfer yr ynni hwn. Pa bynnag anghenion cynhyrchu ychwanegol fydd angen eu cysylltu yng Ngogledd Cymru yn y dyfodol, rydym yn rhagweld y bydd yr angen am y gwaith a gynigir fel rhan o'r opsiwn a ffeirir gennym yn parhau.

**Am ragor o wybodaeth:**

**Mae copi o 'Need case' a 'Strategic Options report', yn ogystal ag 'Our approach to the design and routing of new electricity transmission lines' a dogfennau eraill y prosiect ar gael i'w llwytho i lawr yn:**

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copïau ar gael hefyd mewn nifer o ganolfannau cyhoeddus neu ar gais drwy gysylltu â thim National Grid (gweler y dudalen gefn am fanylion).



# Cysylltiad uwchben newydd rhwng Wylfa a Phentir



Mae nifer o brosiectau ynni carbon isel yn Ynys Môn a'r cyffiniau yn cael eu hystyried a bydd angen eu cysylltu â'r rhwydwaith trydan.

Mae gan Horizon Nuclear Power contract â National Grid i gysylltu gorsaf bwerau niwclear newydd arfaethedig yn Wylfa, Ynys Môn gyda chapasiti cynhyrchu o hyd at 3.6 gigawatt (GW). Mae gan Celtic Array hefyd gontact i gysylltu 2 GW o ynni gwynt ar y môr sydd yn yr arfaeth ym Môr Iwerddon.

Mae'r llinell uwchben 400 kV bresennol yn Ynys Môn yn rhedeg rhwng is-orsaf National Grid yn Wylfa ac un ym Mhentir, Gwynedd. Hyd yn oed ar ôl i'r orsaf ynni niwclear Magnox 1 GW bresennol gael ei dadgomiynu, ni fyddai'r llinell uwchben bresennol yn gallu ymdopi â'r holl drydan newydd y bwriad ei gynhyrchu.

Yn dilyn y broses opsiynau strategol, mae'r opsiwn a ffeirir gennym ar hyn o bryd yn cynnwys cysylltiad uwchben ychwanegol o Wylfa i is-orsaf bresennol ym Mhentir.

- Fel rhan o gam cyntaf yr ymgynghoriad, byddem yn croesawu eich barn ar hyn. Os gweithredir ar yr opsiwn strategol hwn, rhoddir ystyriaeth ofalus i leihau effeithiau'r cysylltiad, gyda'r opsiynau'n cynnwys:
- Creu llwybr i'r llinell uwchben fel y byddai'n osgoi mannau poblog a mannau sydd o'r pwys mwyaf i gymunedau
  - Defnyddio gwahanol fathau o beilonau a allai gynnwys peilon 'uchder isel' a /neu'r 'peilon T' newydd
  - Ystyried ceblau tanddaearol, yn enwedig mewn ardaloedd sensitif
  - Mesurau plannu / cuddio

Byddem hefyd yn croesawu eich barn ar yr opsiynau ar gyfer y coridor llwybr a nodwyd gennym, ynghyd â'ch barn ar ardaloedd yr ydych yn credu sy'n arbennig o sensitif. Cewch fanylion ar sut y gallwch gofrestru'ch sylwadau ar dudalennau saith ac wyth.

## Adroddiad Cyntaf ar Goridor Llwybr Wylfa-Pentir

**Mae ein hadroddiad cyntaf ar y coridor llwybr yn nodi pedwar coridor llwybr posibl ar draws Môn a phum man croesi posibl ar draws Afon Menai i Bentir.** Mae gan y penderfyniad ar ba goridor i'w fabwysiadu.

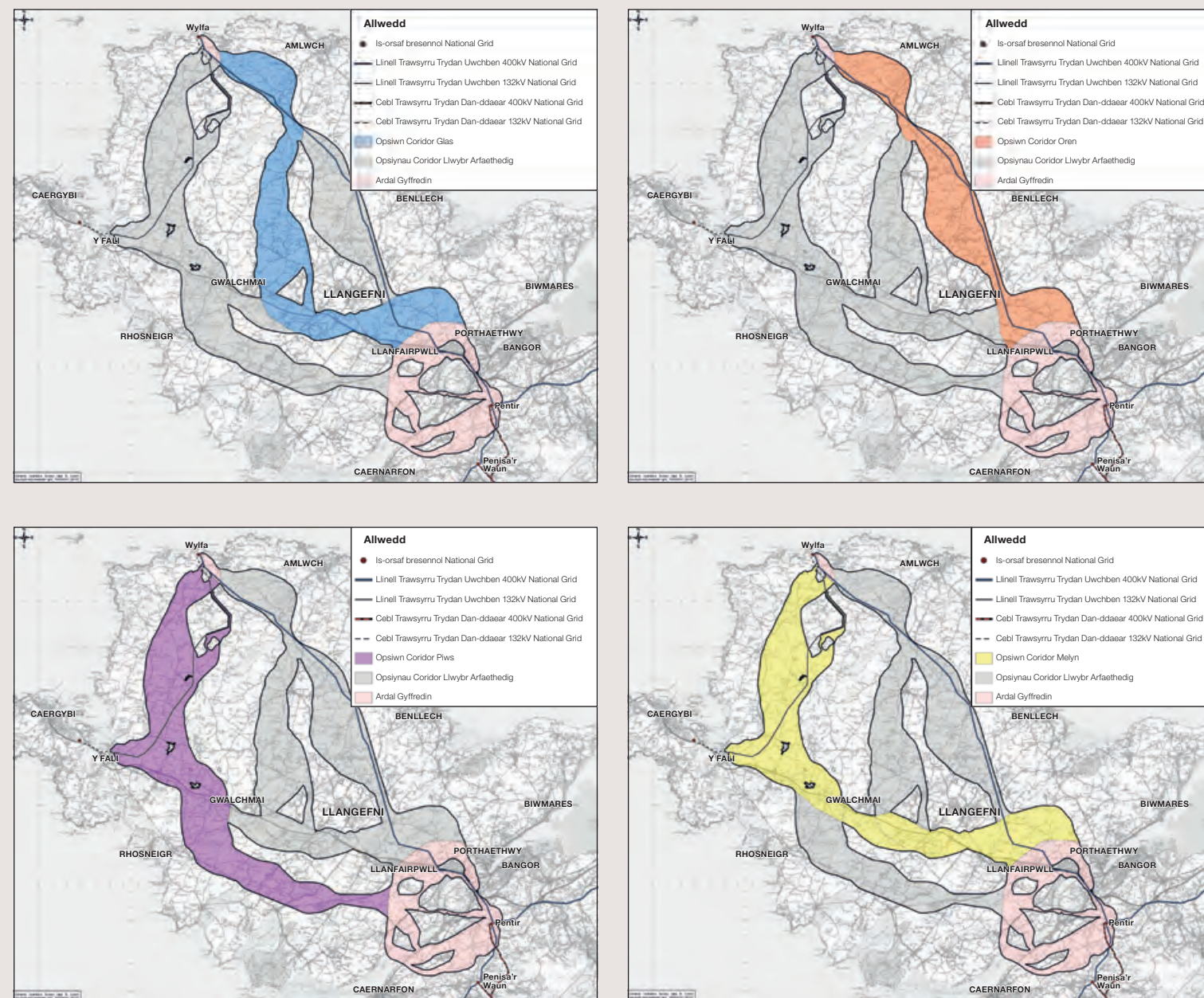
Wrth ddatblygu'r coridorau hyn, rydym wedi ystyried ffactorau amgylcheddol a chymdeithasol yn ofalus, a'r effeithiau posibl ar gymunedau lleol, yn ogystal â chyfyngiadau ariannol a pheiriaenyddol.

Mae coridor llwybr yn lain llydan o dir lle gellid adeiladu'r cysylltiad newydd. Gallai'r coridor fod yn llydan iawn mewn rhai mannau (hyd at 4 km); mewn mannau eraill gallai fod yn llai oherwydd cyfyngiadau fel trefi, pentrefi ac ardaloedd amgylcheddol dynodedig.

Rydym hefyd wedi cynnal trafodaethau cychwynnol â rhanddeiliaid gan gynnwys awdurdodau lleol, Llywodraeth Cymru, Cyngor Cefn Gwlad Cymru, Asiantaeth yr Amgylchedd Cymru, Parc Cenedlaethol Eryri, Cadw, y cynhyrchwyr a ScottishPower Energy Networks. Byddwn yn parhau i gadw mewn cysylltiad â'r rhanddeiliaid pwysig hyn i sicrhau y rhoddir ystyriaeth lawn i'w barn ynghylch y cynigion fel rhan o'r broses ymgynghori.

# Y coridorau arfaethedig rhwng Wylfa a Phentir

Mae'r mapiau hyn yn dangos y pedwar coridor wedi'u lliwio a phum man croesi posibl ar draws Afon Menai i Bentir yr ydym yn ymgynghori arnynt. Os gweithredir ar yr opsiwn strategol hwn, dim ond un coridor ac un man croesi a ddefnyddir yn y diwedd.



Atgynhyrwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrddi ©Hawffraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawffraint y Goron a gallech gael eich erbyn neu gallai achos siffti gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).

### Am ragor o wybodaeth

Gallwch weld yr holl fapiau hyn mewn mwy o fanylder yn ein harddangosfeydd ac ar ein gwefan. Mae copiau o'r Wylfa-Pentir Explanation Booklet, sy'n grynodeb o'n hadroddiad cyntaf ar goridor llwybr Wylfa-Pentir, ar gael i'w llwytho i lawr yn:

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copiau ar gael hefyd mewn nifer o ganolfannau cyhoeddus neu ar gais drwy gysylltu â thim National Grid (gweler y dudalen gefn am fanylion).



# Is-orsaf newydd yng Ngorllewin Gwynedd

Byddai angen is-orsaf newydd yng Ngorllewin Gwynedd i gynnal cyflenwadau dibynadwy i gartrefi a busnesau yn yr ardal.

Ar hyn o bryd mae National Grid yn rhannu'r llinell uwchben bresennol yng Ngorllewin Gwynedd â'r cyflenwr trydan lleol, ScottishPower Energy Networks.

Er mwyn ymdopi â'r ynni ychwanegol arfaethedig yng Ngogledd Cymru, byddai angen i ni ddefnyddio'r ceblau ar ddwy ochr y llinell uwchben rhwng Pentir a Thrawsfynydd.

Er mwyn gwneud hyn, byddai angen is-orsaf newydd yn agos at y llinell bresennol, i gryfhau'r rhwydwaith presennol ac i sicrhau cyflenwadau trydan dibynadwy i'r ardaloedd cyfagos, gan gynnwys Llŷn. Hoffem glywed eich barn ar y gwaith hwn fel rhan o'r opsiwn strategol a ffeirir gennym ar hyn o bryd.

- Rhoddir ystyriaeth ofalus i leihau effeithiau is-orsaf newydd, gyda mesurau sy'n cynnwys:
- Sgrinio'r dirwedd a phlannu
  - Creu cynefinoedd
  - Mesurau i leihau sŵn

Fel rhan o'r ymgynghoriad hwn, byddem yn croesawu eich sylwadau ar y tri safle rydym wedi'u dewis ar gyfer is-orsaf ger Bryncir. Cewch fanylion ar sut y gallwch gofrestru'ch barn ar dudalennau saith ac wyth.

## Astudiaeth Lleoli Is-orsaf Gogledd Gwynedd

**Er mwyn canfod safleoedd posibl i'r is-orsaf, cynhaliodd National Grid Astudiaeth Lleoli, a oedd yn edrych ar amwynderau a'r amgylchedd, yr effeithiau ar gymunedau lleol a pham mor addas yw mynediad ar gyfer trafndiaeth.**

y rhoddir ystyriaeth lawn i'w barn ynghylch y cynigion fel rhan o'r broses ymgynghori.

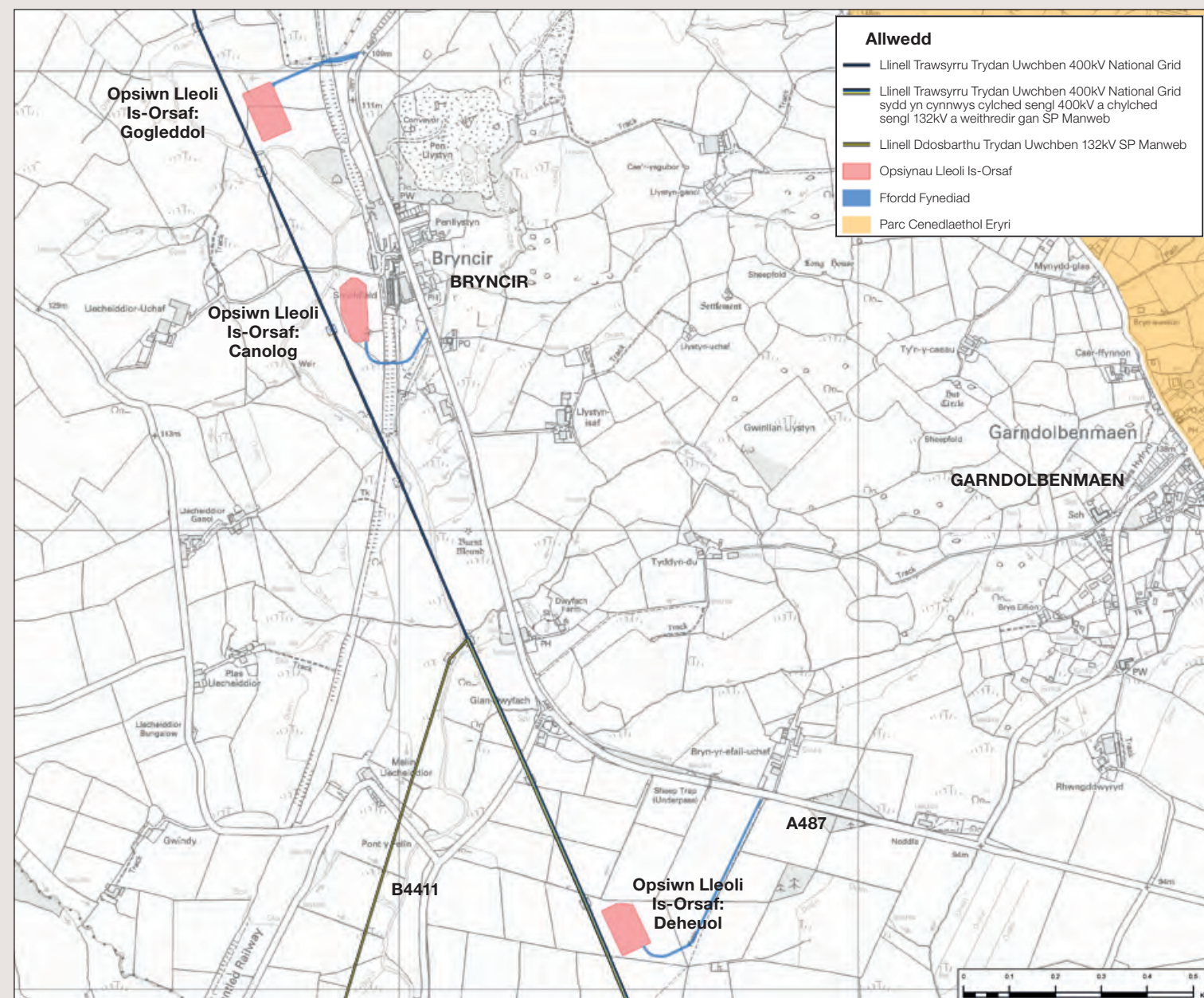
Rydym hefyd wedi cynnal trafodaethau cychwynnol â rhanddeiliaid gan gynnwys awdurdodau lleol, Llywodraeth Cymru, Cyngor Cefn Gwlad Cymru, Asiantaeth yr Amgylchedd Cymru, Parc Cenedlaethol Eryri, Cadw, y cynhyrchwyr a ScottishPower Energy Networks. Byddwn yn parhau i gadw mewn cysylltiad â'r rhanddeiliaid pwysig hyn i sicrhau

Ar ôl cynnal chwiliad trylwyr o 20 safle posibl, mae tri safle addas posibl wedi'u dewis ar gyfer is-orsaf ger Bryncir: Gogleddol, Canolog a Deheuol. Dim ond un safle a ddefnyddir ar gyfer yr is-orsaf.

Nid yw union fanylion yr is-orsaf wedi'u cadarnhau eto ond gallai gynnwys offer hyd at 10 metr o uchder a gallai ei ôl troed fod tua dwy erw, gyda thir ychwanegol ar gyfer sgrinio.

# Yr opsiynau ar gyfer safle'r is-orsaf arfaethedig ger Bryncir

Mae'r map hwn yn dangos y tri safle posibl yr ydym yn ymgynghori arnynt. Dim ond un safle a ddefnyddir.



### Am ragor o wybodaeth

Mae copi o'r Astudiaeth Lleoli Is-orsaf Gogledd Gwynedd ar gael i'w llwytho i lawr o:

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copiau ar gael hefyd mewn nifer o ganolfannau cyhoeddus neu ar gais drwy gysylltu â thim National Grid (gweler y dudalen gefn am fanylion).

Atgynhyrwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrddi ©Hawffraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawffraint y Goron a gallech gael eich erbyn neu gallai achos siffti gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



# Ceblau trydan tanddaearol ychwanegol yn Aber Afon Glaslyn



Er mwyn ymdopi â chynnydd yn yr ynni yn y rhwydwaith, byddai angen cysylltiad ychwanegol yn Aber Afon Glaslyn.

Mae'r llinell drydan uwchben bresennol yng Ngorllewin Gwynedd yn mynd o Bentir i Drawsfynydd. Mae'n newid i fod yn geblau tanddaearol yn y Wern, i'r gorllewin o Dremadog. Yna mae'r cysylltiad yn parhau o dan y ddaear am tua 6 km, oherwydd sensitifrwyd yr aber a'r golygfeydd i Barc Cenedlaethol Eryri. Daw i'r wyneb eto yn y Garth ger Minffordd ac mae'n newid i linell uwchben eto, cyn parhau ar ei thaith i Drawsfynydd.

Mae'r opsiwn strategol a ffeirir gennym yn cynnwys adeiladu llwybr tanddaearol ychwanegol o hyd at 12 cebi i gludo'r pŵer ychwanegol sy'n cael ei gynniig yng Ngogledd Cymru. Byddai hyn yn golygu adnewyddu'r tri chebl presennol a osodwyd yn wreiddiol yn y 1960au. Mae'n debygol iawn y byddai'n rhaid gwneud y gwaith i'w hadnewyddu yn y 5-10 mlynedd nesaf beth bynnag, wrth iddynt gyrraedd diwedd eu hoes weithredol.

Pan fydd cebi tanddaearol yn ymuno â llinell uwchben, mae'r newid o un i'r llall yn digwydd mewn 'compownd selio pen'. Fel rhan o'n gwaith, byddai angen i ni hefyd ymestyn y compowndiau selio pen ar bob pen i'r cebi tanddaearol yn y Wern a'r Garth i alluogi cysylltiadau cebi ychwanegol.

Byddai'n rhaid ystyried hyn yn ofalus er mwyn lleihau unrhyw effeithiau a fyddai'n deillio o'r cebiau tanddaearol newydd ac ymestyn y compowndiau selio pen gyda mesurau a fyddai'n cynnwys:

- Tirlunio a sgrinio
- Creu cynefnoedd
- Rheoli traffig a gwastraff yn ystod y gwaith adeiladu

Ar gyfer yr ymgynghoriad hwn, byddem yn croesawu eich sylwadau ar goridor llwybr arfaethedig ac aliniad posibl y llwybr a nodwyd gennym. Ceir rhagor o fanylion ar sut y gallwch gofrestru'ch sylwadau ar dudalennau saith ac wyth.

## Adroddiad Coridor Llwybr Aber Afon Glaslyn

**Er mwyn dewis y llwybr mwyaf priodol ar gyfer y cysylltiad newydd, mae National Grid wedi paratoi adroddiad coridor llwybr. Mae 'coridor llwybr' yn llain lydan o dir y bydd y cysylltiad newydd yn cael ei adeiladu arni. Rydym yn galw union llwybr y cebiau'n 'aliniad y llwybr'.**

Mae'r coridor llwybr ac aliniad posibl y llwybr a nodwyd fwy neu lai'n dilyn yr un llwybr â'r cebiau tanddaearol presennol.

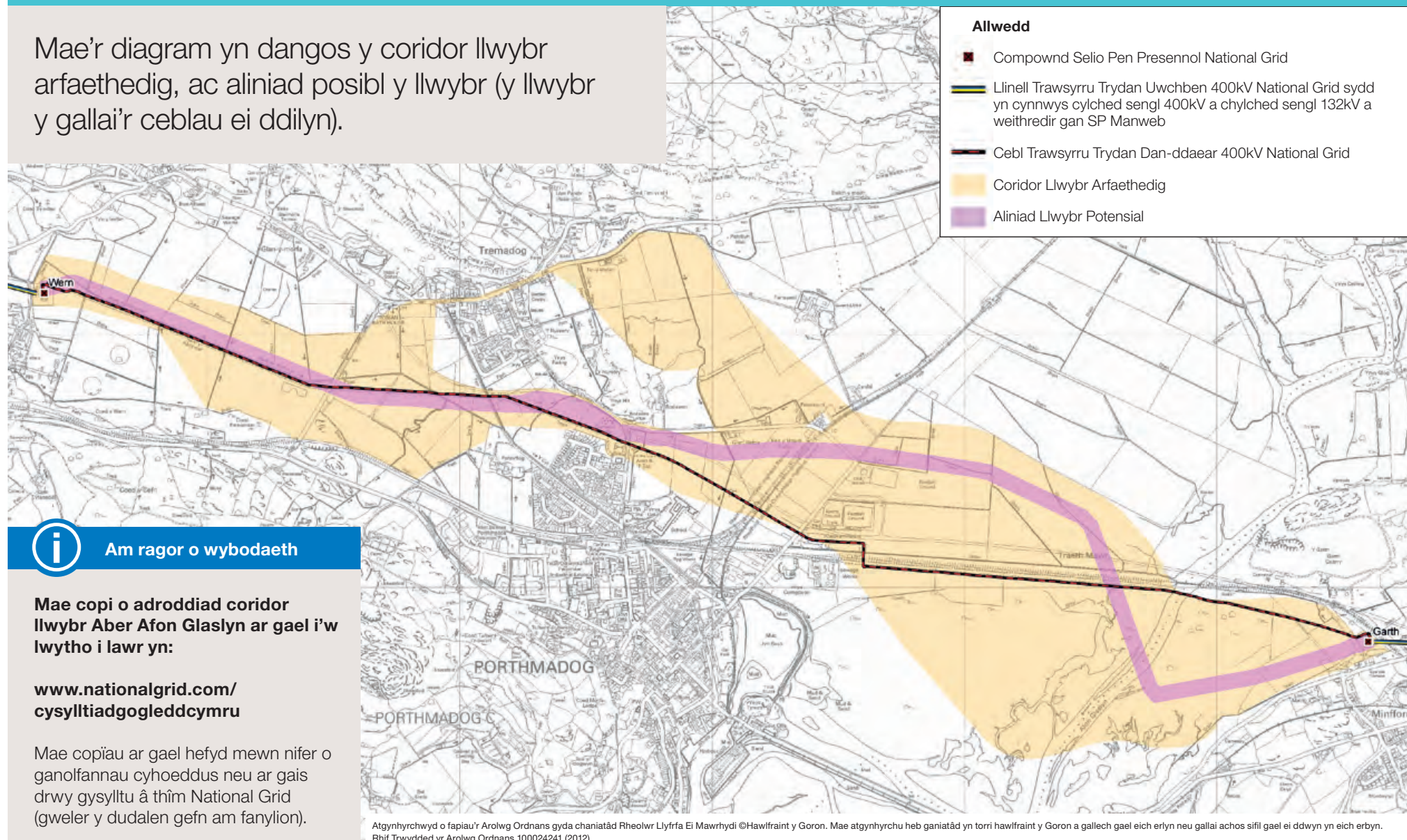
Wrth ystyried y coridor ac aliniad y llwybr, rydym wedi ystyried y ffactorau amgylcheddol a chymdeithasol yn ofalus, ynghyd â'r effeithiau posibl ar gymunedau lleol, yn ogystal â chyfyngiadau ariannol a pheiranyddol.

Rydym hefyd wedi cynnal trafodaethau cychwynnol â rhanddeiliaid gan gynnwys awdurdodau lleol, Llywodraeth Cymru, Cyngor Cefn Gwlad Cymru, Asiantaeth yr Amgylchedd Cymru, Parc Cenedlaethol Eryri, Cadw, y cynhyrchwyr a ScottishPower Energy Networks. Byddwn yn parhau i gadw mewn cysylltiad â'r rhanddeiliaid pwysig hyn i sicrhau y rhoddir ystyriaeth lawn i'w barn ynghylch y cynigion fel rhan o'r broses ymgynghori.

Mae opsiwn a ddaeth i'r amlwg yn Adroddiad y Coridor Llwybr yn golygu y gellid gosod rhai o'r cebiau ar hyd Heol Dulyn a'r Stryd Fawr drwy Dremadog. Fodd bynnag, mae aliniad y llwybr a gynigiwyd gennym yn osgoi'r angen i osod cebiau drwy Dremadog.

# Coridor Llwybr arfaethedig ac aliniad posibl y llwybr yn Aber Afon Glaslyn

Mae'r diagram yn dangos y coridor llwybr arfaethedig, ac aliniad posibl y llwybr (y llwybr y gallai'r cebiau ei ddilyn).



## Am ragor o wybodaeth

Mae copi o adroddiad coridor llwybr Aber Afon Glaslyn ar gael i'w lwytho i lawr yn:

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copiâu ar gael hefyd mewn nifer o ganolfannau cyhoeddus neu ar gais drwy gysylltu â thim National Grid (gweler y dudalen gefn am fanylion).

Atgynhyrwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa El Mawrhydi ©Hawffraint y Goron. Mae atgynhyrhu heb ganiatâd yn torri hawffraint y Goron a gallech gael eich erlynnu neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif 'Trwydded yr Arolwg Ordnans' 100024241 (2012).

## Dweud eich dweud

Mae gan gymunedau lleol ran bwysig i'w chwarae yn y penderfyniadau a wneir gennym. Mae National Grid wedi ymrwmo i siarad a gwrandao ar y cyhoedd i sicrhau ein bod yn cael cymaint o adborth â phosibl ac y gallwn roi sylw i sylwadau a syniadau pobl sy'n byw yn yr ardal.



Bydd cam cyntaf ein hymarferiad ymgynghori cyhoeddus yn para tan 21 Rhagfyr. Byddwn yn cynnal arddangosfeydd mewn sawl lleoliad a byddwn yn mynd â'n harddangosfa ar y ffordd mewn cerbyd er mwyn clywed barn cymaint o bobl â phosibl. Mae manylion llawn am yr holl arddangosfeydd i'w gweld ar y dudalen gefn.

Rydym yn dilyn proses gymhleth o ddadansoddi a gwerthuso ac mae hyn yn cynnwys ymgynghori mewn sawl cam. Mae'r amserlen ar y dudalen hon yn dangos gwahanol gamau'r prosiect a pha bryd y cynhelir yr ymgynghoriadau.

Mae gan gymunedau lleol ran bwysig i'w chwarae

Gallwch hefyd ddarlenn sut y mae National Grid yn ymgynghori â chymunedau a rhanddeiliaid eraill yn ein 'Our approach to the design and routeing of new electricity transmission lines' (manyion isod).

Gobeithwn y gallwch ddod i un o'n digwyddiadau ac edrychwn ymlaen at eich cyfarfod yn eich ardal leol.

- Gallwch gofrestru eich sylwadau fel rhan o'r broses ymgynghori mewn nifer o ffyrdd:**
- Gallwch fynd i [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) lle gallwch gofrestru eich manylion a chwblhau ffurflen adborth ar-lein.
  - Gallwch ddod i un o'n harddangosfeydd lle cewch ragor o wybodaeth, gofyn unrhyw gwestiynau a chyflwyno'ch sylwadau ar ein ffurflen adborth.
  - Gallwch gysylltu â ni (mae'r manylion ar y dudalen gefn) i ofyn am ffurflen adborth ac anfonir un atoch ynghyd â gwybodaeth bellach ac amlen radbost.

## Amserlen fras ar gyfer y prosiect

Mae hwn yn brosiect maith a chymhleth ac fel y gwelwch o'r amserlen isod bydd yn cynnwys sawl cam ymgynghori. Fel y gellid disgwyl, gall yr amserleni newid ond byddwn yn rhoi gwybod i chi am y datblygiadau wrth i'r gwaith fynd yn ei flaen.

	2011	2012	2013	2014	2015 ymlaen
<b>WYLFA - PENTIR</b>	<ul style="list-style-type: none"> <li>Arfarniad cychwynnol o'r angen ac opsiynau strategol</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi Achos Angen, Adroddiad Opsiynau Strategol ac Adroddiad Coridor Llwybr Cychwynnol</li> <li>Ymgynghoriad Cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi manylion am y coridor llwybr a ffeirir</li> <li>Cyhoeddi gwybodaeth i egluro'r penderfyniadau a wnaethpwyd gennym</li> <li>Astudiaethau technegol ac amgylcheddol sydd ar waith ac ymgynghori â rhanddeiliaid allweddol</li> <li>Ymgynghoriad cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cwblhau'r EIA</li> <li>Ymgynghoriad cyhoeddus ar y dyluniad terfynol</li> </ul>	<ul style="list-style-type: none"> <li>Cais ac ystyried Gorchymyn Cydsyniad Datblygu (DCO)</li> <li>Yn amodol ar gymeradwyo DCO gallai'r gwaith adeiladu ddechrau yn 2016</li> </ul>
<b>GORLLEWIN GWYNEDD</b>	<ul style="list-style-type: none"> <li>Arfarniad cychwynnol o'r angen ac opsiynau strategol</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi Achos Angen, Adroddiad Opsiynau Strategol ac Astudiaeth Lleoeli Is-orsafocdd</li> <li>Ymgynghoriad cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi pa safle a ffeirir a ddewiswyd</li> <li>Cyhoeddi gwybodaeth yn egluro'r penderfyniadau a wnaethpwyd gennym</li> <li>Dyluniad manwl yr is-orsaf ac ymgysylltu â'r cyhoedd</li> <li>Y dyddiad cynharaf ar gyfer cyflwyno cais cynllunio</li> </ul>	<ul style="list-style-type: none"> <li>Yn amodol ar ganiatâd cynllunio, dyddiad cynharaf dechrau'r gwaith adeiladu</li> </ul>	
<b>ABER AFON GLASLYN</b>	<ul style="list-style-type: none"> <li>Arfarniad cychwynnol o'r angen ac opsiynau strategol</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi Achos Angen, Adroddiad Opsiynau Strategol ac Adroddiad Cychwynnol ar y Coridor Llwybr</li> <li>Ymgynghoriad cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi'r aliniad terfynol</li> <li>Cyhoeddi gwybodaeth yn egluro'r penderfyniadau a wnaethpwyd gennym</li> <li>Dyluniad terfynol yr aliniad ac ymgysylltu â'r cyhoedd</li> </ul>	<ul style="list-style-type: none"> <li>Dyddiad cynharaf dechrau'r gwaith adeiladu</li> </ul>	

## Dogfennau allweddol y prosiect

Drwy gydol y cylchlythyr hwn rydym wedi cyfeirio at nifer o ddogfennau pwysig a fydd yn eich helpu i gael mwy o wybodaeth am Brosiect Cysylltiad Gogledd Cymru. Rhoddir crynodeb ohonynt isod.

- Need Case:** Yn egluro pam fod angen y prosiect.
- Strategic Options Report:** Yn amlinellu sut y detholwyd ac yr arfarnwyd yr opsiynau y buom yn eu hystyried ar gyfer cysylltu'r prosiectau cynhyrchu ynni arfaethedig.
- Wylfa-Pentir Initial Route Corridor Report:** Yn edrych ar ac yn nodi'r coridorau llwybr uwchben posibl rhwng Wylfa a Phentir.
- West Gwynedd Substation Siting Study:** Yn edrych ar ac yn nodi devisiadau addas ar gyfer leoli is-orsaf yng Ngorllewin Gwynedd.
- Glaslyn Estuary Route Corridor Report:** Yn edrych ar ein hoffter yn y lle cyntaf am gysylltiad tanddaearol, ac mae'n edrych ar goridor llwybr arfaethedig ac aliniad posibl y llwybr yn Aber Afon Glaslyn.
- Cwestiynau Cyffredin:** Atebion i gwestiynau a ofynnir yn aml.
- Our Approach to the Design and Routeing of New Electricity Transmission Lines:** Egluro'r prosesau a ddilyniir gan National Grid wrth gynllunio llwybrau trawsyrro newydd.

Gellir llwytho copiâu o'r dogfennau hyn i lawr o'n gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copiâu ar gael hefyd mewn nifer o ganolfannau cyhoeddus neu ar gais drwy gysylltu â thim National Grid (gweler y dudalen am fanylion).



# Digwyddiadau ymgynghori

Rydym yn cynnal cyfres o ddigwyddiadau ledled Ynys Môn a Gwynedd, mewn canolfannau sefydlog ac yng ngherbyd ein harddangosfa symudol.

Mae gan eich adborth rôl bwysig i'w chwarae fel sail i'r penderfyniadau a wnawn ac edrychwn ymlaen at gwrdd â chymaint â phosibl ohonoch.

## Digwyddiadau Wylfa-Pentir

### Dydd Sadwrn 20 Hydref, 10am-4pm

Gwesty'r Bull, Llangefni, LL77 7LR

### Dydd Mawrth 23 Hydref, 1.30pm-7.30pm

Y Neuadd Goffa, Llanfairpwll, LL61 5JB

### Dydd Mercher 31 Hydref, 1.30pm-7.30pm

Neuadd Gymunedol a'r Cyn-filwyr, Benllech, LL74 8SN

### Dydd Iau 1 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Ysgol Gynradd Bodorgan, LL62 5AB

### Dydd Gwener 2 Tachwedd, 1.30pm-7.30pm

Neuadd y Pentref, Llanfachraeth, LL65 4UW

### Dydd Sadwrn 3 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Ysgol Gynradd Rhosybol, LL68 9PP

### Dydd Llun 5 Tachwedd, 1.30pm-7.30pm

Neuadd y Pentref, Cemaes, LL67 0HL

### Dydd Llun 5 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Tafarn y Faenol, Pentir, LL57 4EA

### Dydd Mawrth 6 Tachwedd, 1.30pm-7.30pm

Gwesty'r Celt, Caernarfon, LL55 1AY

### Dydd Iau 8 Tachwedd, 11am-4pm

(Arddangosfa Symudol), Parc Busnes Gaerwen, Gaerwen, LL60 6DN

### Dydd Gwener 9 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Gwesty Gwalchmai, Gwalchmai, LL65 4PU

### Dydd Gwener 9 Tachwedd, 1.30pm-7.30pm

Neuadd y Pentref, Rhosneigr, LL64 5UX

### Dydd Sadwrn 10 Tachwedd, 10am-4pm

Ysgol Gymunedol Llanerchymedd, LL71 8DP

### Dydd Llun 12 Tachwedd, 1.30pm-7.30pm

Canolfan Iorwerth Rowlands, Steeple Lane, Biwmares, LL58 8AE

### Dydd Mawrth 13 Tachwedd, 1.30pm-7.30pm

Neuadd y Penrhyn, Tan-Y-Fynwent, Bangor, LL57 1NW

### Dydd Mawrth 13 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Neuadd Griffith Reade, Llanfaethlu, LL65 4NP

### Dydd Mercher 14 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Bysus Arvonnia, Llanrug, LL55 4AA

### Dydd Iau 15 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Canolfan Dreftadaeth Llys Llewelyn, Aberffraw, LL63 5BQ

### Dydd Gwener 16 Tachwedd, 1.30pm-7.30pm

Y Ganolfan, Brynsiencyn, LL61 6HZ

### Dydd Gwener 16 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Neuadd y Pentref, Bodedern, LL65 3TZ

### Dydd Llun 19 Tachwedd, 1.30pm-7.30pm

Clwb Cymdeithasol a Chwaraeon Wylfa, Bae Cemaes, LL67 0DE

### Dydd Mercher 21 Tachwedd, 1.30pm-7.30pm

Gwesty'r Bull, Llangefni, LL77 7LR

### Dydd Iau 22 Tachwedd, 1.30pm-7.30pm

Canolfan Thomas Telford, Porthaethwy, LL59 5EA

### Dydd Gwener 23 Tachwedd, 1.30pm-7.30pm

Y Neuadd Goffa, 18 Stryd y Farchnad, Amlwch, LL68 9ET

### Dydd Sadwrn 24 Tachwedd, 10am-4pm

Y Neuadd Goffa, Lôn Emyr, Y Felinheli, LL56 4JB

### Dydd Mawrth 27 Tachwedd, 1.30pm-7.30pm

Neuadd y Dref, Stryd Newry, Caergybi, LL65 1HN

### Dydd Mercher 28 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Gwesty'r Cymyran, Llanfair yn Neubwll, LL65 3LD

## Digwyddiadau yng Ngorllewin Gwynedd

### Dydd Gwener 2 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Tile Stop, Bryncir, LL51 9LX

### Dydd Sadwrn 17 Tachwedd, 10am-4pm

Ysgol Gynradd Garndolbenmaen, LL51 9SZ

### Dydd Sadwrn 1 Rhagfyr, 10am-4pm

Tafarn yr Afr, Glandwyfach, Bryncir, LL51 9LJ

## Digwyddiadau yn ardal Aber Glaslyn

### Dydd Gwener 26 Hydref, 1.30pm-7.30pm

Canolfan Hamdden Glaslyn, Porthmadog, LL49 9HW

### Dydd Sadwrn 10 Tachwedd, 10am-4pm

Canolfan Hamdden Glaslyn, Porthmadog, LL49 9HW

### Dydd Sadwrn 17 Tachwedd, 10am-4pm

Neuadd Goffa Penrhyndeudraeth, LL48 6LS

### Dydd Llun 26 Tachwedd, 1.30pm-7.30pm

Institiwt (Neuadd Goffa) Tremadog, LL49 9RB

### Dydd Iau 29 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Galw Gwynedd, Uned 2, Parc Busnes Eryri, Minffordd, LL48 6LD

Er diogelwch y cyhoedd, bydd ein holl arddangosfeydd sefydlog a symudol yn dibynnu ar y tywydd. Bydd ein harddangosfeydd symudol yn cael eu cynnal rhwng 11am a 4pm. Fodd bynnag, byddwn yn cadw'r cerbyd symudol ar agor yn hwyrach os bydd hi'n dal i fod yn olau dydd.

Cysylltwch â ni ar ein rhif rhadffôn os hoffech chi gadarnhau a yw'r digwyddiad yr ydych yn bwriadu mynd iddo'n dal i fynd rhagddo. Byddwn yn rhoi gwybod am unrhyw ddigwyddiadau a fydd yn cael eu canslo ar wefan y prosiect.

## Edrych ar Ddogfennau Allweddol

Bydd copïau o'n holl ddogfennau allweddol ar gael i'w gweld yn y canolfannau cyhoeddus hyn ym Môn a Gwynedd o 20 Hydref 2012

### Llyfrgelloedd Ynys Môn

#### Llyfrgell Amlwch

Lon Parys, Amlwch, Ynys Môn, LL68 9EA

#### Llyfrgell Biwmares

Canolfan David Hughes, Biwmares, Ynys Môn, LL58 8AL

#### Llyfrgell Benllech

Ffordd Bangor, Benllech, Tyn y Gongl, LL74 8TF

#### Llyfrgell Cemaes

Lôn Glascoed, Bae Cemaes, Ynys Môn, LL67 0HN

#### Llyfrgell Caergybi

Caeau Newry, Caergybi, Ynys Môn, LL65 1LA

#### Llyfrgell Llangefni

Lôn y Felin, Llangefni, Ynys Môn, LL77 7RT

#### Llyfrgell Porthaethwy

Wood Street, Porthaethwy, Ynys Môn, LL59 5AS

### Llyfrgell Moelfre

Y Ganolfan, Moelfre, Ynys Môn, LL72 8HA

### Llyfrgell Niwbwrch

Sefydliad Pritchard Jones, Niwbwrch, Ynys Môn, LL61 6SY

### Llyfrgell Rhosneigr

Stryd Fawr, Rhosneigr, Ynys Môn, LL64 5UX

### Lleoliadau eraill

#### Cyngor Sir Ynys Môn

Swyddfeydd y Cyngor, Llangefni, Ynys Môn, LL77 7TW

#### Canolfan Busnes Môn

Parc Busnes Bryn Cefni, Llangefni, Ynys Môn, LL77 7XA

#### Cyngor Gwynedd

Swyddfa'r Cyngor, Stryd y Jêl, Caernarfon, Gwynedd, LL55 1SH

### Llyfrgelloedd Gwynedd

#### Llyfrgell Bangor

Ffordd Gwynedd, Bangor, Gwynedd, LL57 1DT

#### Llyfrgell Caernarfon

Lôn Pafiliwn, Caernarfon, Gwynedd, LL55 1AS

#### Llyfrgell Cricieth

Stryd Fawr, Cricieth, Gwynedd, LL52 0RN

#### Llyfrgell Penygroes

Canolfan Dechnoleg Dyffryn Nantlle, Heol y Dŵr, Penygroes, Caernarfon, Gwynedd, LL54 6LR

#### Llyfrgell Porthmadog

Stryd Wesla, Porthmadog, Gwynedd, LL49 9BT

# Cysylltu â ni:

Gallwch gysylltu â ni mewn nifer o ffyrdd i gael rhagor o wybodaeth:



Ewch i wefan y prosiect yn:

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)



Anfonwch e-bost i:

[nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)



Ffoniwch ein rhif rhadffôn:

**0800 990 3567.** Mae'r llinellau ar agor rhwng 9:00am - 5:00pm Dydd Llun - Dydd Gwener



Ysgrifennwch atom yn ein cyfeiriad rhadpost:

**FREEPOST NATIONAL GRID  
NW CONNECTION**

FSC  
LOGO

## National Grid seeks community views in North Wales



National Grid has begun its first stage of consultation on its proposals to connect new electricity generation in North Wales.

**The UK is facing a major energy challenge which will affect all of us. To meet climate change targets and replace ageing power stations, a new wave of low carbon power generation is needed. All of this generation will need connecting into the electricity network.**

In North Wales, a number of low carbon energy projects are being proposed, and as a result we will need to strengthen the existing network.

We are asking the public for feedback on our proposals to connect Horizon's proposed nuclear power station at Wylfa of up to 3.6 gigawatt (GW), together with 2 GW of offshore Irish Sea wind energy being proposed by Celtic Array, which will also connect on Anglesey.

While Horizon's shareholders, RWE npower and E.ON, are not proceeding with plans for nuclear power generation in the UK, Horizon is optimistic a new buyer will be found, and have kept their contract with National Grid in place. We are therefore continuing with our consultation to ensure what is a large and technically complex project remains on track.

To accommodate this significant new generation, we have established that the existing network in North Wales needs upgrading with new electricity connections.

We have looked at a large number of options to do this, using both offshore and onshore technologies, and assessed each of these options against environmental and community effects, technical feasibility and whole life costs. We also discussed them with a number of organisations to better inform our assessment.

Following this extensive process of evaluation, we have identified our preliminary preferred option that we believe achieves the best balance between all of the important considerations that we have to make.

### Having your say

Our preferred option consists of the following three key packages of work:

#### **WP** Between Wylfa and Pentir

**An additional overhead connection (see page four)**

#### **WG** West Gwynedd

**A new substation to maintain reliable supplies to the area (see page five)**

#### **G** The Glaslyn Estuary

**An additional underground connection to handle the increased energy capacity (see page six)**

For our proposals between Wylfa-Pentir, we have identified four broad routes within which the additional overhead connection could be built. For our proposals in West Gwynedd, we have identified three potential substation locations and for our proposals at the Glaslyn Estuary, we have identified a potential path for the additional underground connection.

In our first stage of consultation, we would welcome your views on each of these works.

Careful consideration will be given to reducing any effects from our proposed works, with options including careful routeing and siting, planting and screening to reduce visual impact, habitat creation, measures to manage waste and reduce noise and traffic, and consideration of putting sections of overhead connection underground.

Throughout the consultation process, we will keep our preferred option under review to ensure the most appropriate option is ultimately taken forward. We would certainly need to carefully reassess options if the nuclear power station or other generation does not go ahead, and we will not build anything unless we are absolutely sure it is needed.

## National Grid in North Wales



**Dear resident,**  
My name is Martin Kinsey and I am the Senior Project Manager.

**As some of you may know, National Grid's job is to connect people to the energy we use. The energy we use to warm and light our homes, the power which keeps our factories and offices going, and the infrastructure essential to our modern lifestyle.**

You may also be aware that there are a number of new electricity generation projects being proposed in North Wales. These projects, and others like them all across the UK, are really important in replacing existing power stations which are nearing the end of their life.

We connect all of this new generation to the electricity network. This means we need to strengthen the existing network in places so it can accommodate the extra electricity being generated.

In this newsletter, you can find out more about each of the packages of work that make up our preferred option for connecting the new electricity generation being proposed in North Wales.

Over the coming weeks, we have a number of exhibitions in your area at which we will explain our proposals in more detail and members of the team will be available to answer any questions you may have – please see the back page for details.

**We hope to meet as many of you as possible at our exhibitions and to listen to your views which are extremely important in informing the decisions we make.**

## Find out more

This newsletter will provide you with an overview of the work we are proposing in North Wales and how you can take part in the consultation.

Pages 2-3

Overview of our work in North Wales

Page 4

Our proposed work between Wylfa, Anglesey and Pentir, Gwynedd

Page 5

Our proposed work in West Gwynedd

Page 6

Our proposed work at the Glaslyn Estuary

Page 7

How you can have your say

Page 8

Exhibition dates and venues



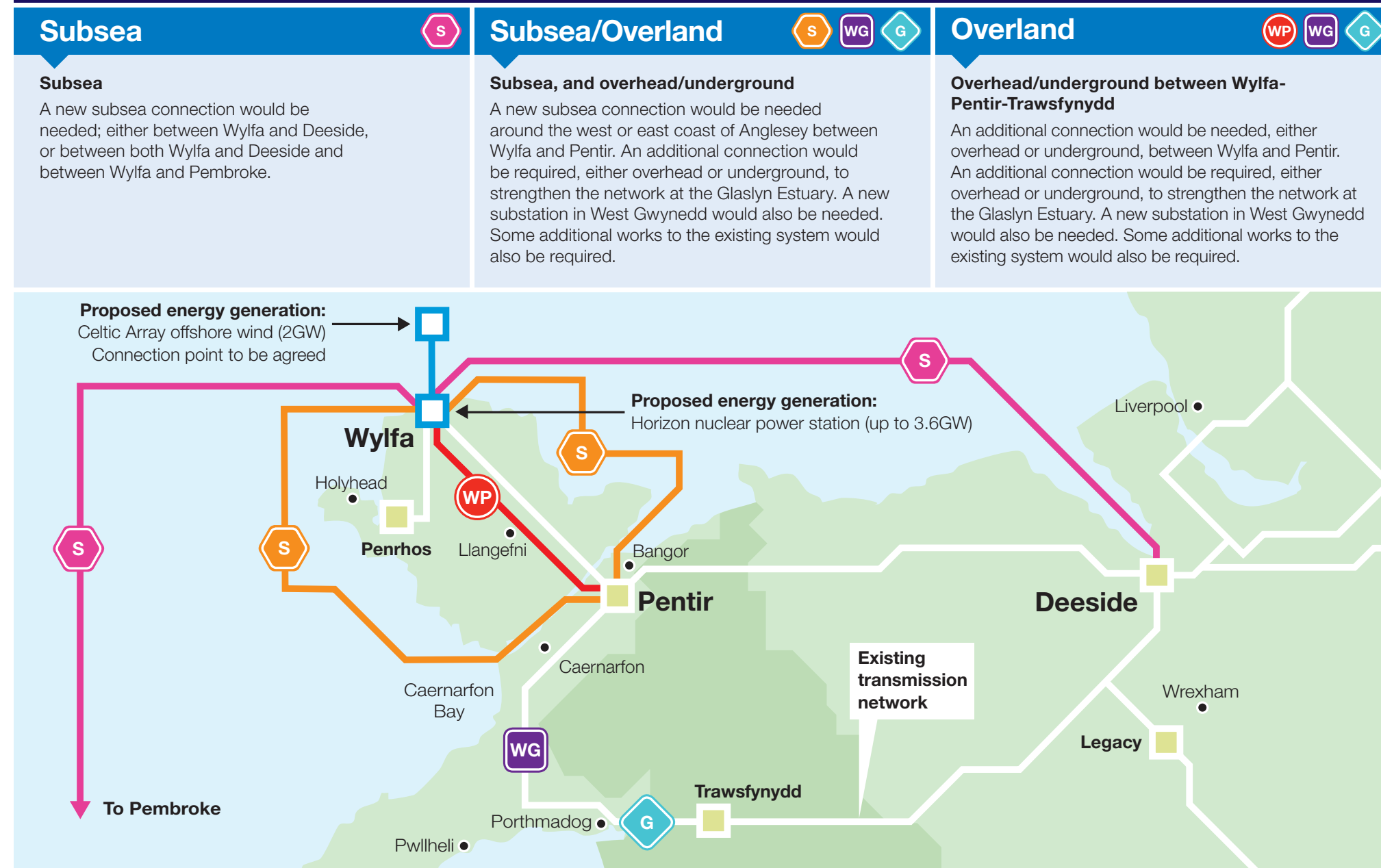
## The connection options we considered

To identify the best way to connect the proposed new energy generation in North Wales, National Grid undertakes a process to identify 'strategic options'.

During this process, we identified a large number of potential ways to connect the new electricity generation proposed in North Wales to the electricity network. These were subsea, overland, or a combination of both and are summarised below.

You can find out more about the approach National Grid takes when connecting new energy generation by reading 'Our approach to the design and routing of new electricity transmission lines'. You can also find out more information about the different options we considered for connecting the proposed electricity generation in North Wales by reading our 'Strategic Options Report'. Please see opposite page for details.

THE DIAGRAM BELOW SETS OUT THE DIFFERENT CONNECTION OPTIONS WE ASSESSED:



## Reviewing the options

### Subsea – HVDC/AC

- For subsea connections to Deeside or Pembroke, National Grid would need to use HVDC (High Voltage Direct Current) cables. For a subsea connection to Pentir, we could use either HVDC or AC (Alternating Current) cables, due to the distance being much shorter.
- There are environmental considerations when laying subsea cables. However, these can often be reduced or avoided by careful routing.
- HVDC is an evolving technology. There are no HVDC systems of this capacity installed anywhere in the world. For both options this represents a technical and financial risk.
- For HVDC connections, new converter stations would be required at the ends of each connection. A typical converter station is the size of a large DIY warehouse.

- Capital costs are estimated at between £1.6 billion and £2 billion for HVDC, and between £2.2 and £2.5 billion for AC subsea connections. Cost is important as it is ultimately passed on to the public through energy bills.

**Taking into account these considerations, a subsea option is not our preliminary preferred connection option.**

### Substation in West Gwynedd

For all options (aside from subsea HVDC), a new substation in West Gwynedd would be needed to maintain reliable supplies to the area.

### Overhead/underground between Wylfa and Pentir

- The effects of a wholly underground route would be largely limited to the construction phase.
- The visual and landscape effect of an overhead line is recognised, but National Grid believes it would be possible to reduce/avoid this with options including careful routing, planting and screening or consideration of putting sections of the connection underground.
- The total cost of the project, including 40 km of underground cable, would be approximately £1.7 billion. That is £923 million more than the equivalent project based on an overhead line route.

**Taking into account these considerations, National Grid's preliminary preference is for an overhead connection.**

### Overhead/underground at the Glaslyn Estuary

- The effects of a wholly underground route would be largely limited to the construction phase.
- The existing connection at the Glaslyn Estuary is already underground.
- A wholly overhead connection would have a high landscape and visual impact, particularly with regard to Snowdonia National Park.
- A wholly underground connection would be 6 km long and would cost £132 million. That is £121 million more than an overhead connection.

**Taking into account these considerations, National Grid's preliminary preference is for an underground connection at the Glaslyn Estuary.**

## Our preliminary preferred option

Following the strategic options process, our preliminary preferred option is for an overland connection, which consists of three key packages of work. These include an additional overhead connection between Wylfa and Pentir, a new substation in West Gwynedd, and an additional underground connection at the Glaslyn Estuary. For all of these, careful consideration would be given to reducing any effects.

<h3>Between Wylfa, Anglesey and Pentir, Gwynedd</h3> <p><b>Work proposed</b> An additional overhead connection between Wylfa and Pentir.</p> <p><b>Why it's needed</b> To connect new low-carbon generation sources to the existing network in North Wales.</p> <p><b>Have your say</b> We would like your views on our preliminary preference for an overhead connection. We would also like your views on the route corridors we have identified and any areas of sensitivity. <b>You can find out more information on page four.</b></p>	<h3>West Gwynedd</h3> <p><b>Work proposed</b> A new substation in West Gwynedd.</p> <p><b>Why it's needed</b> To strengthen the network and ensure reliable supplies are maintained in the area, including to the Llyn Peninsula.</p> <p><b>Have your say</b> We would like your views on the three potential substation sites we have identified. <b>You can find out more information on page five.</b></p>	<h3>The Glaslyn Estuary</h3> <p><b>Work proposed</b> An additional underground connection to replace and upgrade the existing underground connection.</p> <p><b>Why it's needed</b> To strengthen the network to be able to handle the increased amount of energy in the system.</p> <p><b>Have your say</b> We would like your views on our preliminary preference for an underground connection and the route corridor and possible route alignment we have identified. <b>You can find out more information on page six.</b></p>
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A number of additional works would also be required to strengthen the electricity network. These would include work on existing overhead lines in North Wales, installation of equipment to boost transmission strength and work on existing substations at Wylfa, Pentir and Trawsfynydd. We do not yet know the full details of these works but as this becomes clearer, we are committed to keeping people fully informed.

As part of this first stage of consultation, we welcome your thoughts and views on our preliminary preferred strategic option. It was chosen as we believe it achieves the best balance between important technical, economic, social and environmental considerations when compared with the others we assessed. However, we will keep our preferred strategic option under review throughout the consultation process to ensure that the most appropriate option is ultimately taken forward.

## Additional energy sources

New energy generation is continually being proposed to meet our need for new, low carbon sources of electricity.

An agreement was signed in July 2012 with Greenwire to connect 1 GW of Irish onshore wind energy to Pentir. National Grid is now considering the best way to make this connection. It is also possible that National Grid may need to connect other proposed new energy generation sources to the electricity network in North Wales in the future.

As this work moves forward, National Grid will keep people fully informed, and is committed to regularly reviewing our preferred option to ensure the most appropriate option is ultimately taken forward.

However, National Grid believes that the preferred strategic option it has brought forward for Horizon's new nuclear power station and the offshore wind being proposed by Celtic Array represents the best connection option for this power. Regardless of what additional generation needs to be connected in North Wales in the future, we anticipate the works proposed as part of our preferred option would still be required.



### For more information

A copy of our 'Need Case' and 'Strategic Options Report', as well as 'Our approach to the design and routing of new electricity transmission lines' and other project documents are available for download from:

[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).



# A new overhead connection between Wylfa and Pentir



A number of low carbon energy projects on and around Anglesey are being proposed and will need connecting to the electricity network.

Horizon Nuclear Power has a contract with National Grid to connect a proposed new nuclear power station at Wylfa on Anglesey with a generation capacity of up to 3.6 gigawatt (GW). Celtic Array also has a contract to connect 2 GW of offshore wind energy being proposed in the Irish Sea.

The existing 400 kV overhead line on Anglesey runs between a National Grid substation at Wylfa and one at Pentir, Gwynedd. Even when the existing 1 GW Magnox nuclear power station has been decommissioned, the existing overhead line would not be able to accommodate all of the new generation that is being proposed.

Following the strategic options process, our preliminary preferred option includes an additional overhead connection from

Wylfa to an existing substation at Pentir. As part of our first stage of consultation, we would welcome your views on this. If this strategic option is taken forward, careful consideration would be given to reducing effects from the connection, with options including:

- Careful routing of the overhead line to avoid populated areas and areas communities most value
- Use of different pylon types which could include 'low height' and/or the new 'T-pylon'
- Consideration of undergrounding in particularly sensitive areas
- Planting/screening measures

We would also welcome your views on the route corridor options we have identified, together with your views on areas you feel are particularly sensitive. You can find out details about how you can register your views on pages seven and eight.

## Wylfa-Pentir Initial Route Corridor Report

**Our Initial Route Corridor Report has identified four possible route corridors across Anglesey and five possible crossing options across the Menai Strait to Pentir.** In deciding which route corridor we take forward, the public has an important role to play.

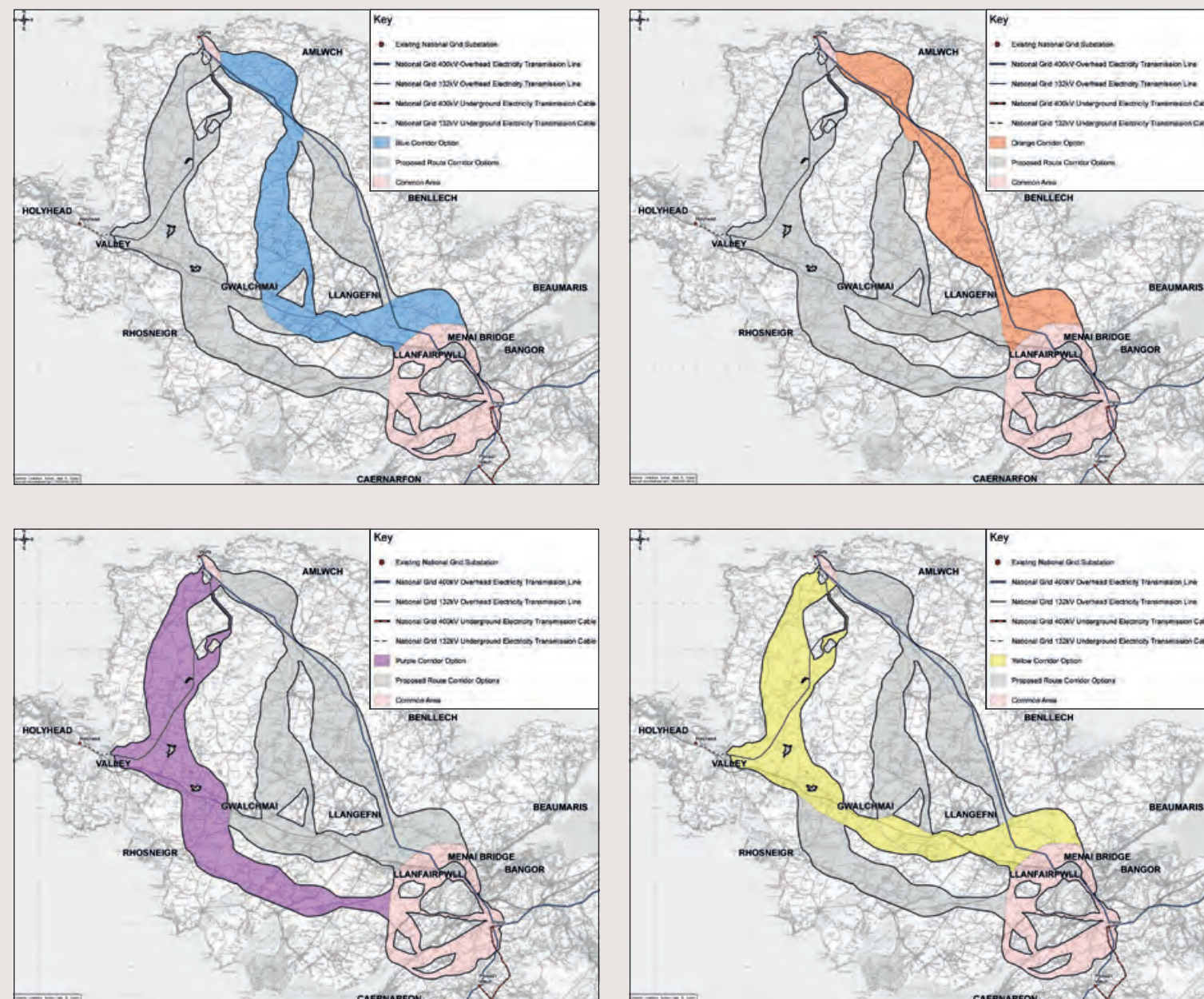
A route corridor is a broad width of land within which the new connection could be built. The corridor could be very wide in some places (up to 4 km); in others it may be more restricted as a result of constraints such as towns, villages and designated environmental areas.

In developing these corridors, we have given careful consideration to environmental and social factors, possible impacts on local communities, as well as financial and engineering constraints.

We have also held initial discussions with stakeholders including local authorities, Welsh Government, the Countryside Council for Wales, the Environment Agency Wales, Snowdonia National Park, Cadw, the generators and ScottishPower Energy Networks. We will continue to liaise with these important stakeholders to ensure their views on our proposals are fully considered as part of the consultation process.

# Proposed route corridors between Wylfa and Pentir

These maps show the four coloured route corridors and five potential Menai Strait crossing options to Pentir we are consulting on. If this strategic option is taken forward, only one route corridor and one crossing option will ultimately be progressed.



**i For more information**

You can see all of these maps in more detail at our exhibitions and on our website. Copies of our **Wylfa-Pentir Initial Route Corridor Report**, are available for download from:

[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).

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# A new substation in West Gwynedd



A new substation in West Gwynedd would be needed to maintain reliable supplies to homes and businesses in the area.

National Grid currently shares the existing overhead line in West Gwynedd with local energy supplier ScottishPower Energy Networks.

To accommodate the extra power being proposed in North Wales, we would need to make use of the cables on both sides of the overhead line between Pentir and Trawsfynydd.

To allow this to happen, a new substation near to the existing line would be needed, strengthening the network and ensuring reliable electricity supplies are maintained to surrounding areas including the Llyn Peninsula. We would like your thoughts on this work as part of our preliminary preferred strategic option.

Careful consideration would be given to reducing the effects of a new substation, with measures including:

- Landscape screening and planting
- Habitat creation
- Measures to reduce noise

As part of this consultation, we would welcome your views on the three substation site options near Bryncir we have identified. You can find out details about how you can register your views on pages seven and eight.

## West Gwynedd Substation Siting Study

**To identify potential substation sites, National Grid undertook a Substation Siting Study, which took account of amenity and environmental considerations, the effects on local communities and suitability for transport access.**

We have also held initial discussions with stakeholders including local authorities, Welsh Government, the Countryside Council for Wales, the Environment Agency Wales, Snowdonia National Park, Cadw, the generators and ScottishPower Energy Networks. We will continue to liaise with these important stakeholders to ensure their views on our proposals

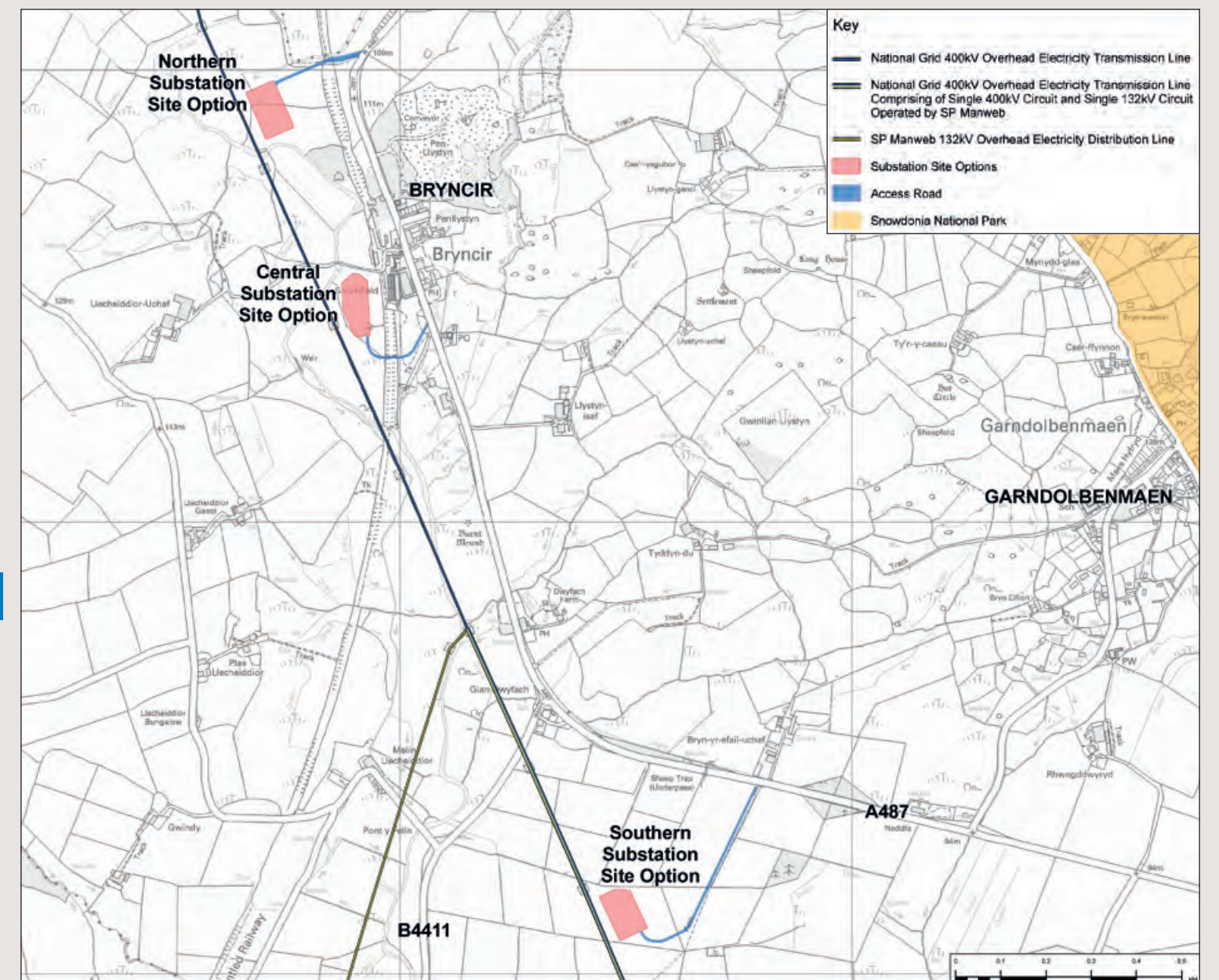
are fully considered as part of the consultation process.

After conducting a thorough search of 20 potential sites, three potentially suitable site options near Bryncir have been identified for a substation: Northern, Central and Southern. Only one substation site will be taken forward.

The exact details of the substation are still to be confirmed but it could contain equipment up to 10 metres high and potentially have a footprint of about two acres in size, with additional land for screening.

# Proposed substation site options near Bryncir

This map shows the three potential substation site options we are consulting on. Only one of these substation sites will ultimately be progressed.



**i For more information**

A copy of our **West Gwynedd Substation Siting Study** is available for download from:

[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).

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# Additional underground electricity cables at the Glaslyn Estuary



To handle the increased energy in the network, an additional connection would be needed at the Glaslyn Estuary.

The existing overhead electricity line in West Gwynedd runs from Pentir to Trawsfynydd. It changes to underground cables at Wern, to the west of Tremadog. The connection then remains underground for approximately 6 km, recognising the environmental sensitivities of the estuary and views into Snowdonia National Park. It then resurfaces at Y Garth near Minffordd and changes to an overhead line again, before continuing to Trawsfynydd.

Our preferred strategic option includes the construction of an additional underground route of up to 12 cables to accommodate the additional power being proposed in North Wales. This would mean replacing the three existing cables that were originally installed in the 1960s. It is highly likely that work to replace them would have been needed anyway in the next 5-10 years, as they come to the end of their operational life.

Where an underground cable joins onto an overhead line, the transition from one to the other takes place at a 'sealing end compound'. As part of our work, we would also need to extend the existing sealing end compounds at each end of the underground cable at Wern and Y Garth to accommodate the additional cable connections.

Careful consideration would be given to reducing any effects from the new underground cables and extension to sealing end compounds with measures including:

- Landscaped screening and planting
- Habitat creation
- Managing traffic and waste during construction

For this consultation, we would welcome your views on the proposed route corridor and potential route alignment we have identified. You can find out details about how you can register your views on pages seven and eight.

## Glaslyn Estuary Route Corridor Report

To identify the most appropriate route for the new connection to take, National Grid has undertaken a Route Corridor Report. A 'route corridor' is a broad width of land within which the new connection could be built. We call the actual path the cables could take a 'route alignment'.

The proposed route corridor and possible route alignment identified broadly follows the same route as the existing underground cables.

In identifying the route corridor and route alignment, careful consideration has been given to environmental and social factors, possible impacts on local communities, as well as financial and engineering constraints.

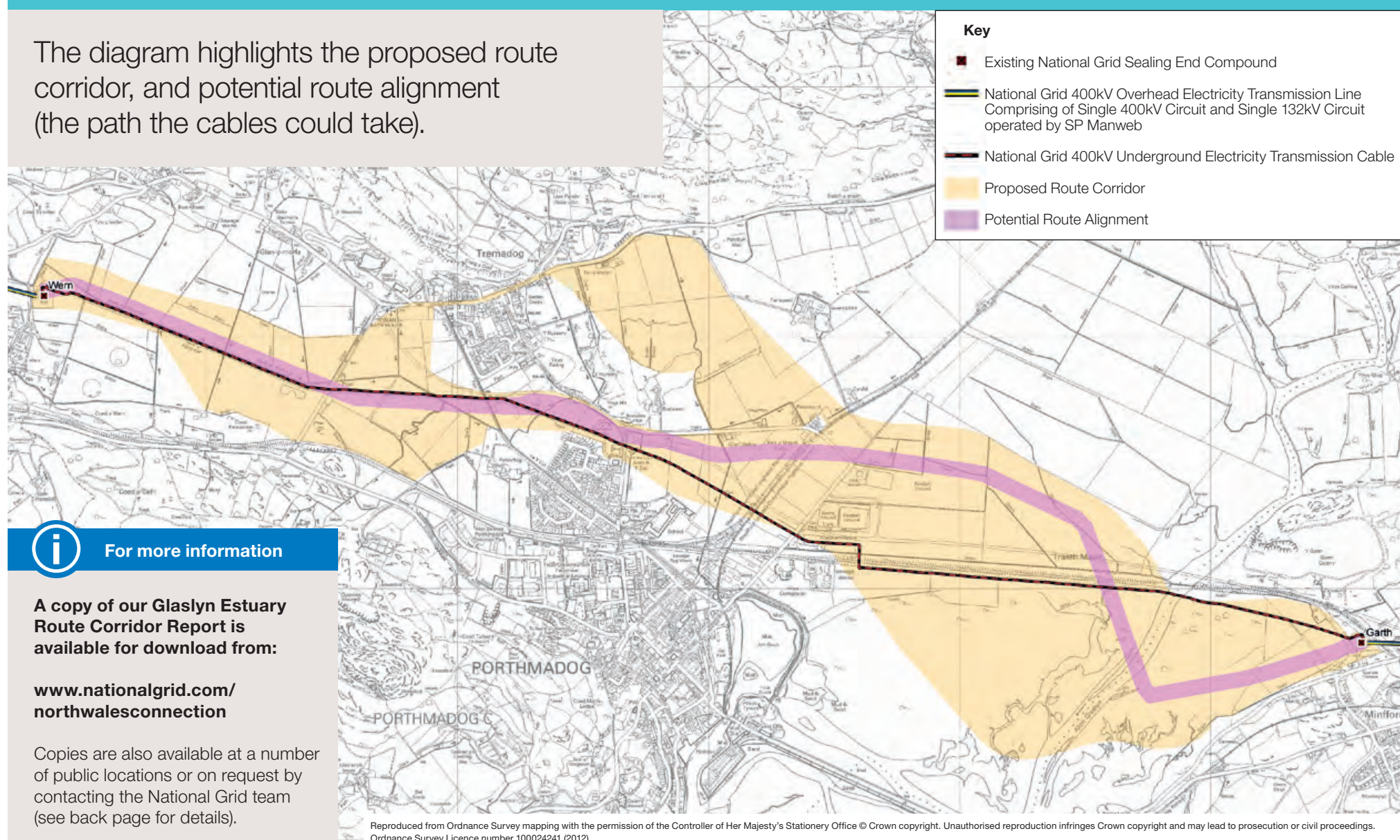
We have also held initial discussions with stakeholders including local authorities, Welsh Government, the Countryside Council for Wales, the Environment Agency Wales, Snowdonia National Park, Cadw, the generators and ScottishPower Energy Networks. We will continue to liaise with these important stakeholders to ensure

their views on our proposals are fully considered as part of the consultation process.

An option was identified in the Route Corridor Report which would mean some of the cables could be put along Dublin Street and High Street through Tremadog. However, the route alignment we have brought forward avoids the need to put any of the cables through Tremadog.

# Proposed route corridor and potential route alignment at the Glaslyn Estuary

The diagram highlights the proposed route corridor, and potential route alignment (the path the cables could take).



**For more information**

A copy of our Glaslyn Estuary Route Corridor Report is available for download from:

[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).

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# Have your say

Local communities have an important role to play in the decisions we make. National Grid is committed to talking and listening to the public to ensure we receive as much feedback as possible and can take onboard the views and insights of people living in the area.



Our first stage of public consultation runs until 21 December. We will be holding exhibitions at a number of locations and will be taking our exhibition vehicle out on the road so we can capture as many views as possible. Full details of all exhibitions can be found on the back page.

We follow a complex process of analysis and evaluation and this includes several stages of consultation. The timeline on this page highlights the different stages of the project and when consultation will take place.

Local communities have an important role to play

You can also read more about how National Grid consults with communities and other stakeholders in 'Our approach to the design and routing of new electricity transmission lines' (details below).

We do hope you can come along to one of our events and we look forward to meeting with you in your local area.

There are a number of ways you can register your views as part of the consultation process.

- You can visit [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) where you can register your details and complete a feedback form online.
- You can come along to one of our exhibitions where you can find out more information, ask any questions and submit your comments on our feedback form.
- You can contact us (details on the back page) to request a feedback form and one will be sent to you together with further information and a freepost envelope. Alternatively, you can submit your views by writing to us by post or by email.

# Indicative project timeline

This is a long and complicated project and as you can see from the timelines below will include several stages of consultation. As you might expect, timescales may move but as we progress we will keep you fully informed.

	2011	2012	2013	2014	2015 onwards
<b>WYLFA - PENTIR</b>	<ul style="list-style-type: none"> <li>Initial appraisal of need case and strategic options</li> </ul>	<ul style="list-style-type: none"> <li>Need Case, Strategic Options Report and Initial Route Corridor Report published</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>Announcement of preferred route corridor</li> <li>Information published to explain the decisions we've made</li> <li>Ongoing technical and environmental studies and consultation with key stakeholders</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>EIA completed</li> <li>Public consultation on final design</li> </ul>	<ul style="list-style-type: none"> <li>Development Consent Order (DCO) application and consideration</li> <li>Subject to DCO approval construction could begin in 2016</li> </ul>
<b>WEST GWYNEDD</b>	<ul style="list-style-type: none"> <li>Initial appraisal of need case and strategic options</li> </ul>	<ul style="list-style-type: none"> <li>Need Case, Strategic Options Report and Substation Siting Study published</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>Announcement of preferred site selected</li> <li>Information published to explain the decisions we've made</li> <li>Detailed substation design and public engagement</li> <li>Earliest date for submitting planning application</li> </ul>	<ul style="list-style-type: none"> <li>Subject to planning permission, earliest start of construction</li> </ul>	
<b>GLASLYN ESTUARY</b>	<ul style="list-style-type: none"> <li>Initial appraisal of need case and strategic options</li> </ul>	<ul style="list-style-type: none"> <li>Need Case, Strategic Options Report and Route Corridor Report published</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>Announcement of final alignment</li> <li>Information published to explain the decisions we've made</li> <li>Final alignment design and public engagement</li> </ul>	<ul style="list-style-type: none"> <li>Earliest start of construction</li> </ul>	

# Key project documents

Throughout this newsletter we have referred to a number of important documents which will help you find out more information about the North Wales Connection Project. These are summarised below.

- Need Case:** Explains why the project is needed.
- Strategic Options Report:** Explains our selection and appraisal of the options we considered for connecting the proposed new energy generation.
- Wylfa-Pentir Initial Route Corridor Report:** Examines and identifies the preliminary potential overhead route corridors between Wylfa and Pentir.
- West Gwynedd Substation Siting Study:** Examines and identifies suitable site options for a substation in West Gwynedd.
- Glaslyn Estuary Route Corridor Report:** Examines our preliminary preference for an underground connection, and identifies a proposed route corridor and potential route alignment at the Glaslyn Estuary.
- FAQ:** Answers to frequently asked questions.
- Our approach to the design and routing of new electricity transmission lines:** Explains the process that National Grid follows when planning new transmission routes.

Copies of these documents can be downloaded from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available from a number of public locations or on request by contacting the National Grid team (see back page for details).



# Consultation events

We are holding a series of events at locations across Anglesey and Gwynedd, at both static venues and in our mobile exhibition vehicle.

Your feedback has an important role to play in informing the decisions we make and we hope to meet as many of you as possible at our events.

## Wylfa – Pentir events:

### Saturday 20 October, 10am-4pm

Bull Hotel, Llangefni, LL77 7LR

### Tuesday 23 October, 1.30pm-7.30pm

Memorial Hall, Llanfairpwll, Anglesey, LL61 5JB

### Wednesday 31 October, 1.30pm-7.30pm

Community & Ex-servicemen's Hall, Benllech, LL74 8SN

### Thursday 1 November, 11am-4pm

(MOBILE), Primary School, Bodorgan, LL62 5AB

### Friday 2 November, 1.30pm-7.30pm

Village Hall, Llanfachraeth, LL65 4UW

### Saturday 3 November, 11am-4pm

(MOBILE), Primary School, Rhosybol, LL68 9PP

### Monday 5 November, 1.30pm-7.30pm

Village Hall, Cemaes, LL67 0HL

### Monday 5 November, 11am-4pm

(MOBILE), Vaynol Arms, Pentir, LL57 4EA

### Tuesday 6 November, 1.30pm-7.30pm

Celtic Royal Hotel, Caernarfon, LL55 1AY

### Thursday 8 November, 11am-4pm

(MOBILE), Gaerwen Business Park, Gaerwen, LL60 6DN

### Friday 9 November, 1.30pm-7.30pm

Village Hall, Rhosneigr, LL64 5UX

### Friday 9 November, 11am-4pm

(MOBILE), Gwalchmai Hotel, Gwalchmai, LL65 4PU

### Saturday 10 November, 10am-4pm

Community School, Llanerchymedd, LL71 8DP

### Monday 12 November, 1.30pm-7.30pm

Iorwerth Rowlands Centre, Steeple Lane, Beaumaris, LL58 8AE

### Tuesday 13 November, 1.30pm-7.30pm

Penrhyn Hall, Tan-Y-Fynwent, Bangor, LL57 1NW

### Tuesday 13 November, 11am-4pm

(MOBILE), Neuadd Griffith Reade Hall, Llanfaethlu, LL65 4NP

### Wednesday 14 November, 11am-4pm

(MOBILE) Arvonias Coaches, Llanrug, LL55 4AA

### Thursday 15 November, 11am-4pm

(MOBILE), Llys Llewelyn Heritage Centre, Aberffraw, LL63 5BQ

### Friday 16 November, 1.30pm-7.30pm

Community Centre, Brynsiencyn, LL61 6HZ

### Friday 16 November, 11am-4pm

(MOBILE), Village Hall, Bodedern, LL65 3TZ

### Monday 19 November, 1.30pm-7.30pm

Wylfa Sports and Social Centre, Cemaes Bay, LL67 0DE

### Wednesday 21 November, 1.30pm-7.30pm

Bull Hotel, Llangefni, LL77 7LR

### Thursday 22 November, 1.30pm-7.30pm

Thomas Telford Centre, Menai Bridge, LL59 5EA

### Friday 23 November, 1.30pm-7.30pm

Memorial Hall, Amlwch, LL68 9ET

### Saturday 24 November, 10am-4pm

Memorial Hall, Y Felinheli, LL56 4JB

### Tuesday 27 November, 1.30pm-7.30pm

Town Hall, Holyhead, LL65 1HN

### Wednesday 28 November, 11am-4pm

(MOBILE), Hotel Cymyran, Llanfair-yn-Neubwll, LL65 3LD

## West Gwynedd events:

### Friday 2 November, 11am-4pm

(MOBILE), Tile Stop, Bryncir, LL51 9LX

### Saturday 17 November, 10am-4pm

Primary School, Garndolbenmaen, LL51 9SZ

### Saturday 1 December, 10am-4pm

Goat Inn, Glandwyfach, Bryncir, LL51 9LJ

## The Glaslyn Estuary events:

### Friday 26 October, 1.30pm-7.30pm

Glaslyn Leisure Centre, Porthmadog, LL49 9HW

### Saturday 10 November, 10am-4pm

Glaslyn Leisure Centre, Porthmadog, LL49 9HW

### Saturday 17 November, 10am-4pm

Memorial Hall, Penrhyndeudraeth, LL48 6LS

### Monday 26 November, 1.30pm-7.30pm

Memorial Institute, Tremadog, LL49 9RB

### Thursday 29 November, 11am-4pm

(MOBILE), Galw Gwynedd, Unit 2, Snowdonia Business Park, Minffordd, LL48 6LD

For the safety of the public, all our static and mobile exhibitions will be held subject to weather conditions. All our mobile exhibitions are scheduled to run from 11am until 4pm. However, we will keep the mobile vehicle open later if there is still daylight.

Please contact our freephone number if you would like confirmation that the event you are planning to come along to is going ahead. Details of any cancellations will also be posted on the project website.

## Viewing key documents

Copies of all of our key documents are available to view at these public locations across Anglesey and Gwynedd from 20 October 2012

### Anglesey Libraries

#### Amlwch Library

Lon Parys, Amlwch, Anglesey, LL68 9EA

#### Beaumaris Library

David Hughes Community Centre, Beaumaris, Anglesey, LL58 8AL

#### Benllech Library

Bangor Road, Benllech, Tyn y Gongl, LL74 8TF

#### Cemaes Library

Glascoed Road, Cemaes Bay, Anglesey, LL67 0HN

#### Holyhead Library

Newry Fields, Holyhead, Anglesey, LL65 1LA

#### Llangefni Library

Lon y Felin, Llangefni, Anglesey, LL77 7RT

#### Menai Bridge Library

Wood Street, Menai Bridge, Anglesey, LL59 5AS

### Moelfre Library

Y Ganolfan, Moelfre, Anglesey, LL72 8HA

### Newborough Library

Prichard Jones Institute, Newborough, Anglesey, LL61 6SY

### Rhosneigr Library

High Street, Rhosneigr, Anglesey, LL64 5UX

### Other locations

#### Isle of Anglesey County Council

Council Offices, Llangefni, Anglesey, LL77 7TW

#### Anglesey Business Centre

Bryn Cefni Business Park, Llangefni, Anglesey, LL77 7XA

#### Gwynedd County Council

Council Offices, Shirehall Street, Caernarfon, Gwynedd, LL55 1SH

### Gwynedd Libraries

#### Bangor Library

Gwynedd Road, Bangor, Gwynedd, LL57 1DT

#### Caernarfon Library

Pavillion Hill, Caernarfon, Gwynedd, LL55 1AS

#### Criccieth Library

High Street, Criccieth, Gwynedd, LL52 0RN

#### Penygroes Library

Dyffryn Nantlle Technology Centre, Heol y Dwr Penygroes, Gwynedd, LL54 6LR

#### Porthmadog Library

Chapel Street, Porthmadog, Gwynedd, LL49 9BT

## Contact us:

There are lots of ways that you can find out more information, by:



Visiting our project website at:  
[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)



Sending an email to:  
[nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)



Calling our freephone number:  
**0800 990 3567**. Lines are open between 9:00am - 5:00pm Monday - Friday



Writing to our freepost address at:  
**FREEPOST NATIONAL GRID  
NW CONNECTION**

FSC  
LOGO

Appendix I: Feedback forms (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) dual language

## Ffurflen Adborth

## Cysylltiad Gogledd Cymru

Hydref 2012

 Wylfa-Pentir

Mae'r ffurflen hon yn rhoi cyfle i chi roi adborth ar waith arfaethedig National Grid i gysylltu gorsaf bŵer niwclear newydd yn Wylfa, Ynys Môn a fferm wynt ar y môr ym Môr Iwerddon. Am fanylion ynghylch sut i gael mwy o wybodaeth am y prosiect, ewch i'r dudalen ôl.

**Llenwi'r ffurflen hon a chyflwyno eich sylwadau**

Ar gyfer yr ymgynghoriad hwn, hoffai National Grid gael eich adborth ar:

- Y dewis strategol a ffefrir gan National Grid
- Dewisiadau ar gyfer coridor llwybr rhwng Wylfa a Phentir
- Prif ardaloedd sensitif o fewn coridorau'r llwybr

Er mwyn llenwi'r ffurflen hon, byddai'n ddefnyddiol i chi gael:

- **Llyfryn Esbonio Ffurflen Adborth Wylfa-Pentir** (gellir gwneud cais am gopïau drwy ffonio 0800 990 3567, drwy ymweld ag un o'n harddangosfeydd, neu drwy fynd i wefan y prosiect – mae'r manylion ar y dudalen ôl).

Fel rhan o'n gwaith yng Ngogledd Cymru, mae National Grid hefyd yn cynnal ymgynghoriadau cyhoeddus ar gyfer ei waith arfaethedig yng **Ngorllewin Gwynedd** ac yn **Aber Glaslyn**. Gellir cael mwy o wybodaeth am yr ymgynghoriadau hyn ar ein gwefan, drwy ymweld ag un o'n harddangosfeydd, neu drwy gysylltu â ni yn uniongyrchol.

**Sut i gymryd rhan yn yr ymgynghoriad**

- **Drwy ddefnyddio'r ffurflen adborth hon:** Gallwch lenwi'r ffurflen hon a'i phostio i'r cyfeiriad isod
- **Ar-lein:** Gallwch lenwi'r ffurflen hon a gweld yr holl fapiau perthnasol (gyda'r gallu i weld yr ardaloedd yn fwy manwl) yn: [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Neu, gallwch gyflwyno eich sylwadau drwy ysgrifennu atom yn: **FREEPOST NATIONAL GRID, NW CONNECTION** neu anfon e-bost at: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com). Cofiwch roi eich enw er mwyn sicrhau bod eich ymateb yn cael ei gynnwys, a nodwch eich sefydliad os yw hynny'n berthnasol.

**Eich adborth**

Gallwch ddewis llenwi pob adran o'r ffurflen adborth hon neu dim ond y rhannau rydych chi'n teimlo sydd fwyaf perthnasol i chi. Pan fo modd, ymhelaethwch ar eich adborth – y mwyaf o wybodaeth y gallwch ei rhoi i ni, y mwyaf o wybodaeth fydd gennym i wneud ein penderfyniadau.

Ysgrifennwch yn glir mewn inc glas neu ddu yn unig. Bydd yr ymgynghoriad hwn ar agor tan **21 Rhagfyr 2012**. Dylech gyflwyno eich adborth yn ystod y cyfnod hwn.

Diolch i chi am roi o'ch amser i lenwi'r ffurflen hon.

## ADRAN A – AMDANOCH CHI

Rhowch eich enw er mwyn gwneud yn siŵr bod eich ymateb yn cael ei gynnwys.

Teitl: \_\_\_\_\_ Enw Cyntaf: \_\_\_\_\_ Cyfenw: \_\_\_\_\_

Ydych chi'n ymateb ar ran sefydliad? \_\_\_\_\_

Ydw  Nac ydw  Os ydych chi, pa sefydliad: \_\_\_\_\_

Cyfeiriad: \_\_\_\_\_

\_\_\_\_\_ Cod Post: \_\_\_\_\_

E-bost: \_\_\_\_\_ Dyddiad: \_\_\_\_\_

Ystod Oedran: 18 ac iau  19–34  35–50  51–65  dros 65

**Hysbysiad Preifatrwydd Data**

Mae National Grid wedi ymrwymo i barchu eich preifatrwydd ac i gydymffurfio â'r holl ddeddfau diogelu data a phreifatrwydd sy'n berthnasol. Gallai eich gwybodaeth gael ei datgelu neu ei rhannu â'r canlynol:

- cwmnïau eraill sy'n rhan o Grŵp National Grid;
- darparwyr gwasanaeth trydydd parti, contractwyr, neu ymgynghorwyr sy'n darparu gwasanaethau i ni;
- yr Arolygiaeth Gynllunio, ac unrhyw Awdurdod Cynllunio Lleol sy'n berthnasol

## ADRAN B – DEWISIADAU STRATEGOL

Er mwyn canfod y ffordd fwyaf priodol i gysylltu'r prosiectau cynhyrchu ynni newydd sydd wedi'u cynllunio ar gyfer Gogledd Cymru, mae National Grid yn ymgymryd â phroses i ddyynodi 'dewisiadau strategol'; ffordd posibl o gysylltu'r prosiectau cynhyrchu trydan newydd sy'n cael eu cynnig.

Gallwch ddod o hyd i fwy o wybodaeth am y dewisiadau hyn ac am yr asesiad manwl a gynhaliwyd drwy ddarllen y '**Strategic Options Report**', neu'r crynodeb yn **Llyfryn Esbonio Ffurflen Adborth Wylfa-Pentir**. Gellir cael mwy o wybodaeth a chopi o'r adroddiad a'r llyfryn esbonio ar ein gwefan, yn un o'n harddangosiadau neu drwy gysylltu â ni yn uniongyrchol (mae'r manylion ar y dudalen ôl).

Yn dilyn y 'Strategic Options Report', barn ragarweiniol National Grid yw mai dyma'r dewis a ffefrir:

- Cysylltiad uwchben ychwanegol rhwng Wylfa, Ynys Môn a Phentir, Gwynedd
- Is-orsaf newydd yng Ngorllewin Gwynedd
- Cysylltiad tanddaearol ychwanegol yn Aber Glaslyn

### **C1. Ydych chi'n cytuno â chanfyddiadau rhagarweiniol 'Strategic Options Report' National Grid?**

Ydw       Nac ydw       Dim barn

### **C2. Rhowch resymau dros eich ateb, ac unrhyw sylwadau eraill sydd gennych am ein 'Strategic Options Report'.**

## ADRAN C – CORIDORAU LLWYBR: WYLFA I BENTIR

Mae National Grid wedi cyhoeddi **'Initial Route Corridor Report'** sy'n nodi pedwar coridor llwybr posibl a phum dewis posibl ar gyfer croesi'r Fenai er mwyn cael cysylltiad llinell uwchben newydd rhwng Wylfa a Phentir.

Os eir ymlaen â'r dewis strategol hwn, rhoddir ystyriaeth ofalus i leihau unrhyw effeithiau a fydd yn deillio o'r cysylltiad, gyda mesurau'n cynnwys:

- Llwybro gofalus er mwyn osgoi ardaloedd poblog a'r ardaloedd mwyaf gwerthfawr ym marn y cymunedau
- Defnyddio gwahanol fathau o beilonau, a allai gynnwys peilonau 'uchder isel' a/neu'r 'peilonau-T' newydd
- Mesurau plannu/sgrinio
- Ystyried gosod o dan y ddaear mewn ardaloedd sensitif iawn

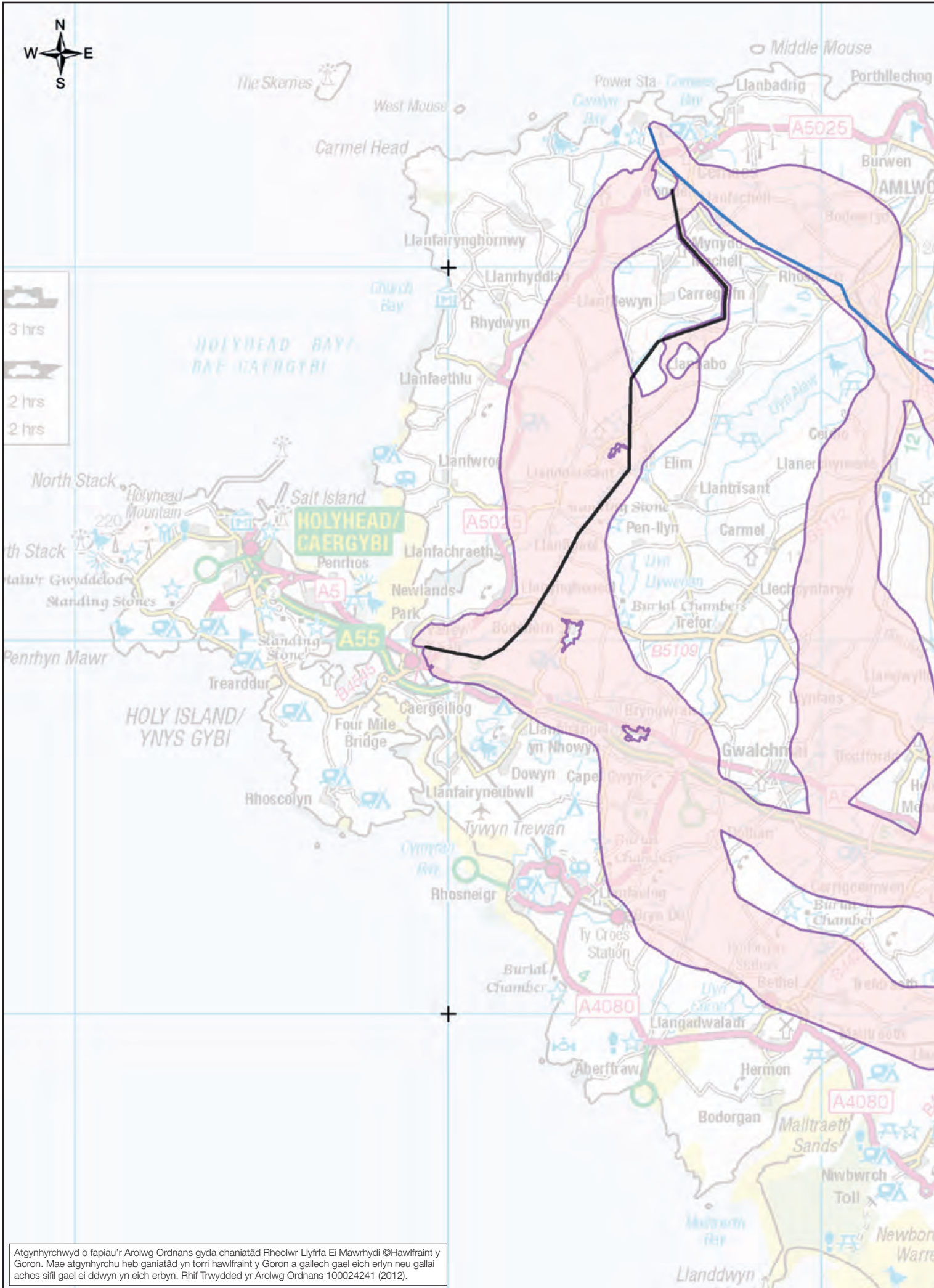
Gellir gweld map a chrynodeb o bob dewis ar gyfer croesi a llwybrau yn **Llyfryn Esbonio Ffurflen Adborth Wylfa-Pentir**, sy'n defnyddio cynnwys o'r **'Initial Route Corridor Report'**. Gellir gweld y ddwy ddogfen ar ein gwefan, yn un o'n harddangosfeydd, neu drwy gysylltu â ni yn uniongyrchol (mae'r manylion ar y dudalen ôl).

### **C3. O blith y coridorau llwybr a nodwyd ar draws Ynys Môn, pa un ddylai National Grid fwrw ymlaen ag ef yn eich barn chi? (Ticiwch un os gwelwch yn dda.)**

Glas       Piws       Melyn       Oren

### **C4. Rhowch eich rhesymau dros ddewis y coridor llwybr hwn.**






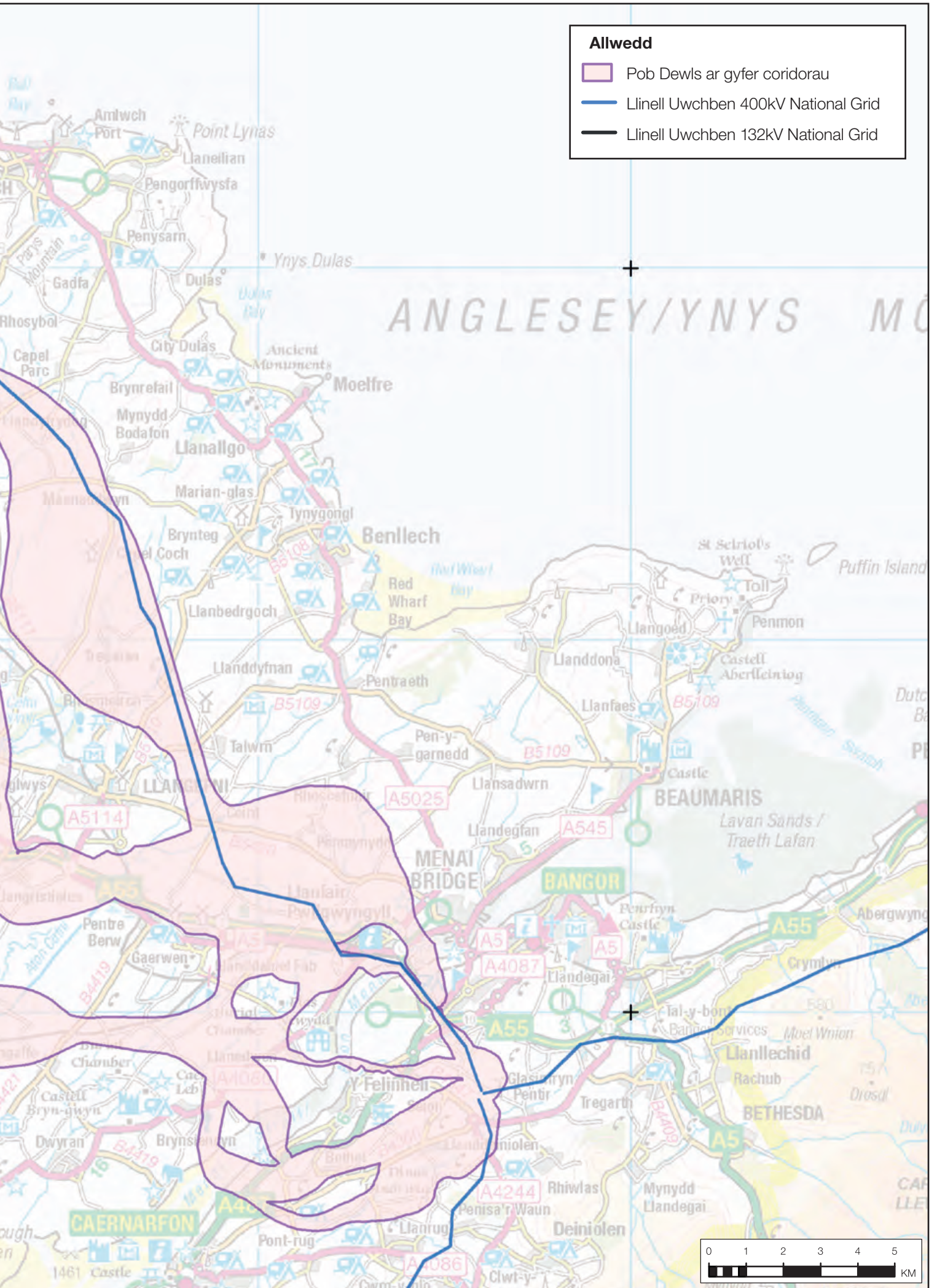


Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrhydi ©Hawlfraint y Goron. Mae atgynhychu heb ganiatâd yn torri hawlfraint y Goron a gallech gael eich erlyn neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



**Allwedd**

-  Pob Dewls ar gyfer coridorau
-  Llinell Uwchben 400kV National Grid
-  Llinell Uwchben 132kV National Grid



## ADRAN D – Y DEWISIADAU AR GYFER CROESI'R FENAI

**C5. O blith y dewisiadau a nodwyd i groesi'r Fenai i gyrraedd Pentir, pa un ddylai National Grid fwrw ymlaen ag ef yn eich barn chi? (Ticiwch un os gwelwch yn dda).**

A

B

C

D

E

**C6. Rhowch eich rhesymau dros ddewis yr opsiwn hwn ar gyfer croesi'r Fenai i gyrraedd Pentir.**

## ADRAN E – LLEOLIADAU SENSITIF

**C7. Er mwyn ein helpu i leihau effeithiau ein cynlluniau, byddem yn gwerthfawrogi eich barn ynghylch pa leoliadau rydych chi'n teimlo yw'r rhai mwyaf sensitif o fewn unrhyw un o'r coridorau llwybr a'r pwyntiau croesi sy'n cael eu ffafrio gennym ni.**

Rhowch ddisgrifiad ohonynt isod ac egluro pam rydych chi'n teimlo eu bod yn arbennig o sensitif. Dylech ddefnyddio X1, X2, X3 ayb i nodi'r lleoliadau'n glir ar y map yng nghanol y ffurflen hon. Bydd canol eich X yn nodi canol eich lleoliad.

**C7a.**

Lleoliad X1:

Sylwadau am X1:

**C7b.**

Lleoliad X2:

Sylwadau am X2:

**C7c.**

Lleoliad X3:

Sylwadau am X3:

**C7d.**

Os hoffech chi roi sylwadau am unrhyw leoliadau eraill sy'n arbennig o sensitif yn eich barn chi, nodwch y manau hyn ar y map yn yr un ffordd (e.e. X4) a rhoi eich sylwadau am y lleoliadau hyn isod:

## ADRAN F – EICH BARN AM EIN HYMGYNGHORIAD YNG NGOGLEDD CYMRU

Mae National Grid wedi ymrwymo i ymgysylltu ac ymgynghori'n agored â phawb sy'n dymuno rhoi eu sylwadau am ein gwaith arfaethedig. Byddem yn croesawu adborth ar eich profiad o'r ymgynghoriad hwn.

### C8. Ydy'r wybodaeth a gyflwynwyd wedi bod yn ddefnyddiol i'ch helpu i roi adborth ar ein gwaith arfaethedig?

Ydy  Nac ydy  Dim barn

### C9. Ydych chi'n teimlo bod National Grid wedi rhoi digon o gyfle i chi roi sylwadau am ein gwaith arfaethedig?

Ydw  Nac ydw  Dim barn

### C10. Rhowch eich rhesymau dros eich ymatebion i gwestiynau 8 a 9 ac unrhyw sylwadau pellach am ein hymgyngoriad ar gyfer ein gwaith arfaethedig rhwng Wylfa a Phentir.

## MWY O WYBODAETH

Gallwch gael mwy o wybodaeth a chopïau o'r holl ddogfennau a'r mapiau y soniwyd amdanynt yn y ffurflen hon ar ein gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) neu drwy gysylltu â ni yn:

Rhadffôn: **0800 990 3567**

E-bost: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)

Rhadbost: **FREEPOST NATIONAL GRID NW CONNECTION** (Nid oes angen stamp)

Gellir gweld copiâu o ddogfennau allweddol mewn nifer o leoliadau cyhoeddus hefyd. Ewch i'n gwefan neu cysylltwch â ni i gael mwy o wybodaeth

### Diolch i chi am lenwi'r ffurflen adborth hon.

Bydd yr holl sylwadau y byddwn yn eu derbyn yn cael eu dadansoddi ac yn ein helpu i wneud ein penderfyniadau.

Ni allwn ymateb yn bersonol i'r holl sylwadau a dderbyniwn, ond byddwn yn rhoi sylw i'r themâu a'r materion a godir mewn Adroddiad Adborth a fydd yn cael ei gyhoeddi cyn cam nesaf yr ymgynghoriad.

## Feedback Form

## North Wales Connection

Autumn 2012



This form is for you to provide feedback on National Grid's proposed work to connect a new nuclear power station at Wylfa, Anglesey and an offshore wind farm in the Irish Sea. For details of how you can find out more information about the project, please see the back page.

**Completing this form and submitting your comments**

For this consultation, National Grid would like your feedback on:

- National Grid's preferred strategic option
- Route corridor options between Wylfa and Pentir
- Key sensitive areas within the route corridors

To complete this form, it would be helpful for you to have the:

- **Wylfa-Pentir Feedback Form Explanation Booklet** (copies can be requested by calling 0800 990 3567, visiting one of our exhibitions, or by visiting the project website – details on back page).

As part of our work in North Wales, National Grid is also holding public consultations for its proposed work in **West Gwynedd** and at the **Glaslyn Estuary**. More information on these consultations can be found on our website, by visiting one of our exhibitions, or by contacting us directly.

**How you can take part in the consultation**

- **By using this feedback form:** You can complete this form and post it to the address below
- **Online:** You can complete this form and view all relevant maps (with the ability to zoom in on areas) at: [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Alternatively, you can submit your views by writing to us at: **FREEPOST NATIONAL GRID, NW CONNECTION** or emailing us at: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com). Please provide your name to ensure your response is included and state your organisation if applicable.

**Your feedback**

You can choose to complete all sections of this feedback form or just the parts you feel are most relevant to you. Where possible, please expand on your feedback – the more information you can give us, the more we can use your feedback to inform the decisions we make.

Please write clearly in black or blue pen only. This consultation is open until **21 December 2012**. Please submit feedback during this time.

Thank you for taking the time to complete this form.

## SECTION A – ABOUT YOU

Please provide your name to ensure your response is included.

Title: \_\_\_\_\_ First Name: \_\_\_\_\_ Surname: \_\_\_\_\_

Are you responding on behalf of an organisation? \_\_\_\_\_

Yes  No  If yes, which organisation: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode: \_\_\_\_\_

E-mail: \_\_\_\_\_ Date: \_\_\_\_\_

Age range: 18 and under  19–34  35–50  51–65  over 65

**Data Privacy Notice**

National Grid is committed to respecting your privacy and to complying with all applicable data protection and privacy laws. Your information may be disclosed to or shared with the following:

- other National Grid Group companies;
- third party service providers, contractors, or advisors who provide services to us; and
- the Planning Inspectorate, and any relevant Local Planning Authority (LPA)

## SECTION B – STRATEGIC OPTIONS

To identify the most appropriate way to connect the new energy generation planned in North Wales, National Grid has undertaken a process to identify ‘strategic options’; the potential ways to connect the new electricity generation being proposed.

You can find out more information about these options and the detailed assessment that was undertaken by reading our **Strategic Options Report**, or the summary in the **Wylfa-Pentir Feedback Form Explanation Booklet**. More information and a copy of the report and explanation booklet can be found on our website, at one of our exhibitions or by contacting us directly (please see back page for details).

The strategic options report has led National Grid to take a preliminary view that the preferred option is:

- An additional overhead connection between Wylfa, Anglesey and Pentir, Gwynedd
- A new substation in West Gwynedd
- An additional underground connection at the Glaslyn Estuary

**Q1. Do you agree with the preliminary findings of National Grid’s Strategic Options Report?**

Yes           No           No opinion

**Q2. Please provide reasons for your answer, and any other comments on our Strategic Options Report.**

## SECTION C – ROUTE CORRIDORS: WYLFA TO PENTIR

National Grid has published an **Initial Route Corridor Report** that identifies four potential route corridors and five Menai Strait crossing options for a new overhead line connection between Wylfa and Pentir.

If this strategic option is taken forward, careful consideration will be given to reducing any effects from the connection, with measures including:

- Careful routeing to avoid populated areas and areas communities most value
- Use of different pylon types, which could include 'low height' and/or the new 'T-pylon'
- Planting/screening measures
- Consideration of undergrounding in particularly sensitive areas

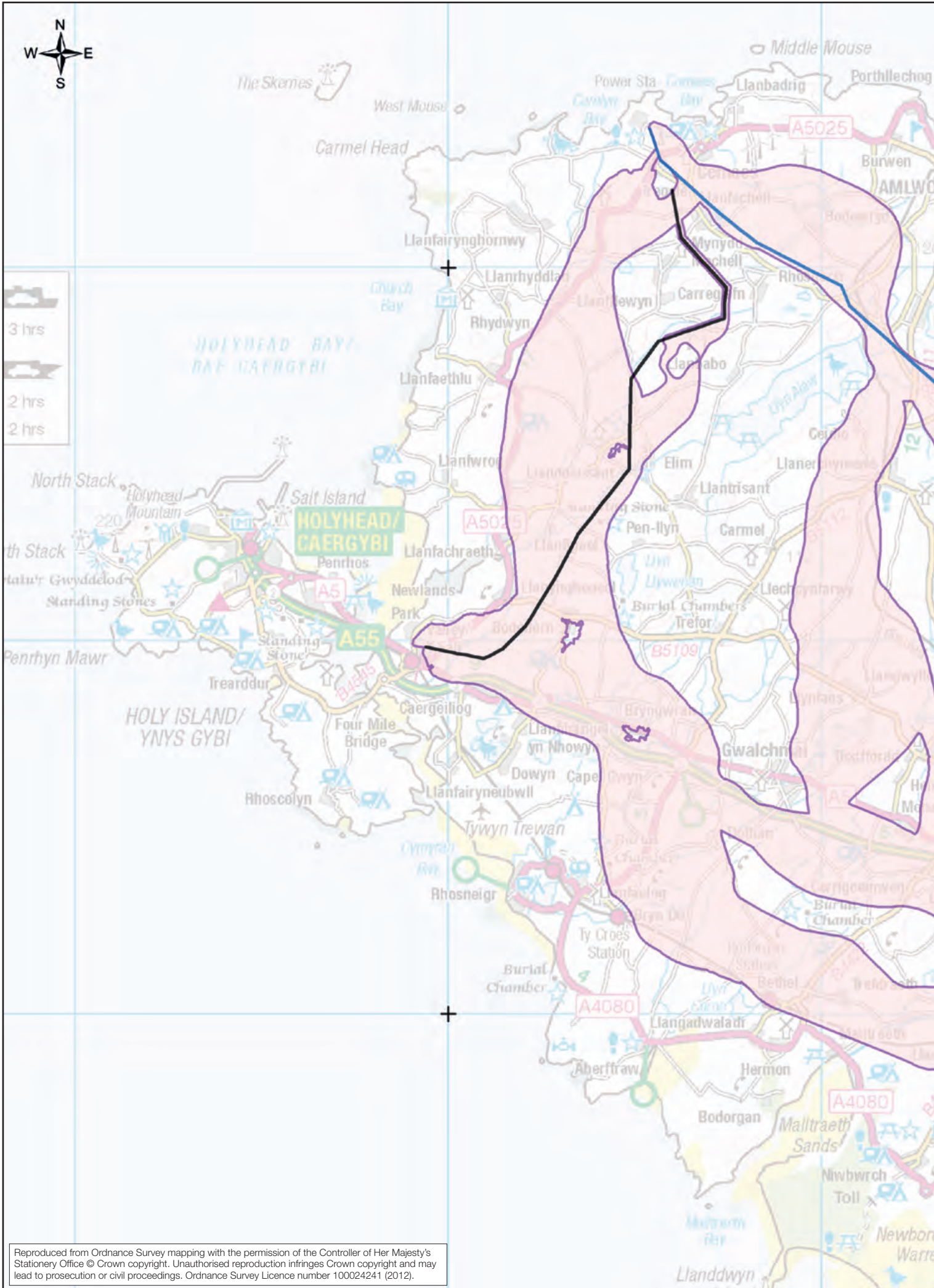
A map and summary of each route and crossing option can be found in our **Wylfa-Pentir Feedback Form Explanation Booklet**, which draws on content from our **Initial Route Corridor Report**. Both documents can be obtained from our website, at one of our exhibitions or by contacting us directly (please see back page for details).

**Q3. Of the route corridors identified across Anglesey, which one do you feel National Grid should take forward? (Please tick one).**

Blue       Purple       Yellow       Orange

**Q4. Please provide your reasons for selecting this route corridor.**



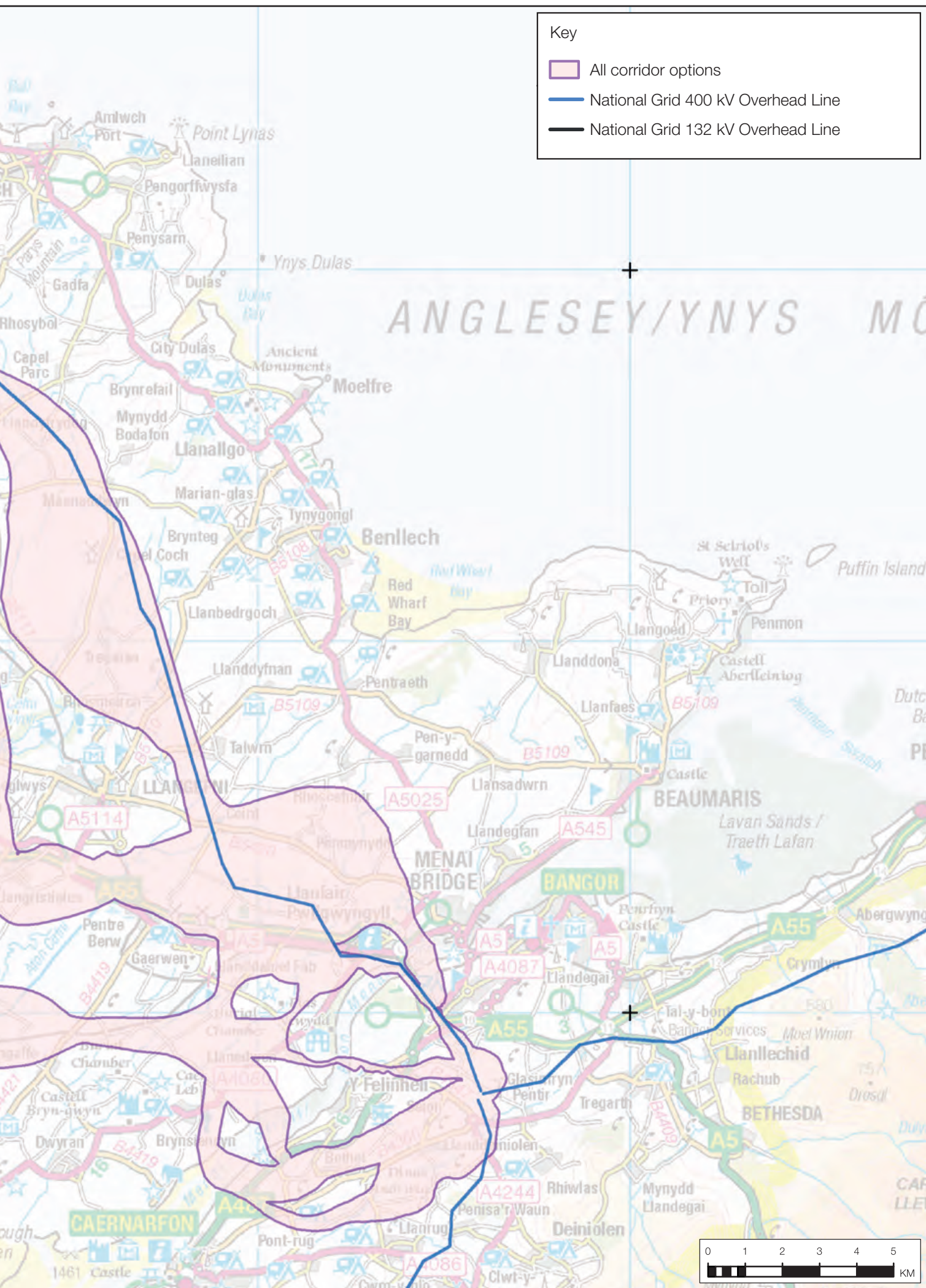


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Key

- All corridor options
- National Grid 400 kV Overhead Line
- National Grid 132 kV Overhead Line



## SECTION D – THE MENAI STRAIT CROSSING OPTIONS

**Q5. Of the options identified to cross the Menai Strait to Pentir, which one do you feel National Grid should take forward? (Please tick one).**

A

B

C

D

E

**Q6. Please provide your reasons for selecting this crossing option across the Menai Strait to Pentir.**

## SECTION E – SENSITIVE LOCATIONS

**Q7. To help us reduce the effects of our proposals, we would value your opinion in identifying locations that you feel are most sensitive within any of our preferred route corridors and crossing points.**

Please describe them below and explain why you feel they are particularly sensitive. Mark the locations clearly on the map on the centre pages of this form as e.g. X1, X2, X3 etc. The centre of your X will mark the centre of your location.

**Q7a.**

Location of X1:

Comment on X1:

**Q7b.**

Location of X2:

Comment on X2:

**Q7c.**

Location of X3:

Comment on X3:

**Q7d.**

Should you wish to comment on any further locations you feel are particularly sensitive, please mark these on the map in the same way (e.g. X4) and comment on these locations below:

## SECTION F – YOUR VIEWS ON OUR CONSULTATION IN NORTH WALES

National Grid is committed to open consultation and engagement with all those who would like to comment on our proposed work. We would welcome feedback on your experience of this consultation.

**Q8. Has the information presented been useful in helping you to give feedback on our proposed work?**

Yes                       No                       No opinion

**Q9. Do you feel National Grid has given you sufficient opportunity to comment on our proposed work?**

Yes                       No                       No opinion

**Q10. Please provide the reasons for your responses to Q8 and Q9, and any further comments on our consultation for our proposed work between Wylfa and Pentir.**

## FOR MORE INFORMATION

You can find out more information and obtain copies of all of the documents and maps mentioned in this form from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) or by contacting us at:

Freephone: **0800 990 3567**

Email: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

Freepost: **FREEPOST NATIONAL GRID NW CONNECTION** (No stamp required)

Copies of key documents are also available for viewing at a number of public locations. Please see our website or contact us for more information.

**Thank you for completing this feedback form.**

All of the comments we receive will be analysed and will help inform the decisions we make.

We cannot respond individually to comments we receive, but will address the themes and issues raised in a Feedback Report that will be published prior to the next stage of consultation.

## Ffurflen Adborth

## Cysylltiad Gogledd Cymru

Hydref 2012



## Gorllewin Gwynedd

Mae'r ffurflen hon yn rhoi cyfle i chi roi adborth ar waith arfaethedig National Grid i gysylltu gorsaf bŵer niwclear newydd yn Wylfa, Ynys Môn a fferm wynt ar y môr ym Môr Iwerddon. Am fanylion ynghylch sut i gael mwy o wybodaeth am y prosiect, ewch i'r dudalen ôl.

**Llenwi'r ffurflen hon a chyflwyno eich sylwadau**

Ar gyfer yr ymgynghoriad hwn, hoffai National Grid gael eich adborth ar:

- Y dewis strategol a ffefrir gan National Grid
- Dewisiadau ar gyfer lleoli is-orsaf yng Ngorllewin Gwynedd

Er mwyn llenwi'r ffurflen hon, byddai'n ddefnyddio i chi gael:

- **Llyfryn Esbonio Ffurflen Adborth Is-orsaf Gorllewin Gwynedd** (gellir gwneud cais am gopiâu drwy ffonio 0800 990 3567, drwy ymweld ag un o'n harddangosfeydd, neu drwy fynd i wefan y prosiect – mae'r manylion ar y dudalen ôl).

Fel rhan o'n gwaith yng Ngogledd Cymru, mae National Grid hefyd yn cynnal ymgynghoriadau cyhoeddus ar gyfer ei waith arfaethedig rhwng **Wylfa a Phentir** ac yn **Aber Glaslyn**. Gellir cael mwy o wybodaeth am yr ymgynghoriadau hyn ar ein gwefan, drwy ymweld ag un o'n harddangosfeydd, neu drwy gysylltu â ni yn uniongyrchol.

**Sut i gymryd rhan yn yr ymgynghoriad**

- **Drwy ddefnyddio'r ffurflen adborth hon:** Gallwch lenwi'r ffurflen hon a'i phostio i'r cyfeiriad isod
- **Ar-lein:** Gallwch lenwi'r ffurflen hon a gweld yr holl fapiau perthnasol (gyda'r gallu i weld yr ardaloedd yn fwy manwl) yn: [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Neu, gallwch gyflwyno eich sylwadau drwy ysgrifennu atom yn: **FREEPOST NATIONAL GRID, NW CONNECTION** neu anfon e-bost at: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com). Cofiwch roi eich enw er mwyn sicrhau bod eich ymateb yn cael ei gynnwys, a nodwch eich sefydliad os yw hynny'n berthnasol.

**Eich adborth**

Gallwch ddewis llenwi pob adran o'r ffurflen adborth hon neu dim ond y rhannau rydych chi'n teimlo sydd fwyaf perthnasol i chi. Pan fo modd, ymhelaethwch ar eich adborth – y mwyaf o wybodaeth y gallwch ei rhoi i ni, y mwyaf o wybodaeth fydd gennym i wneud ein penderfyniadau.

Ysgrifennwch yn glir mewn inc glas neu ddu yn unig. Bydd yr ymgynghoriad hwn ar agor tan **21 Rhagfyr 2012**. Dylech gyflwyno eich adborth yn ystod y cyfnod hwn.

Diolch i chi am roi o'ch amser i lenwi'r ffurflen hon.

## ADRAN A – AMDANOCH CHI

Rhowch eich enw er mwyn gwneud yn siŵr bod eich ymateb yn cael ei gynnwys.

Teitl: \_\_\_\_\_ Enw Cyntaf: \_\_\_\_\_ Cyfenw: \_\_\_\_\_

Ydych chi'n ymateb ar ran sefydliad? \_\_\_\_\_

Ydw  Nac ydw  Os ydych chi, pa sefydliad: \_\_\_\_\_

Cyfeiriad: \_\_\_\_\_

\_\_\_\_\_ Cod Post: \_\_\_\_\_

E-bost: \_\_\_\_\_ Dyddiad: \_\_\_\_\_

Ystod Oedran: 18 ac iau  19–34  35–50  51–65  dros 65

**Hysbysiad Preifatrwydd Data**

Mae National Grid wedi ymrwymo i barchu eich preifatrwydd ac i gydymffurfio â'r holl ddeddfau diogelu data a phreifatrwydd sy'n berthnasol. Gallai eich gwybodaeth gael ei datgelu neu ei rhannu â'r canlynol:

- cwmnïau eraill sy'n rhan o Grŵp National Grid;
- darparwyr gwasanaeth trydydd parti, contractwyr, neu ymgynghorwyr sy'n darparu gwasanaethau i ni;
- yr Arolygiaeth Gynllunio ac unrhyw Awdurdod Cynllunio Lleol sy'n berthnasol

## ADRAN B – DEWISIADAU STRATEGOL

Er mwyn canfod y ffordd fwyaf priodol i gysylltu'r prosiectau cynhyrchu ynni newydd sydd wedi'u cynllunio ar gyfer Gogledd Cymru, mae National Grid yn ymgymryd â phroses i ddynodi 'dewisiadau strategol'; ffyrdd posibl o gysylltu'r prosiectau cynhyrchu trydan newydd sy'n cael eu cynnig.

Gallwch ddod o hyd i fwy o wybodaeth am y dewisiadau hyn ac am yr asesiad manwl a gynhaliwyd drwy ddarllen y **'Strategic Options Report'**, neu'r crynodeb yn **Llyfryn Esbonio Ffurflen Adborth Is-orsaf Gorllewin Gwynedd**. Gellir cael mwy o wybodaeth a chopi o'r adroddiad a'r llyfryn esbonio ar ein gwefan neu drwy gysylltu â ni yn uniongyrchol (mae'r manylion ar y dudalen ôl).

Yn dilyn y 'Strategic Options Report', barn rhagarweiniol National Grid yw mai dyma'r dewis a ffefrir:

- Cysylltiad llinell uwchben ychwanegol rhwng Wylfa, Ynys Môn a Phentir, Gwynedd
- Is-orsaf newydd yng Ngorllewin Gwynedd
- Cysylltiad tanddaearol ychwanegol yn Aber Glaslyn

### C1. Ydych chi'n cytuno â chanfyddiadau rhagarweiniol 'Strategic Options Report' National Grid?

Ydw       Nac ydw       Dim barn

### C2. Rhowch resymau dros eich ateb, ac unrhyw sylwadau eraill sydd gennych am ein 'Strategic Options Report'.



## ADRAN C – IS-ORSAF NEWYDD

Mae National Grid wedi cynnal **'Substation Siting Study'** er mwyn dod o hyd i leoliadau posibl ar gyfer is-orsaf newydd yng Ngorllewin Gwynedd.

Os eir ymlaen â'r dewis strategol hwn, rhoddir ystyriaeth ofalus i leihau unrhyw effeithiau a fydd yn deillio o'r is-orsaf, gyda mesurau'n cynnwys:

- Sgrinio a phlannu wedi'u tirweddu
- Creu cynefinoedd
- Mesurau i leihau sŵn

Mae tri safle posibl ger Bryncir wedi cael eu dynodi; Gogledd, Canol a De.

Gellir gweld map a chrynodeb o bob un o'r tri dewis ar gyfer safleoedd yr is-orsaf yn **Llyfryn Esbonio Ffurflen Adborth Is-orsaf Gorllewin Gwynedd**, sy'n defnyddio cynnwys o'r **'Substation Siting Study'**. Gellir cael y ddwy ddogfen ar ein gwefan, yn un o'n harddangosfeydd, neu drwy gysylltu â ni yn uniongyrchol (mae'r manylion ar y dudalen ôl).

Mae'r cwestiynau canlynol yn gofyn am eich adborth ar y lleoliadau a ddynodwyd ar gyfer yr is-orsaf.

### **C3. O blith y safleoedd a nodwyd ar gyfer is-orsaf, pa un ddylai National Grid fwrw ymlaen ag ef yn eich barn chi?**

**(Ticiwch un)**

Gogledd  Canol  De

### **C4. Rhowch eich rhesymau dros ddewis y safle hwn ar gyfer yr is-orsaf, ac unrhyw sylwadau eraill.**

## ADRAN D – EICH BARN AM EIN HYMGYNGHORIAD YNG NGOGLEDD CYMRU

Mae National Grid wedi ymrwymo i ymgysylltu ac ymgynghori'n agored â phawb sy'n dymuno rhoi eu sylwadau am ein gwaith arfaethedig. Byddem yn croesawu adborth ar eich profiad o'r ymgynghoriad hwn.

### C5. Ydy'r wybodaeth a gyflwynwyd wedi bod yn ddefnyddiol i'ch helpu i roi adborth ar ein gwaith arfaethedig?

Ydy  Nac ydy  Dim barn

### C6. Ydych chi'n teimlo bod National Grid wedi rhoi digon o gyfle i chi roi sylwadau am ein gwaith arfaethedig?

Ydw  Nac ydw  Dim barn

### C7. Rhowch eich rhesymau dros eich ymatebion i gwestiynau 5 a 6 ac unrhyw sylwadau pellach am ein hymgyngoriad ar gyfer yr is-orsaf arfaethedig yng Ngorllewin Gwynedd.

## MWY O WYBODAETH

Gallwch gael mwy o wybodaeth a chopïau o'r holl ddogfennau a'r mapiau y soniwyd amdanynt yn y ffurflen hon ar ein gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) neu drwy gysylltu â ni yn:

Rhadffôn: **0800 990 3567**

E-bost: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)

Rhadbost: **FREEPOST NATIONAL GRID NW CONNECTION** (Nid oes angen stamp)

Gellir gweld copïau o ddogfennau allweddol mewn nifer o leoliadau cyhoeddus hefyd. Ewch i'n gwefan neu cysylltwch â ni i gael mwy o wybodaeth

### Diolch i chi am lenwi'r ffurflen adborth hon.

Bydd yr holl sylwadau y byddwn yn eu derbyn yn cael eu dadansoddi ac yn ein helpu i wneud ein penderfyniadau.

Ni allwn ymateb yn bersonol i'r holl sylwadau a dderbyniwn, ond byddwn yn rhoi sylw i'r themâu a'r materion a godir mewn Adroddiad Adborth a fydd yn cael ei gyhoeddi cyn cam nesaf yr ymgynghoriad.

## Feedback Form

## North Wales Connection

Autumn 2012



## West Gwynedd

This form is for you to provide feedback on National Grid's proposed work to connect a new nuclear power station at Wylfa, Anglesey and an offshore wind farm in the Irish Sea. For details of how you can find out more information about the project, please see the back page.

**Completing this form and submitting your comments**

For this consultation, National Grid would like your feedback on:

- National Grid's preferred strategic option
- Substation siting options in West Gwynedd

To complete this form, it would be helpful for you to have the:

- **West Gwynedd Substation Feedback Form Explanation Booklet** (copies can be requested by calling 0800 990 3567, visiting one of our exhibitions, or by visiting the project website – details on back page).

As part of our work in North Wales, National Grid is also holding public consultations for its proposed work between **Wylfa and Pentir** and at the **Glaslyn Estuary**. More information on these consultations can be found on our website, by visiting one of our exhibitions, or by contacting us directly.

**How you can take part in the consultation**

- **By using this feedback form:** You can complete this form and post it to the address below
- **Online:** You can complete this form and view all relevant maps (with the ability to zoom in on areas) at: [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Alternatively, you can submit your views by writing to us at: **FREEPOST NATIONAL GRID, NW CONNECTION** or emailing us at: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com). Please provide your name to ensure your response is included and state your organisation if applicable.

**Your feedback**

You can choose to complete all sections of this feedback form or just the parts you feel are most relevant to you. Where possible, please expand on your feedback – the more information you can give us, the more we can use your feedback to inform the decisions we make.

Please write clearly in black or blue pen only. This consultation is open until **21 December 2012**. Please submit feedback during this time.

Thank you for taking the time to complete this form.

## SECTION A – ABOUT YOU

Please provide your name to ensure your response is included.

Title: \_\_\_\_\_ First Name: \_\_\_\_\_ Surname: \_\_\_\_\_

Are you responding on behalf of an organisation? \_\_\_\_\_

Yes  No  If yes, which organisation: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode: \_\_\_\_\_

E-mail: \_\_\_\_\_ Date: \_\_\_\_\_

Age range: 18 and under  19–34  35–50  51–65  over 65

**Data Privacy Notice**

National Grid is committed to respecting your privacy and to complying with all applicable data protection and privacy laws. Your information may be disclosed to or shared with the following:

- other National Grid Group companies;
- third party service providers, contractors, or advisors who provide services to us; and
- the Planning Inspectorate, and any relevant Local Planning Authority (LPA)

## SECTION B – STRATEGIC OPTIONS

To identify the most appropriate way to connect the new energy generation planned in North Wales, National Grid has undertaken a process to identify ‘strategic options’; the potential ways to connect the new electricity generation being proposed.

You can find out more information about these options and the detailed assessment that was undertaken by reading our **Strategic Options Report**, or the summary in the **West Gwynedd Substation Feedback Form Explanation Booklet**. More information and a copy of the report and explanation booklet can be found on our website, at one of our exhibitions or by contacting us directly (please see back page for details).

The Strategic Options Report has led National Grid to take a preliminary view that the preferred option is:

- An additional overhead line connection between Wylfa, Anglesey and Pentir, Gwynedd
- A New substation in West Gwynedd
- An additional underground connection at the Glaslyn Estuary

**Q1. Do you agree with the preliminary findings of National Grid’s Strategic Options Report?**

Yes           No           No opinion

**Q2. Please provide reasons for your answer, and any other comments on our Strategic Options Report.**

## SECTION C – A NEW SUBSTATION

National Grid has undertaken a **Substation Siting Study** to identify potential locations for a new substation in West Gwynedd.

If this strategic option is taken forward, careful consideration will be given to reducing any effects from the substation, with measures including:

- Landscape screening and planting
- Habitat creation
- Measures to reduce noise

Three potential sites near Bryncir have been identified; Northern, Central and Southern.

A map and summary of each of the three substation site options can be found in the **West Gwynedd Substation Feedback Form Explanation Booklet**, which draws on content from the **Substation Siting Study**.

Both documents can be obtained from our website, at one of our exhibitions, or by contacting us directly (please see back page for details).

The following questions seek your feedback on the substation locations that have been identified.

**Q3. Of the substation sites identified, which one do you feel National Grid should take forward?**

**(Please tick one)**

Northern

Central

Southern

**Q4. Please provide your reasons for selecting this substation site, and any other comments.**

## SECTION D – YOUR VIEWS ON OUR CONSULTATION IN NORTH WALES

National Grid is committed to open consultation and engagement with all those who would like to comment on our proposed work. We would welcome feedback on your experience of this consultation.

**Q5. Has the information presented been useful in helping you to give feedback on our proposed work?**

Yes  No  No opinion

**Q6. Do you feel National Grid has given you sufficient opportunity to comment on our proposed work?**

Yes  No  No opinion

**Q7. Please provide the reasons for your responses to Q5 and Q6, and any further comments on our consultation for the proposed substation in West Gwynedd.**

## FOR MORE INFORMATION

You can find out more information and obtain copies of all of the documents and maps mentioned in this form from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) or by contacting us at:

Freephone: **0800 990 3567**

Email: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

Freepost: **FREEPOST NATIONAL GRID NW CONNECTION** (No stamp required)

Copies of key documents are also available for viewing at a number of public locations. Please see our website or contact us for more information.

**Thank you for completing this feedback form.**

All of the comments we receive will be analysed and will help inform the decisions we make.

We cannot respond individually to comments we receive, but will address the themes and issues raised in a Feedback Report that will be published prior to the next stage of consultation.

## Ffurflen Adborth

## Cysylltiad Gogledd Cymru

Hydref 2012

G

## Aber Glaslyn

Mae'r ffurflen hon yn rhoi cyfle i chi roi adborth ar waith arfaethedig National Grid i gysylltu gorsaf bŵer niwclear newydd yn Wylfa, Ynys Môn a fferm wynt ar y môr ym Môr Iwerddon. Am fanylion ynghylch sut i gael mwy o wybodaeth am y prosiect, ewch i'r dudalen ôl.

**Llenwi'r ffurflen hon a chyflwyno eich sylwadau**

Ar gyfer yr ymgynghoriad hwn, hoffai National Grid gael eich adborth ar:

- Y dewis strategol rhagarweiniol a ffeirir gan National Grid
- Coridor y llwybr a'r aliniad posibl ar gyfer y llwybr yr ydym wedi eu nodi

Er mwyn llenwi'r ffurflen hon, byddai'n ddefnyddiol i chi gael:

- **Llyfryn Esbonio Ffurflen Adborth Aber Afon Glaslyn** (gellir gwneud cais am gopïau drwy ffonio 0800 990 3567, drwy ymweld ag un o'n harddangosfeydd, neu drwy fynd i wefan y prosiect – mae'r manylion ar y dudalen ôl).

Fel rhan o'i waith yng Ngogledd Cymru, mae National Grid hefyd yn cynnal ymgynghoriadau cyhoeddus ar gyfer ei waith arfaethedig rhwng **Wylfa a Phentir** ac yng **Ngorllewin Gwynedd**. Gellir cael mwy o wybodaeth am yr ymgynghoriadau hyn ar ein gwefan, drwy ymweld ag un o'n harddangosfeydd, neu drwy gysylltu â ni yn uniongyrchol.

**Sut i gymryd rhan yn yr ymgynghoriad**

- **Drwy ddefnyddio'r ffurflen adborth hon:** Gallwch lenwi'r ffurflen hon a'i phostio i'r cyfeiriad isod
- **Ar-lein:** Gallwch lenwi'r ffurflen hon a gweld yr holl fapiau perthnasol (gyda'r gallu i weld yr ardaloedd yn fwy manwl) yn: [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Neu, gallwch gyflwyno eich sylwadau drwy ysgrifennu atom yn: **FREEPOST NATIONAL GRID, NW CONNECTION** neu anfon e-bost at: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com). Cofiwch roi eich enw er mwyn sicrhau bod eich ymateb yn cael ei gynnwys, a nodwch eich sefydliad os yw hynny'n berthnasol.

**Eich adborth**

Gallwch ddewis llenwi pob adran o'r ffurflen adborth hon neu dim ond y rhannau rydych chi'n teimlo sydd fwyaf perthnasol i chi. Pan fo modd, ymhelaethwch ar eich adborth – y mwyaf o wybodaeth y gallwch ei rhoi i ni, y mwyaf o wybodaeth fydd gennym i wneud ein penderfyniadau.

Ysgrifennwch yn glir mewn inc glas neu ddu yn unig. Bydd yr ymgynghoriad hwn ar agor tan **21 Rhagfyr 2012**. Dylech gyflwyno eich adborth yn ystod y cyfnod hwn.

Diolch i chi am roi o'ch amser i lenwi'r ffurflen hon.

## ADRAN A – AMDANOCH CHI

Rhowch eich enw er mwyn gwneud yn siŵr bod eich ymateb yn cael ei gynnwys.

Teitl: \_\_\_\_\_ Enw Cyntaf: \_\_\_\_\_ Cyfenw: \_\_\_\_\_

Ydych chi'n ymateb ar ran sefydliad? \_\_\_\_\_

Ydw  Nac ydw  Os ydych chi, pa sefydliad: \_\_\_\_\_

Cyfeiriad: \_\_\_\_\_

\_\_\_\_\_ Cod Post: \_\_\_\_\_

E-bost: \_\_\_\_\_ Dyddiad: \_\_\_\_\_

Ystod Oedran: 18 ac iau  19–34  35–50  51–65  dros 65

**Hysbysiad Preifatrwydd Data**

Mae National Grid wedi ymrwymo i barchu eich preifatrwydd ac i gydymffurfio â'r holl ddeddfau diogelu data a phreifatrwydd sy'n berthnasol. Gallai eich gwybodaeth gael ei datgelu neu ei rhannu â'r canlynol:

- cwmnïau eraill sy'n rhan o Grŵp National Grid;
- darparwyr gwasanaeth trydydd parti, contractwyr, neu ymgynghorwyr sy'n darparu gwasanaethau i ni;
- yr Arolygiaeth Gynllunio ac unrhyw Awdurdod Cynllunio Lleol sy'n berthnasol



## ADRAN B – DEWISIADAU STRATEGOL

Er mwyn canfod y ffordd fwyaf priodol i gysylltu'r prosiectau cynhyrchu ynni newydd sydd wedi'u cynllunio ar gyfer Gogledd Cymru, mae National Grid yn ymgymryd â phroses i ddyfynodi 'dewisiadau strategol'; ffyrdd posibl o gysylltu'r prosiectau cynhyrchu trydan newydd sy'n cael eu cynnig.

Gallwch ddod o hyd i fwy o wybodaeth am y dewisiadau hyn ac am yr asesiad manwl a gynhaliwyd drwy ddarllen y **'Strategic Options Report'**, neu'r crynodeb yn **Llyfryn Esbonio Ffurflen Adborth Aber Afon Glaslyn**. Gellir cael mwy o wybodaeth a chopi o'r adroddiad a'r llyfryn esbonio ar ein gwefan neu drwy gysylltu â ni yn uniongyrchol (mae'r manylion ar y dudalen ôl).

Yn dilyn y 'Strategic Options Report', barn rhagarweiniol National Grid yw mai dyma'r dewis a ffefrir:

- Cysylltiad llinell uwchben ychwanegol rhwng Wylfa, Ynys Môn a Phentir, Gwynedd
- Is-orsaf newydd yng Ngorllewin Gwynedd
- Cysylltiad tanddaearol ychwanegol yn Aber Glaslyn

### C1. Ydych chi'n cytuno â chanfyddiadau rhagarweiniol 'Strategic Options Report' National Grid?

Ydw       Nac ydw       Dim barn

### C2. Rhowch resymau dros eich ateb, ac unrhyw sylwadau eraill sydd gennych am ein 'Strategic Options Report'.

## ADRAN C – CYSYLLTIAD TANDDAEAROL YCHWANEGOL YN ABER GLASLYN

Mae National Grid wedi cyflawni **'Route Corridor Report'** sy'n dynodi coridor llwybr arfaethedig ar gyfer cysylltiad tanddaearol ychwanegol yn Aber Glaslyn.

Os eir ymlaen â'r dewis strategol hwn, rhoddir ystyriaeth ofalus i leihau unrhyw effeithiau a fydd yn deillio o'r cysylltiad, gyda mesurau'n cynnwys:

- Creu cynefinoedd
- Rheoli traffig a gwastraff yn ystod y cyfnod adeiladu
- Sgrinio a phlannu wedi'u tirweddu

Mae coridor llwybr arfaethedig posibl y cysylltiad yn cael ei ddangos a'i egluro yn **Llyfryn Esbonio Ffurflen Adborth Aber Afon Glaslyn**, sy'n defnyddio cynnwys o'r **'Route Corridor Report'**. Gellir cael y ddwy ddogfen ar ein gwefan, yn un o'n harddangosfeydd, neu drwy gysylltu â ni yn uniongyrchol (mae'r manylion ar y dudalen ôl).

Mae National Grid wedi dynodi coridor llwybr ac aliniad llwybr posibl ar gyfer adeiladu'r cysylltiad tanddaearol.

### **C3. Oes gennych chi unrhyw sylwadau am y coridor llwybr arfaethedig a'r aliniad posibl ar gyfer y llwybr yr ydym wedi'u dynodi?**

## ADRAN D – EICH BARN AM EIN HYMGYNGHORIAD YNG NGOGLEDD CYMRU

Mae National Grid wedi ymrwymo i ymgysylltu ac ymgynghori'n agored â phawb sy'n dymuno rhoi eu sylwadau am ein gwaith arfaethedig. Byddem yn croesawu adborth ar eich profiad o'r ymgynghoriad hwn.

### C4. Ydy'r wybodaeth a gyflwynwyd wedi bod yn ddefnyddiol i'ch helpu i roi adborth ar ein gwaith arfaethedig?

Ydy  Nac ydy  Dim barn

### C5. Ydych chi'n teimlo bod National Grid wedi rhoi digon o gyfle i chi roi sylwadau am ein gwaith arfaethedig?

Ydw  Nac ydw  Dim barn

### C6. Rhowch eich rhesymau dros eich ymatebion i gwestiynau 4 a 5 ac unrhyw sylwadau pellach am ein hymgyngoriad ar gyfer ein gwaith arfaethedig yn Aber Glaslyn.

## MWY O WYBODAETH

Gallwch gael mwy o wybodaeth a chopïau o'r holl ddogfennau a'r mapiau y soniwyd amdanynt yn y ffurflen hon ar ein gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) neu drwy gysylltu â ni yn:

Rhadffôn: **0800 990 3567**

E-bost: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)

Rhadbost: **FREEPOST NATIONAL GRID NW CONNECTION** (Nid oes angen stamp)

Gellir gweld copïau o ddogfennau allweddol mewn nifer o leoliadau cyhoeddus hefyd. Ewch i'n gwefan neu cysylltwch â ni i gael mwy o wybodaeth

### Diolch i chi am lenwi'r ffurflen adborth hon.

Bydd yr holl sylwadau y byddwn yn eu derbyn yn cael eu dadansoddi ac yn ein helpu i wneud ein penderfyniadau.

Ni allwn ymateb yn bersonol i'r holl sylwadau a dderbyniwn, ond byddwn yn rhoi sylw i'r themâu a'r materion a godir mewn Adroddiad Adborth a fydd yn cael ei gyhoeddi cyn cam nesaf yr ymgynghoriad.

## Feedback Form

## North Wales Connection

Autumn 2012



## Glaslyn Estuary

This form is for you to provide feedback on National Grid's proposed work to connect a new nuclear power station at Wylfa, Anglesey and an offshore wind farm in the Irish Sea. For details of how you can find out more information about the project, please see the back page.

**Completing this form and submitting your comments**

For this consultation, National Grid would like your feedback on:

- National Grid's preferred strategic option
- The route corridor and possible route alignment we have identified

To complete this form, it would be helpful for you to have the:

- **Glaslyn Estuary Feedback Form Explanation Booklet** (copies can be requested by calling 0800 990 3567, visiting one of our exhibitions, or by visiting the project website – details on back page).

As part of its work in North Wales, National Grid is also holding public consultations for its proposed work between **Wylfa and Pentir** and in **West Gwynedd**. More information on these consultations can be found on our website, by visiting one of our exhibitions, or by contacting us directly.

**How you can take part in the consultation**

- **By using this feedback form:** You can complete this form and post it to the address below
- **Online:** You can complete this form and view all relevant maps (with the ability to zoom in on areas) at: [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Alternatively, you can submit your views by writing to us at:

**FREEPOST NATIONAL GRID, NW CONNECTION** or emailing us at: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com). Please provide your name to ensure your response is included and state your organisation if applicable.

**Your feedback**

You can choose to complete all sections of this feedback form or just the parts you feel are most relevant to you. Where possible, please expand on your feedback – the more information you can give us, the more we can use your feedback to inform the decisions we make.

Please write clearly in black or blue pen only. This consultation is open until **21 December 2012**. Please submit feedback during this time.

Thank you for taking the time to complete this form.

## SECTION A – ABOUT YOU

Please provide your name to ensure your response is included.

Title: \_\_\_\_\_ First Name: \_\_\_\_\_ Surname: \_\_\_\_\_

Are you responding on behalf of an organisation? \_\_\_\_\_

Yes  No  If yes, which organisation: \_\_\_\_\_

Address: \_\_\_\_\_

Postcode: \_\_\_\_\_

E-mail: \_\_\_\_\_ Date: \_\_\_\_\_

Age range: 18 and under  19–34  35–50  51–65  over 65

**Data Privacy Notice**

National Grid is committed to respecting your privacy and to complying with all applicable data protection and privacy laws. Your information may be disclosed to or shared with the following:

- other National Grid Group companies;
- third party service providers, contractors, or advisors who provide services to us; and
- the Planning Inspectorate, and any relevant Local Planning Authority (LPA)

## SECTION B – STRATEGIC OPTIONS

To identify the most appropriate way to connect the new energy generation planned in North Wales, National Grid has undertaken a process to identify 'strategic options'; the potential ways to connect the new electricity generation being proposed.

You can find out more information about these options and the detailed assessment that was undertaken by reading our **Strategic Options Report**, or the summary in the **Glaslyn Estuary Feedback Form Explanation Booklet**. More information and a copy of the report and explanation booklet can be found on our website, at our exhibitions or by contacting us directly (please see back page for details).

The Strategic Options Report has led National Grid to take a preliminary view that the preferred option is:

- An additional overhead line connection between Wylfa, Anglesey and Pentir, Gwynedd
- A new substation in West Gwynedd
- An additional underground connection at the Glaslyn Estuary

**Q1. Do you agree with the preliminary findings of National Grid's Strategic Options Report?**

Yes           No           No opinion

**Q2. Please provide reasons for your answer, and any other comments on our Strategic Options Report.**

## SECTION C – AN ADDITIONAL UNDERGROUND CONNECTION AT THE GLASLYN ESTUARY

National Grid has undertaken a **Route Corridor Report** that identifies a proposed route corridor for an additional underground connection at the Glaslyn Estuary.

If this strategic option is taken forward, careful consideration will be given to reducing any effects from the connection, with measures including:

- Habitat creation
- Managing traffic and waste during construction
- Landscaped screening and planting

The proposed route corridor the connection could take is shown and explained in the **Glaslyn Estuary Feedback Form Explanation Booklet**, which draws on content from our **Route Corridor Report**. Both documents can be obtained from our website, at one of our exhibitions, or by contacting us directly (please see back page for details).

National Grid has identified a route corridor and potential route alignment in which to build the underground connection.

**Q3. Do you have any comments about the proposed route corridor and possible route alignment we have identified?**

## SECTION D – YOUR VIEWS ON OUR CONSULTATION IN NORTH WALES

National Grid is committed to open consultation and engagement with all those who would like to comment on our proposed work. We would welcome feedback on your experience of this consultation.

**Q4. Has the information presented been useful in helping you to give feedback on our proposed work?**

Yes  No  No opinion

**Q5. Do you feel National Grid has given you sufficient opportunity to comment on our proposed work?**

Yes  No  No opinion

**Q6. Please provide the reasons for your responses to Q4 and Q5 and any further comments on our consultation for our proposed works at the Glaslyn Estuary.**

## FOR MORE INFORMATION

You can find out more information and obtain copies of all of the documents and maps mentioned in this form from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) or by contacting us at:

Freephone: **0800 990 3567**

Email: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

Freepost: **FREEPOST NATIONAL GRID NW CONNECTION** (No stamp required)

Copies of key documents are also available for viewing at a number of public locations. Please see our website or contact us for more information.

**Thank you for completing this feedback form.**

All of the comments we receive will be analysed and will help inform the decisions we make.

We cannot respond individually to comments we receive, but will address the themes and issues raised in a Feedback Report that will be published prior to the next stage of consultation.



# Feedback Form Explanation Booklet

## North Wales Connection

Autumn 2012

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### The Glaslyn Estuary

National Grid has launched its consultation on proposals to connect significant new electricity generation in North Wales.

Your feedback is extremely important to help inform the decisions we make. That is why we want to encourage as many people as possible to take part in our consultation.

Thank you in advance for your time, we look forward to hearing your views.

## HOW TO USE THIS BOOKLET

This booklet is designed to be used alongside the **Glaslyn Estuary Feedback Form** and is intended to help everyone give feedback that is as informed as possible.

Please take some time to read this document, and then have it to hand when you complete your feedback form.

This booklet contains a summary of our **Strategic Options Report**, which has been undertaken to identify our preliminary preferred option for connecting the proposed new energy generation in North Wales to our network. This summary will help you answer **questions 1-2** in the feedback form.

This booklet also contains a summary and a map of the route corridor and crossing options we have brought forward for consultation and these will help you answer **question 3** in the feedback form.

On the back page you can find details of where you can obtain copies of all of the documents referred to in this booklet, and how you can contact us with any questions you may have.



## CONTENTS

<b>Page 2 – 5</b>	Summary of Strategic Options Report
<b>Page 6 – 7</b>	Overview map of the Glaslyn Estuary proposed route corridor and possible route alignment
<b>Page 8</b>	For more information / Contact us

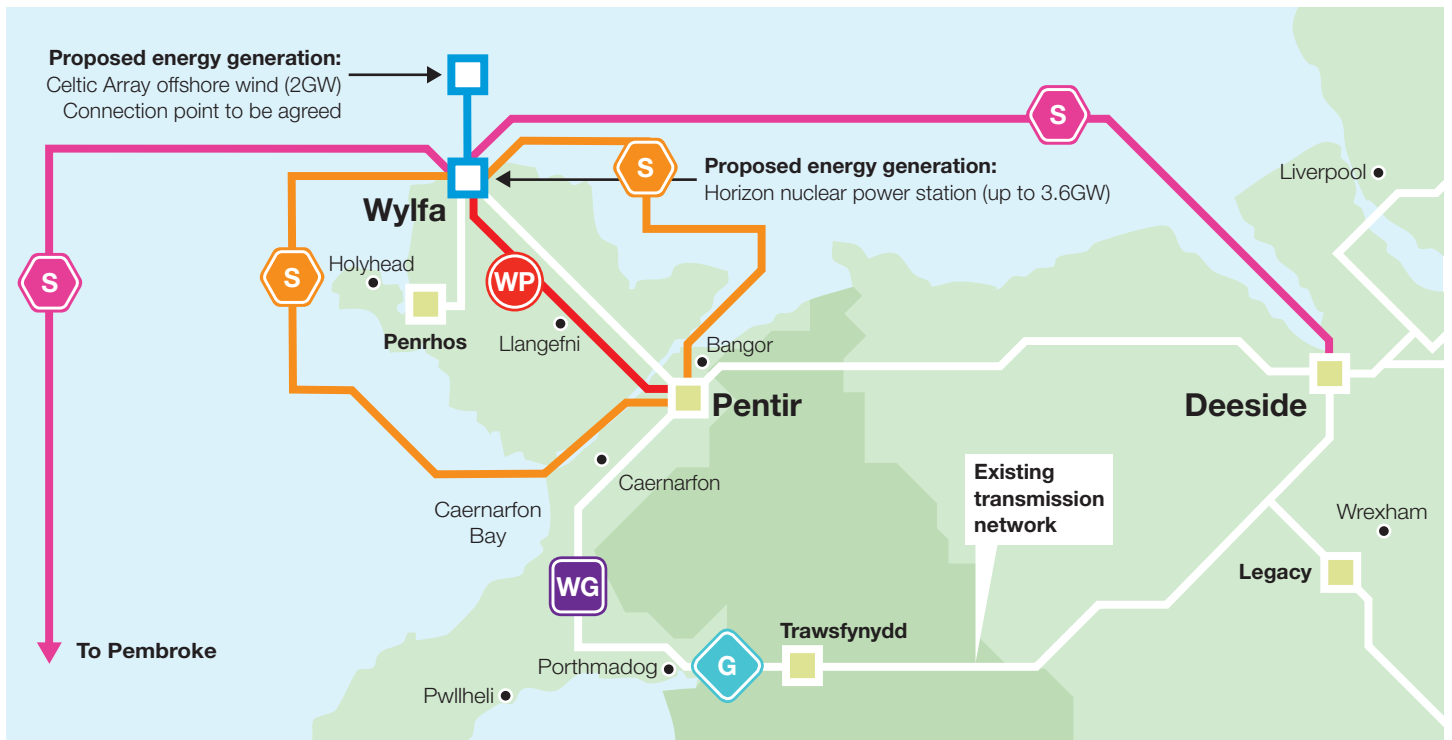
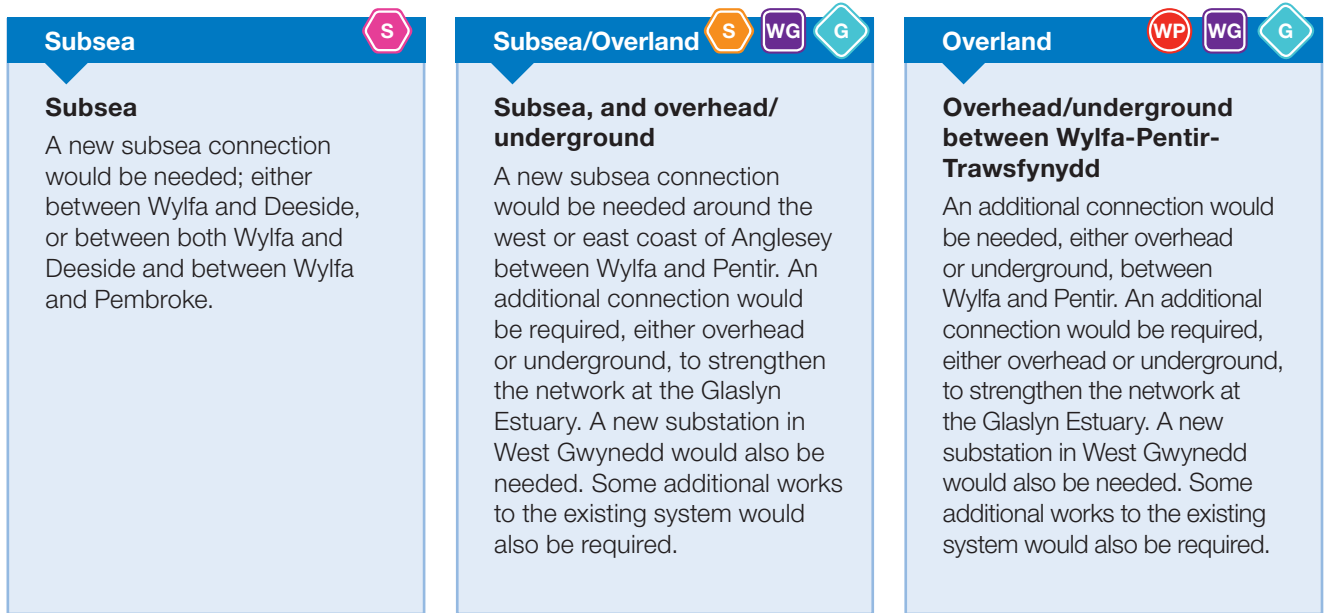
# THE CONNECTION OPTIONS WE CONSIDERED

The information on these pages will help you answer **questions 1-2** in the **Glaslyn Estuary Feedback Form**.

**To identify the best way to connect the proposed new energy generation in North Wales, National Grid undertakes a process to identify ‘strategic options’.**

During this process, we identified a large number of potential ways to connect the new electricity generation proposed in North Wales to the electricity network. These were subsea, overland, or a combination of both and are summarised below.

**The diagram below sets out of all of the different connections options we assessed:**



You can find out more about the approach National Grid takes when connecting new energy generation by reading ‘Our approach to the design and routing of new electricity transmission lines’. You can also find out more information about the different options we considered for connecting the proposed electricity generation in North Wales by reading our ‘Strategic Options Report’.

# REVIEW OF CONNECTION OPTIONS

Each of the strategic options we identified were then reviewed against environmental and community effects, technical feasibility and whole life costs:

## Subsea – HVDC/AC



- For subsea connections to Deeside or Pembroke, National Grid would need to use HVDC (High Voltage Direct Current) cables. For a subsea connection to Pentir, we could use either HVDC or AC (Alternating Current) cables, due to the distance being much shorter.
- There are environmental considerations when laying subsea cables. However, these can often be reduced or avoided by careful routeing.
- HVDC is an evolving technology. There are no HVDC systems of this capacity installed anywhere in the world. For both options this represents a technical and financial risk.
- For HVDC connections, new converter stations would be required at the ends of each connection. A typical converter station is the size of a large DIY warehouse.
- Capital costs are estimated at between £1.6 billion and £2 billion for HVDC, and between £2.2 and £2.5 billion for AC subsea connections. Cost is important as it is ultimately passed on to the public through energy bills.

**Taking into account these considerations, a subsea option is not our preliminary preferred connection option.**

## Overhead/Underground between Wylfa and Pentir



- The effects of a wholly underground route would be largely limited to the construction phase.
- The visual and landscape effect of an overhead line is recognised, but National Grid believes it would be possible to reduce/avoid this with options including careful routeing, planting and screening or consideration of putting sections of the connection underground.
- The total cost of the project, including 40 km of underground cable, would be approximately £1.7 billion. That is £923 million more than the equivalent project based on an overhead line route.

**Taking into account these considerations, National Grid's preliminary preference is for an overhead connection.**

## Substation in West Gwynedd



For all options (aside from subsea HVDC), a new substation in West Gwynedd would be needed to maintain reliable supplies to the area.

## Overhead/Underground at the Glaslyn Estuary



- The effects of a wholly underground route would be largely limited to the construction phase.
- The existing connection at the Glaslyn Estuary is already underground.
- A wholly overhead connection would have a high landscape and visual impact, particularly with regard to Snowdonia National Park.
- A wholly underground connection would be 6 km long and would cost £132 million. That is £121 million more than an overhead connection.

**Taking into account these considerations, National Grid's preliminary preference is for an underground connection at the Glaslyn Estuary.**

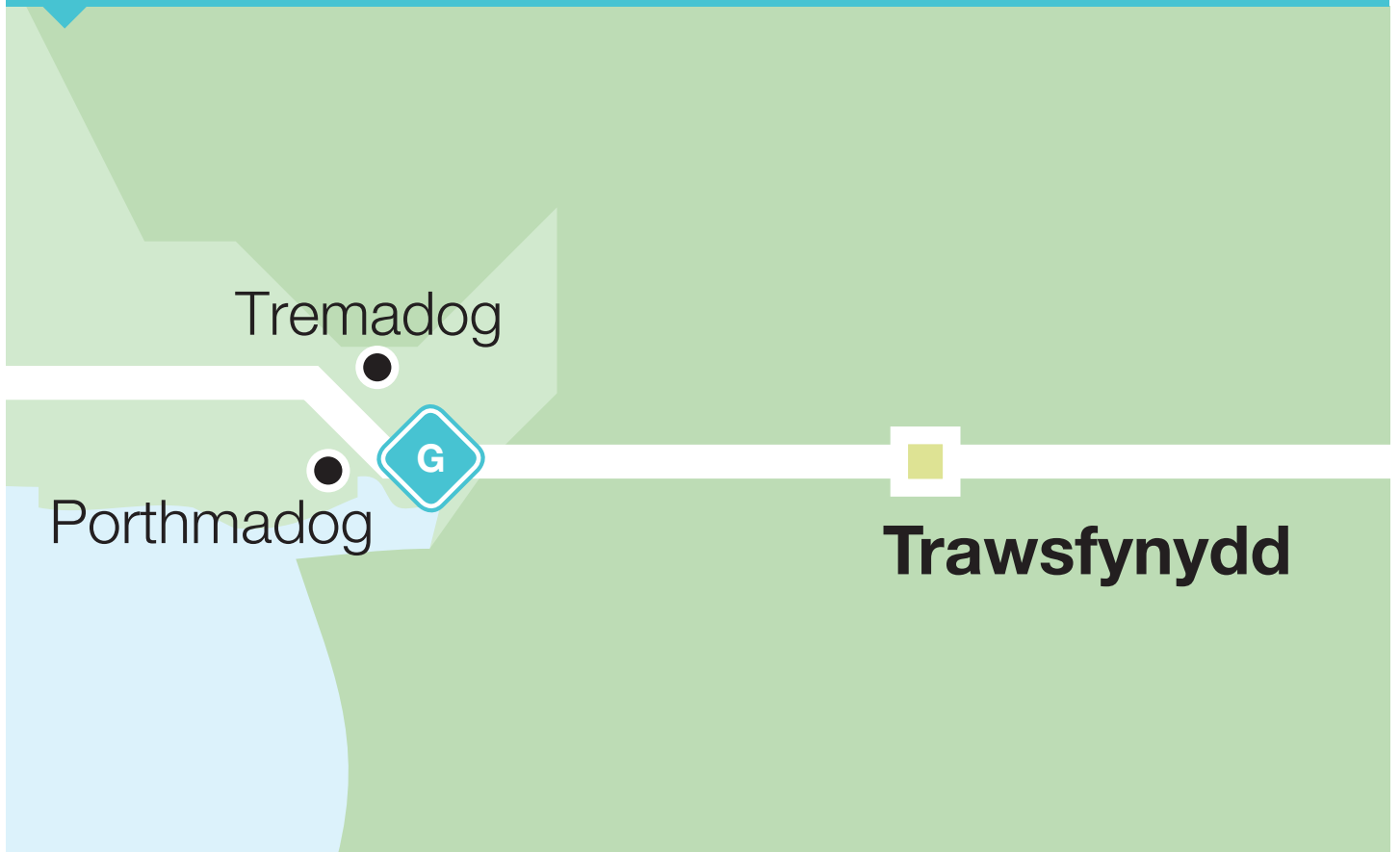
## OUR PRELIMINARY PREFERRED OPTION

The information on these pages will help you answer **questions 1-2** in the **Glaslyn Estuary Feedback Form**.

Following the strategic options process, our preliminary preferred option is for an overland connection, which consists of three key packages of work. These are an additional overhead connection between Wylfa and Pentir, a new substation in West Gwynedd, and an additional underground connection at the Glaslyn Estuary.

### The Glaslyn Estuary

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#### Work proposed

An additional underground connection to replace and upgrade the existing underground connection.

#### Why it's needed

To strengthen the network to be able to handle the increased amount of energy in the system.

#### Have your say

We would like your views on our preliminary preference for an underground connection and the route corridor and possible route alignment we have identified.

## OUR PRELIMINARY PREFERRED OPTION - OTHER KEY WORKS

Between Wylfa, Anglesey and Pentir, Gwynedd



### Work proposed

An additional overhead connection between Wylfa and Pentir.

### Why it's needed

To connect new low-carbon generation sources to the existing network in North Wales.

### Have your say

We would like your views on our preliminary preference for an overhead connection. We would also like your views on the route corridors we have identified and any areas of sensitivity.

West Gwynedd



### Work proposed

A new substation in West Gwynedd.

### Why it's needed

To strengthen the network and ensure reliable supplies are maintained in the area, including to the Llŷn Peninsula.

### Have your say

We would like your views on the three potential substation sites we have identified.

A number of additional works would also be required to strengthen the electricity network. These would include work on existing overhead lines in North Wales, installation of equipment to boost transmission strength and work on existing substations at Wylfa, Pentir and Trawsfynydd. We do not yet know the full details of these works but as this becomes clearer, we are committed to keeping people fully informed.

As part of this first stage of consultation, we welcome your thoughts and views on our preliminary preferred strategic option. It was chosen as we believe it achieves the best balance between important technical, economic, amenity and environmental considerations when compared with the others we considered. However, we will keep our preferred strategic option under review throughout the consultation process to ensure that the most appropriate option is ultimately taken forward.

## FOR MORE INFORMATION

**A copy of our 'Need Case' and 'Strategic Options Report', as well as 'Our approach to the design and routing of new electricity transmission lines' and other project documents are available for download from:**

[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).



# ROUTE CORRIDOR MAP AT THE GLASLYN ESTUARY

The information on these pages will help you answer **question 3** in the **Glaslyn Estuary Feedback Form**.

**The map shows the broad route corridor and possible route alignment (the actual path the connection could take) we are consulting on.**

The route corridor starts at the existing Wern sealing end compound, where an overhead line joins onto an underground cable. It then broadly follows the easterly route of the existing underground cables.

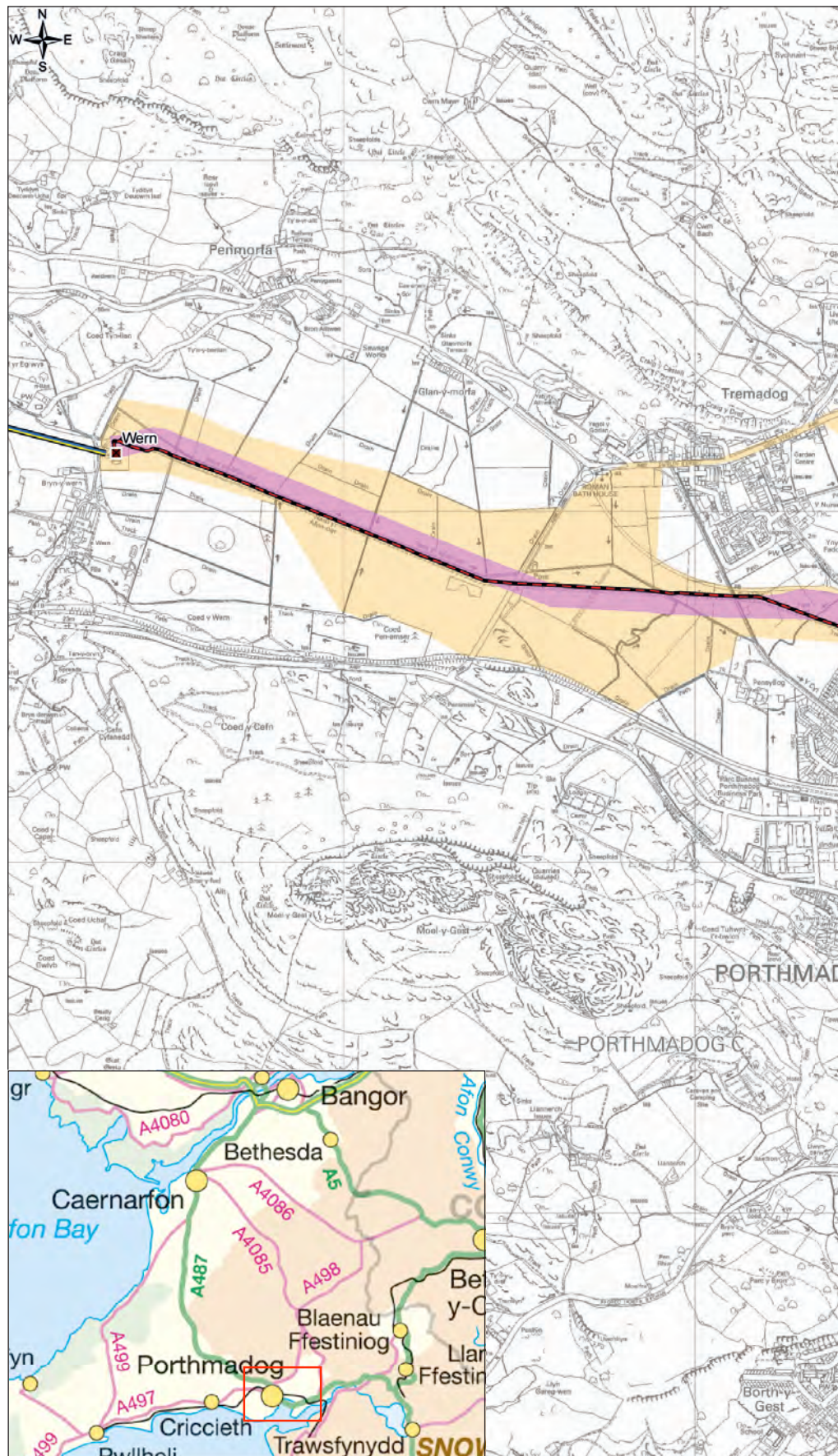
At the outskirts of Porthmadog and Tremadog, the route corridor provides two alternative cable alignment options.

An option was identified in the Route Corridor Report which would mean some of the cables could be put along Dublin Street and High Street through Tremadog. However, the route alignment we have brought forward avoids the need to put any of the cables through Tremadog.

The corridor comes together again north of Porthmadog and east of Tremadog where it crosses existing sports pitches. It then crosses south of the bypass and railway into the designated Site of Special Scientific Interest at Glaslyn and continues eastwards toward the existing sealing end compound at Y Garth near Minffordd.

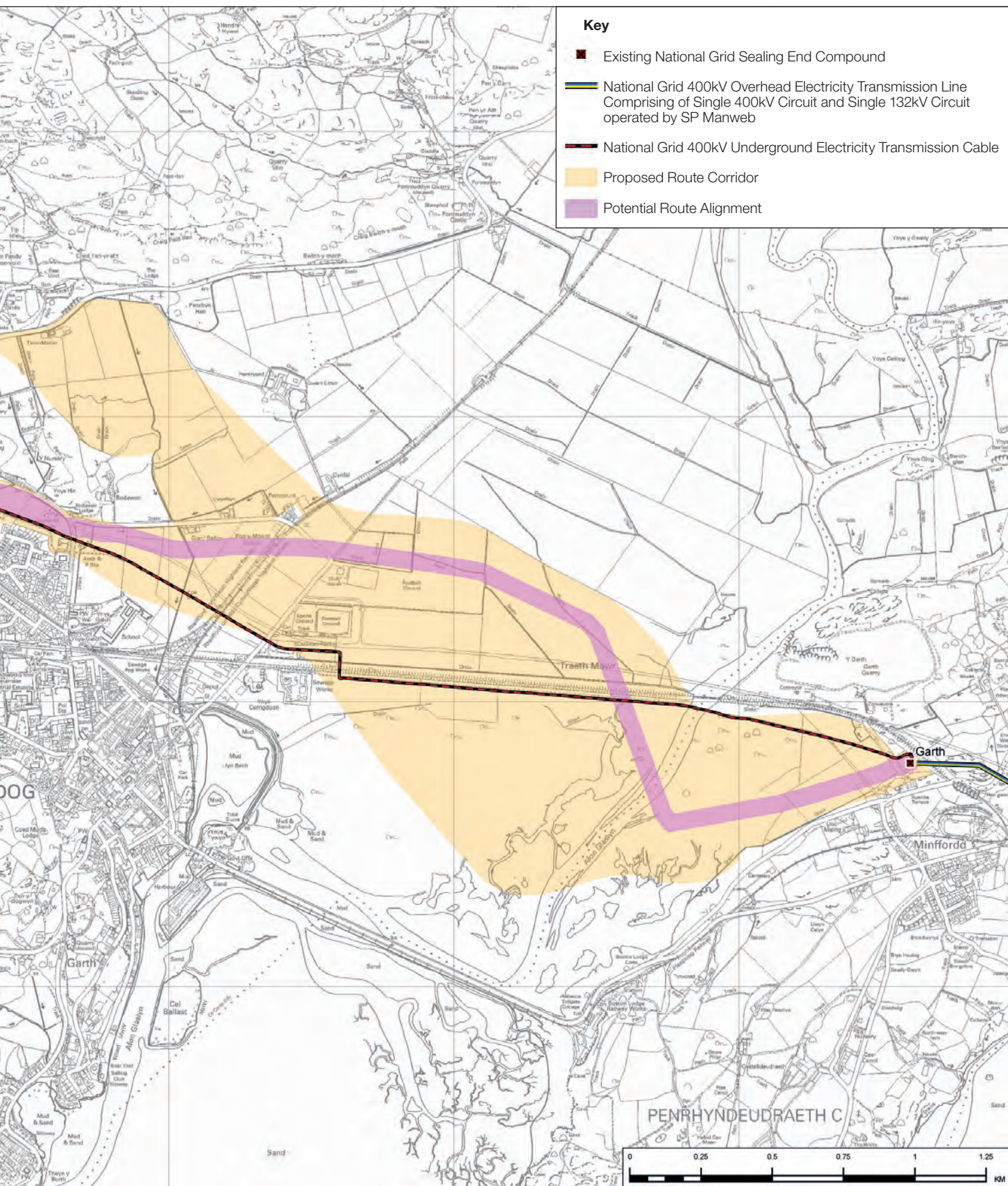
The total length of the route corridor is approximately 6 km (dependent upon the final route alignment). There is one Special Area of Conservation within the corridor (Meirionnydd Oakwoods and Bat Sites). The corridor crosses a Historic Landscape Area and includes a small number of listed buildings. At the western end it borders the Wern Registered Park & Garden.

The potential alignment shown will be reviewed following consultation feedback, site survey and more detailed engineering design.



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## FOR MORE INFORMATION

Throughout this booklet, we have referred to a number of important documents which will help you find out more information about the North Wales Connection Project. These are summarised below:

**Need Case:**

Explains why the project is needed.

**Strategic Options Report:**

Explains our selection and appraisal of the options we considered for connecting the proposed new energy generation.

**Glaslyn Estuary Route Corridor Report:**

Examines our preliminary preference for an underground connection, and identifies a proposed route corridor and potential route alignment at the Glaslyn Estuary.

## Other documents

There are also a number of other important documents which provide information about our proposed work in North Wales.

**FAQ:**

Answers to Frequently Asked Questions.

**Wylfa-Pentir Initial Route Corridor Report:**

Examines and identifies the preliminary potential overhead route corridors and Menai Strait crossing options between Wylfa and Pentir.

**West Gwynedd Substation Siting Study:**

Examines and identifies suitable site options for a substation in West Gwynedd.

**Our approach to the design and routeing of new electricity lines:**

Explains the process that National Grid follows when planning new transmission routes.

Copies of these documents can be downloaded from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available from a number of public locations or on request by contacting the National Grid team, details below.

## CONTACT US

Freephone: **0800 990 3567** Lines are open between 9:00am – 5:00pm Monday – Friday

Sending an email to: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

Writing to our freepost address at: **FREEPOST NATIONAL GRID NW CONNECTION**

Appendix J: Feedback form explanation booklets (Wylfa-Pentir, West Gwynedd and Glaslyn Estuary) dual language

# Llyfryn Esbonio'r Ffurflen Adborth

## Cysylltiad Gogledd Cymru

Hydref 2012



### Wylfa-Pentir

Mae'r National Grid wedi lansio cam cyntaf ei ymgynghoriad ar gynigion i gysylltu'r trydan newydd sylweddol a fydd yn cael ei gynhyrchu yng ngogledd Cymru.

Mae eich adborth yn bwysig iawn i helpu i gyfrannu at y penderfyniadau y byddwn yn eu gwneud. Dyna pam yr ydym am annog cynifer â phosibl o bobl i gyfrannu at ein hymgyngoriad.

Diolch ichi ymlaen llaw am eich amser. Edrychwn ymlaen at glywed eich barn.

## SUT I DDEFNYDDIO'R LLYFRYN HWN

Mae'r llyfryn hwn i'w ddefnyddio ochr yn ochr â **Ffurflen Adborth Wylfa-Pentir** a'i fwriad yw helpu pawb i roi adborth sydd wedi'i seilio hyd y bo modd ar wybodaeth.

Rhowch amser i ddarllen y ddogfen hon, a'i chael wrth law pan fyddwch yn Llyfryn ffurflen adborth.

Mae'r llyfryn hwn yn cynnwys crynodeb o'n **'Strategic Options Report'**, a luniwyd i nodi'r dewis rhagarweiniol yr ydym yn ei ffafrio ar gyfer cysylltu'r ynni newydd a fydd yn cael ei gynhyrchu yng Ngogledd Cymru i'n rhwydwaith. Bydd y crynodeb hwn yn eich helpu i ateb **cwestiynau 1-2** yn y ffurflen adborth.

Mae'r llyfryn hwn hefyd yn cynnwys crynodeb a mapiau o bob un o'r opsiynau croesi a choridorau llwybr yr ydym am ymgynghori yn eu cylch a bydd y rhain yn eich helpu i ateb **cwestiynau 3-7** yn y ffurflen adborth.

Ar y dudalen gefn fe welwch fanylion lle gallwch gael gafael ar gopiâu o'r holl ddogfennau y cyfeirir atynt yn y llyfryn hwn, a sut y gallwch gysylltu â ni os oes gennych chi unrhyw gwestiynau.



## CYNNWYS

<b>Tudalen 2 – 5</b>	Crynodeb o'r 'Strategic Options Report'
<b>Tudalen 6 – 7</b>	Map trosolwg o'r coridorau llwybr rhwng Wylfa a Phentir
<b>Tudalen 8 – 9</b>	Dewisiadau ar gyfer coridorau llwybr – Piws a Melyn
<b>Tudalen 10 – 11</b>	Dewisiadau ar gyfer coridorau llwybr – Glas ac Oren
<b>Tudalen 12 – 13</b>	Dewisiadau A a B ar gyfer croesi Afon Menai
<b>Tudalen 14 – 15</b>	Dewisiadau C, D ac E ar gyfer croesi Afon Menai
<b>Tudalen 16</b>	Am ragor o wybodaeth / Cysylltu â ni

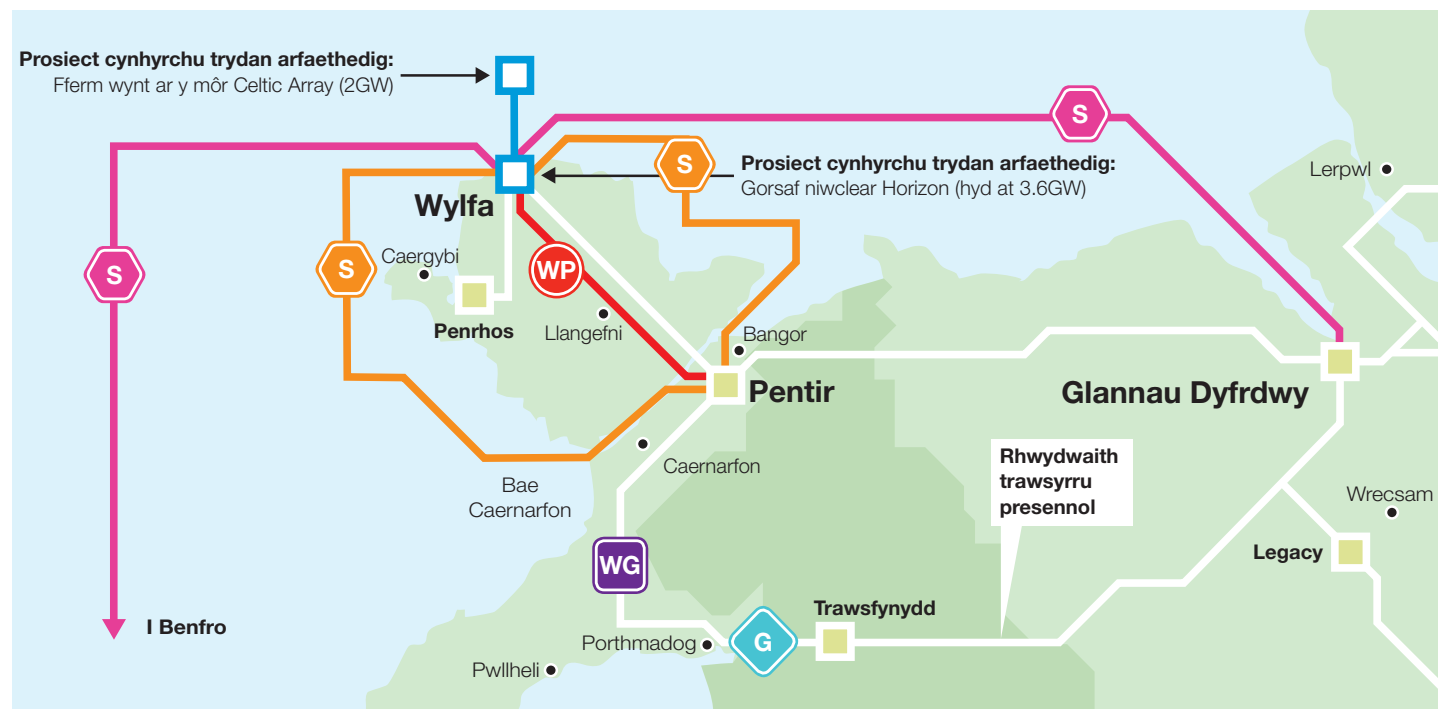
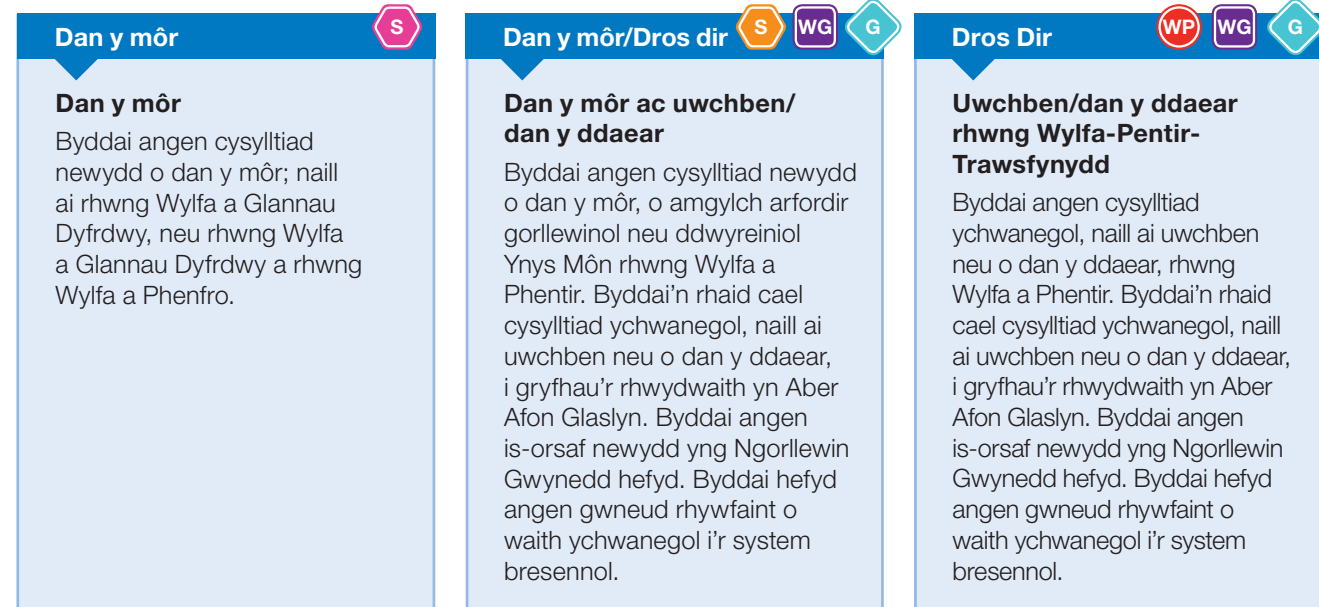
## Y DEWISIADAU CYSYLLTU A YSTYRIWYD GENNYM

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 1-2** yn **Ffurflen Adborth Wylfa – Pentir**.

**Er mwyn dod o hyd i'r ffordd orau o gysylltu'r trydan newydd y bwriedir ei gynhyrchu yng Ngogledd Cymru, mae National Grid yn cynnal proses i ddod o hyd i 'ddewisiadau strategol'.**

Yn ystod y broses hon, daethom o hyd i nifer fawr o fforddau posibl o gysylltu'r prosiectau cynhyrchu trydan newydd arfaethedig yng Ngogledd Cymru â'r rhwydwaith trydan. Roedd y rhain o dan y môr, dros dir neu'n gyfuniad o'r ddau. Ceir crynodeb ohonynt isod.

**Mae'r diagram isod yn nodi'r holl ddewisiadau cysylltu gwahanol a gafodd eu hasesu gennym:**



Cewch wybod mwy am y dull y mae National Grid yn ei ddefnyddio wrth gysylltu prosiectau trydan newydd drwy ddarllen 'Our approach to the design and routing of new electricity transmission lines' Hefyd, cewch ragor o wybodaeth am y gwahanol opsiynau a gafodd eu hystyried gennym ar gyfer cysylltu'r prosiectau cynhyrchu trydan arfaethedig yng Ngogledd Cymru drwy ddarllen ein 'Strategic Options Report'.

## ADOLYGU'R DEWISIADAU CYSYLLTU

**Wedyn, cafodd pob un o'r dewisiadau strategol eu hadolygu yn erbyn effeithiau amgylcheddol a chymunedol, ymarferoldeb technegol a chostau oes gyfan:**

### Dan y môr – HVDC/AC

- Ar gyfer cysylltiadau o dan y môr i Lannau Dyfrdwy neu Benfro, byddai'n rhaid i National Grid ddefnyddio ceblau HVDC (Cerrynt Uniongyrchol Foltedd Uchel). Ar gyfer cysylltiad o dan y môr i Bentir, galledd ddefnyddio ceblau HVDC neu AC (Cerrynt Eiledol) gan eu bod yn nes o lawer.
- Wrth osod ceblau o dan y môr, rhaid ystyried nifer o faterion amgylcheddol. Serch hynny, yn aml mae modd lleihau neu osgoi'r rhain drwy lwybro gofalus.
- Mae HVDC yn dechnoleg sy'n esblygu. Does dim systemau HVDC o'r capasiti hwn wedi cael eu gosod yn unman arall yn y byd. Ar gyfer y ddau opsiwn, mae hyn yn peri risgiau technegol ac ariannol.
- Mae HVDC yn dechnoleg sy'n esblygu. Does dim systemau HVDC o'r capasiti hwn wedi cael eu gosod yn unman arall yn y byd. Ar gyfer y ddau opsiwn, mae hyn yn peri risgiau technegol ac ariannol.
- Amcangyfrifir bod y costau cyfalaf rhwng £1.6 biliwn a £2 biliwn ar gyfer HVDC, a rhwng £2.2 a £2.5 biliwn ar gyfer cysylltiadau AC o dan y môr. Mae'r gost yn bwysig gan ei bod yn cael ei throsglwyddo i'r cyhoedd yn y pen draw drwy filiau ynni.

**Wrth ystyried hyn i gyd, nid dewis o dan y môr yw'r cysylltiad rhagarweiniol a ffeirir gennym.**

### Uwchben/dan y ddaear rhwng Wylfa a Phentir

- Byddai effeithiau llwybr sy'n gyfan gwbl o dan y ddaear yn cael eu cyfyngu i'r cam adeiladu i raddau helaeth.
- Rydym yn cydnabod effaith weledol llinellau uwchben, ond mae National Grid yn credu y byddai'n bosibl lleihau/osgoi hyn gyda dewisiadau sy'n cynnwys llwybro gofalus, plannu a sgrinio neu ystyried rhoi rhannau o'r cysylltiad o dan y ddaear.
- Bydd cyfanswm cost y prosiect, gan gynnwys 40 km o geblau o dan y ddaear, oddeutu £1.7 biliwn. Mae hynny £923 miliwn yn fwy na'r un prosiect ar sail ceblau uwchben y ddaear.

**Wrth ystyried hyn, y dewis rhagarweiniol a ffeirir gan National Grid yw cysylltiad uwchben.**

### Is-orsaf yng Ngorllewin Gwynedd

Ar gyfer yr holl ddewisiadau (heblaw am HVDC o dan y môr), byddai angen is-orsaf newydd yng Ngorllewin Gwynedd er mwyn cynnal cyflenwadau dibynadwy i'r ardal.

### Uwchben/Dan y ddaear yn Aber Afon Glaslyn

- Byddai effeithiau llwybr sy'n gyfan gwbl o dan y ddaear yn cael eu cyfyngu i'r cam adeiladu i raddau helaeth.
- Mae'r cysylltiad presennol yn Aber Afon Glaslyn eisoes o dan y ddaear.
- Byddai cysylltiad sy'n gyfan gwbl uwchben yn cael effaith weledol a thirwedd fawr, yn enwedig yng nghyswllt Parc Cenedlaethol Eryri.
- Byddai cysylltiad sy'n gyfan gwbl o dan y ddaear yn 6 km o hyd ac yn costio £132 miliwn. Mae hynny £121 miliwn yn fwy na chysylltiad uwchben.

**Wrth ystyried hyn, y dewis rhagarweiniol a ffeirir gan National Grid ar gyfer Aber Glaslyn yw cysylltiad o dan y ddaear.**

## Y DEWIS RHAGARWEINIOL A FFEFRIR GENNYM

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 1-2** yn **Ffurflen Adborth Wylfa-Pentir**.

**Yn dilyn y broses dewisiadau strategol, y dewis rhagarweiniol a ffeffir gennym yw cysylltiad dros dir, sy'n cynnwys tri phegyn gwaith hanfodol. Mae'r rhain yn cynnwys cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir, is-orsaf newydd yng Ngorllewin Gwynedd, a chysylltiad dan y ddaear ychwanegol yn Aber Afon Glaslyn.**

Rhwng Wylfa, Ynys Mon a Phentir, Gwynedd



### Y gwaith arfaethedig

Cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir.

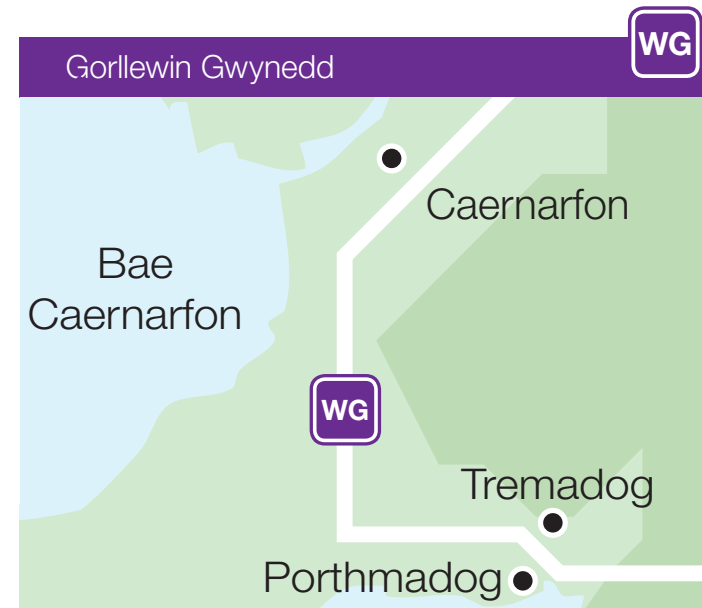
### Pam mae angen hynny?

I gysylltu ffynonellau cynhyrchu carbon isel newydd â'r rhwydwaith presennol yng Ngogledd Cymru.

### Dweud eich dweud

Hoffem gael eich barn ar y dewis rhagarweiniol a ffeffir gennym ar gyfer cysylltiad uwchben. Hoffem hefyd gael eich barn ar y coridorau llwybr yr ydym wedi'u nodi ac unrhyw feysydd sensitif.

## Y DEWIS RHAGARWEINIOL A FFEFRIR GENNYM - GWAITH PWYSIG ARALL



### Y gwaith arfaethedig

Is-orsaf newydd yng Ngorllewin Gwynedd.

### Pam mae angen hynny?

I gryfhau'r rhwydwaith a gwneud yn siŵr bod cyflenwadau dibynadwy'n cael eu cynnal yn yr ardal gan gynnwys i Benrhyn Llŷn.

### Dweud eich dweud

Hoffem gael eich barn ar y tri safle posibl yr ydym wedi'u nodi ar gyfer is-orsaf.



### Y gwaith arfaethedig

Cysylltiad tanddaearol ychwanegol i ddisodli ac uwchraddio'r cysylltiad tanddaearol presennol.

### Pam mae angen hynny?

I gryfhau'r rhwydwaith er mwyn gallu delio â'r ynni ychwanegol yn y system.

### Dweud eich dweud

Hoffem gael eich barn ar y dewis rhagarweiniol a ffeffir gennym am gysylltiad o dan y ddaear a'r coridor llwybr a'r aliniad posibl ar gyfer y llwybr yr ydym wedi'u nodi.

Byddai hefyd angen gwneud gwaith ychwanegol i gryfhau'r rhwydwaith trydan. Byddai hyn yn cynnwys gweithio ar linellau uwchben presennol yng Ngogledd Cymru, gosod offer i roi hwb i gryfder trawsyrru a gweithio ar is-orsafoedd Wylfa, Pentir a Thrawsfynydd. Nid ydym yn gwybod manylion llawn y gwaith hwn ar hyn o bryd ond wrth i hyn ddod yn gliriach, rydyn ni wedi ymrwymo i roi'r wybodaeth lawn i bobl.

Fel rhan o'r cam cyntaf hwn yn yr ymgynghori, rydym yn croesawu eich barn a'ch safbwyntiau am y dewis strategol rhagarweiniol a ffeffir gennym. Fe'i dewiswyd oherwydd credwn ei fod yn sicrhau'r cydbwysedd gorau rhwng ystyriaethau technegol, economaidd, amwynder ac amgylcheddol o'i gymharu â'r dewisiadau eraill a ystyriwyd gennym. Ond byddwn yn dal i adolygu'r dewis strategol a ffeffir gennym gydol y broses ymgynghori i sicrhau mai'r dewis mwyaf priodol sy'n cael ei ddatblygu yn y pen draw.

## AM RAGOR O WYBODAETH

**Mae modd lawrlwytho copi o'r 'Need Case' a'r 'Strategic Options Report', yn ogystal â 'Our approach to the design and routing of new electricity transmission lines' a dogfennau eraill yn ymwneud â'r prosiect oddi ar y we yn: [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)**

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copïau ar gael hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid (gweler y dudalen gefn am fanylion).



# MAP TROSOLWG O'R CORIDORAU LLWYBR RHWNG WYLFA A PHENTIR

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 3-7** yn **Ffurflen Adborth Wylfa-Pentir**.

**Mae'r map hwn yn dangos yr holl goridorau llwybr mae National Grid wedi'u nodi y gallai cysylltiad ychwanegol eu dilyn.**

Mae coridor llwybr yn ddam llydan o dir lle gellid adeiladu'r cysylltiad newydd. Gallai'r coridor fod yn llydan iawn mewn rhai llefydd (hyd at 4 km); mewn llefydd eraill byddai'n fwy cyfyngedig o ganlyniad i gyfyngiadau fel trefi a phentrefi ac ardaloedd amgylcheddol dynodedig.

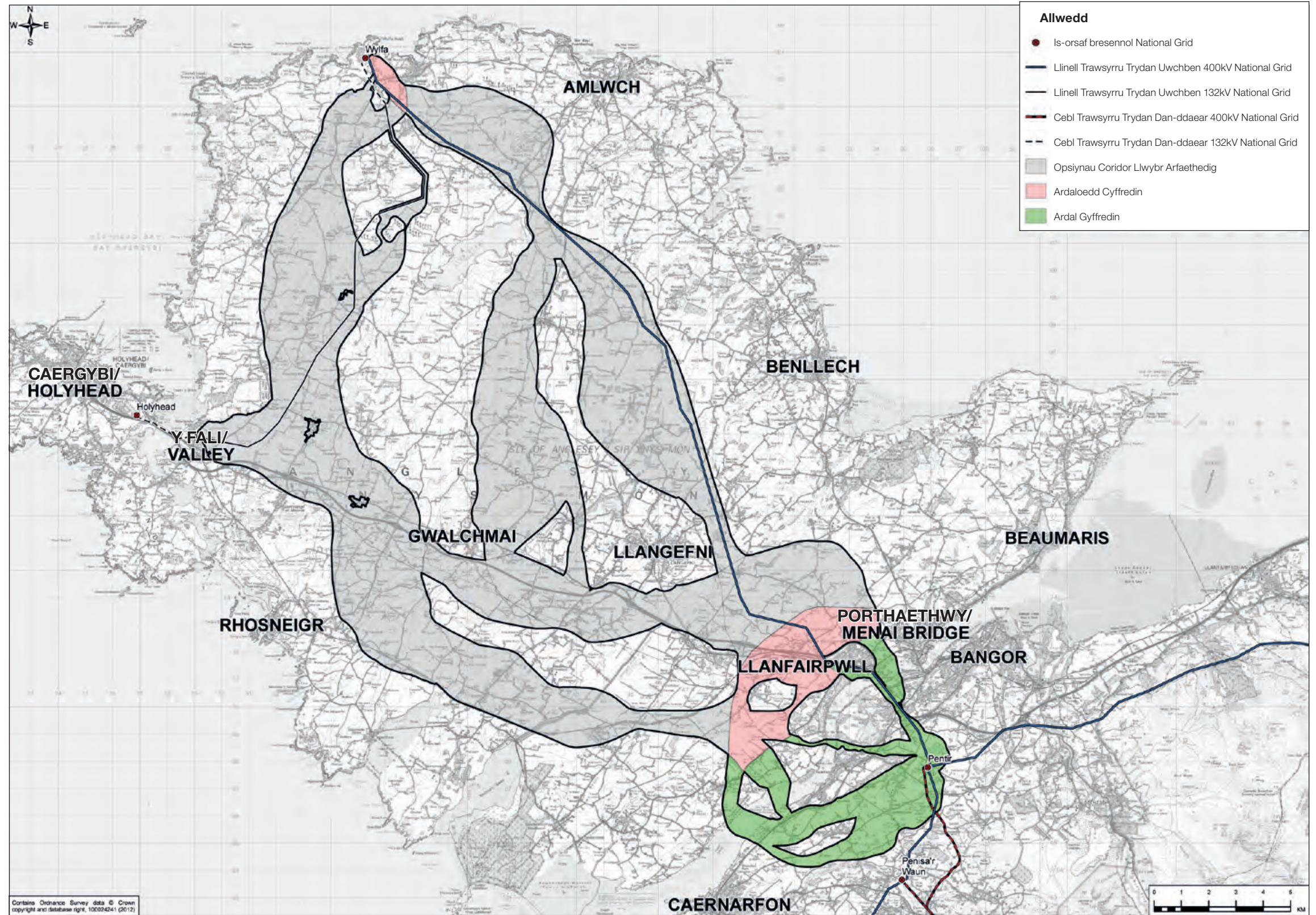
Yn dilyn proses helaeth lle ystyriwyd ffactorau cymdeithasol, amgylcheddol a thechnegol pwysig, rydym wedi dynodi:

- Pedwar coridor llwybr posibl ar gyfer llinellau uwchben ar draws Ynys Môn, a
- Pump opsiwn posibl ar gyfer croesi Afon Menai

Os datblygir y dewis strategol a ffeirir gennym, dim ond un coridor llwybr, ac un dewis ar gyfer man croesi fydd yn cael eu datblygu yn y pen draw.

Mae'r tudalennau canlynol yn dangos mapiau o bob un o'r pedwar dewis mewn lliw ar gyfer y llwybr a phob un o'r pum opsiwn ar gyfer croesi Afon Menai yr ydym yn ymgynghori yn eu cylch mewn mwy o fanylder, ynghyd â chrynodeb o nodweddion pob un.

Yng ngogledd yr ynys a thuag at dde'r ynys, mae'r coridorau'n uno mewn 'ardaloedd cyffredin' sydd wedi'u marcio mewn pinc ar y map. Gellid defnyddio unrhyw rai o'r coridorau llwybr ar y cyd ag unrhyw un o'r dewisiadau ar gyfer croesi Afon Menai (mewn gwyrdd ar y map). Unwaith y dewisir coridor llwybr ac opsiwn ar gyfer croesi Afon Menai, bydd yr aliniad posibl yn yr ardaloedd cyffredin hyn yn cael ei asesu a'i ddatblygu ar gyfer cael adborth yn ystod cam nesaf ein hymgynghoriad.



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrhydi ©Hawlfraint y Goron. Mae atgynhychu heb ganiatâd yn torri hawlfraint y Goron a gallech gael eich erlyn neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



## OPSIWN CORIDOR LLWYBR (PIWS)

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 3, 4 a 7** yn **Ffurflen Adborth Wylfa-Pentir**.

**Mae'r coridor piws oddeutu 33 cilometr o hyd ac mae'n opsiwn sy'n cyfeirio'r llinell i orllewin yr ynys. Mae'n gadael Wylfa i gyfeiriad y de, yn dilyn i raddau helaeth y llinell uwchben 132kV cyfredol (cyflenwad trydan lleol) a'r A5025 sy'n rhedeg ar hyd gorllewin yr ynys i lawr i'r ardal ger y Fali a'r A55. Bydd y coridor wedyn yn rhedeg tuag at yr arfordir deheuol ac oddi wrth yr A55 tuag at Afon Menai.**

Mae'r coridor piws yn ffinio tirlurf arbennig Mynydd Mechell yn y gogledd ac yn pasio (ond ddim yn cynnwys) Bodedern, Bryngwran a Llanddeusant. Mae'n agos at wersyll RAF Fali. Tuag at Afon Menai, mae'n croesi pen deheuol Cors Malltraeth.

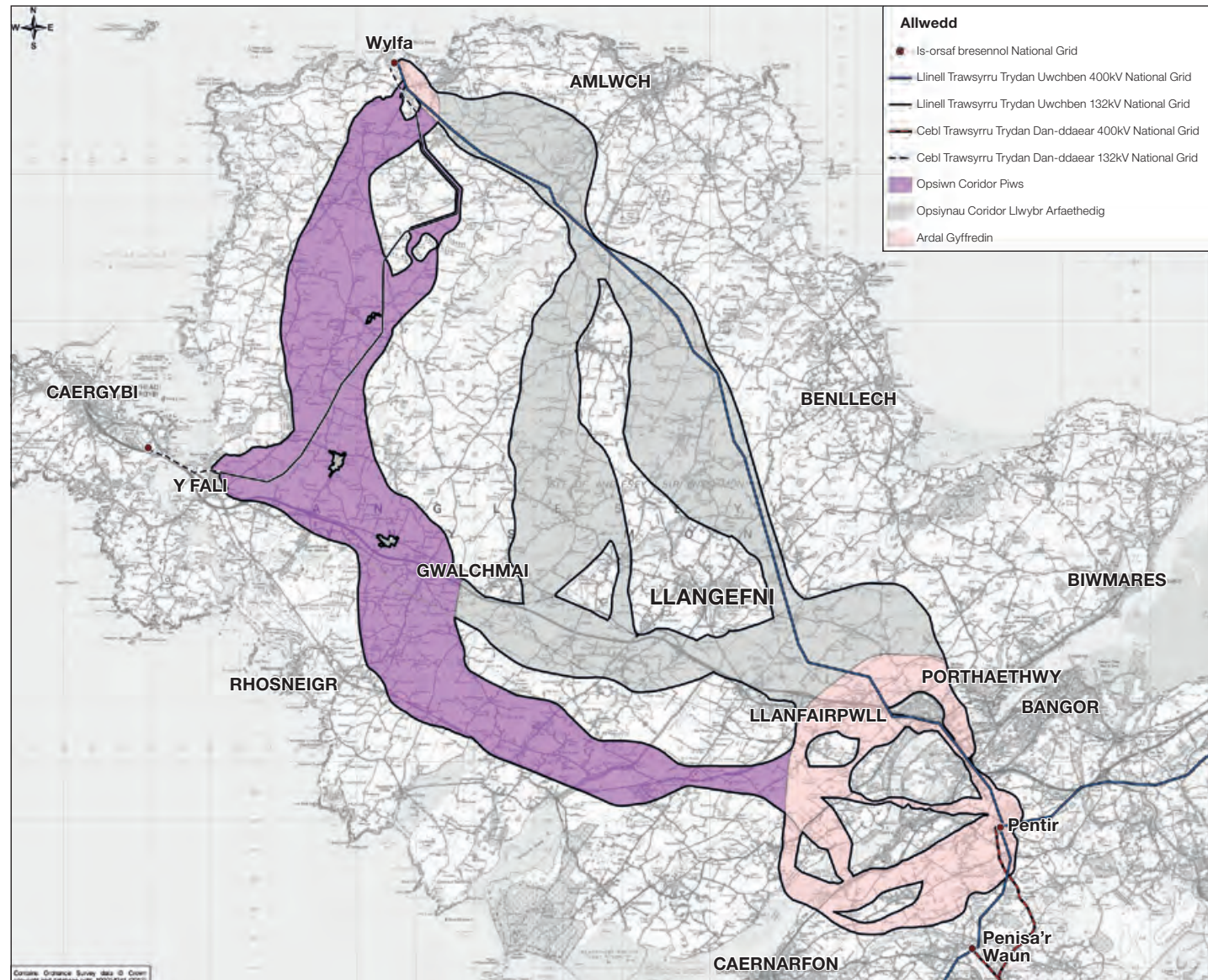
Does dim dynodiadau Tirweddau Cenedlaethol yn y coridor hwn ond mae'n ffinio ag Ardal o Harddwch Naturiol Eithriadol Ynys Môn i'r gorllewin.

Yn y coridor y mae:

- Chwe Safle o Ddiddordeb Gwyddonol Arbennig (SDdGA): Cae Gwyn; Llyn Llygeirian; Salbri; Fferam Uchaf; Llyn Padrig; a Chors Malltraeth (Cors Ddyga).
- Saith Heneb Restredig: Claddfa Grwn Pen-y-Morwyd; Maen Hir Capel Soar; Maen Hir Tregwehelydd; Mynwent Gristnogol Gynnar Bededern; Carreg Arysgrifedig Bodfeddan; Siambr Gladdu Tŷ Newydd; a Meini Hirion.
- Un Ardal o Harddwch Naturiol Eithriadol (AHNE): AHNE Ynys Môn.

Mae'r mesurau posibl ar gyfer lleihau effaith llinell uwchben yn y coridor Piws yn cynnwys:

- Alinio a llwybro gofalus
- Sgrinio, tirlunio a phlannu
- Defnyddio gwahanol ddyluniadau o dyrau, a allai gynnwys peilonau 'uchder isel' a/neu y 'peilonau-T' newydd
- Ei rhoi o dan y ddaear lle bo hynny'n briodol
- Tynnu'r seilwaith trawsyrru neu ddsbarthu presennol, er enghraifft, byddwn yn ystyried pa mor ymarferol yw tynnu'r llinell 132kV bresennol rhwng Wylfa a Phenrhos.



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrhydi ©Hawffraint y Goron. Mae atgynhychu heb ganiatâd yn torri hawffraint y Goron a gallech gael eich erlyn neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).

## OPSIWN CORIDOR LLWYBR (MELYN)

**Mae'r coridor melyn oddeutu 29 cilometr o hyd ac mae'n opsiwn sy'n cyfeirio llinell i orllewin yr ynys. Mae'n gadael Wylfa i gyfeiriad y de, yn dilyn i raddau helaeth y llinell uwchben 132kV a'r A5025 sy'n rhedeg ar hyd gorllewin yr ynys i lawr i'r ardal ger y Fali a'r A55. Yn y fan honno, mae'r coridor yn troi tua'r dwyrain, ac yn dilyn llwybr yr A55 a'r A5 fwy neu lai at Afon Menai.**

Mae'r coridor yn pasio (ond nid yw'n cynnwys) pentrefi Bodedern, Bryngwran a Llanddeusant.

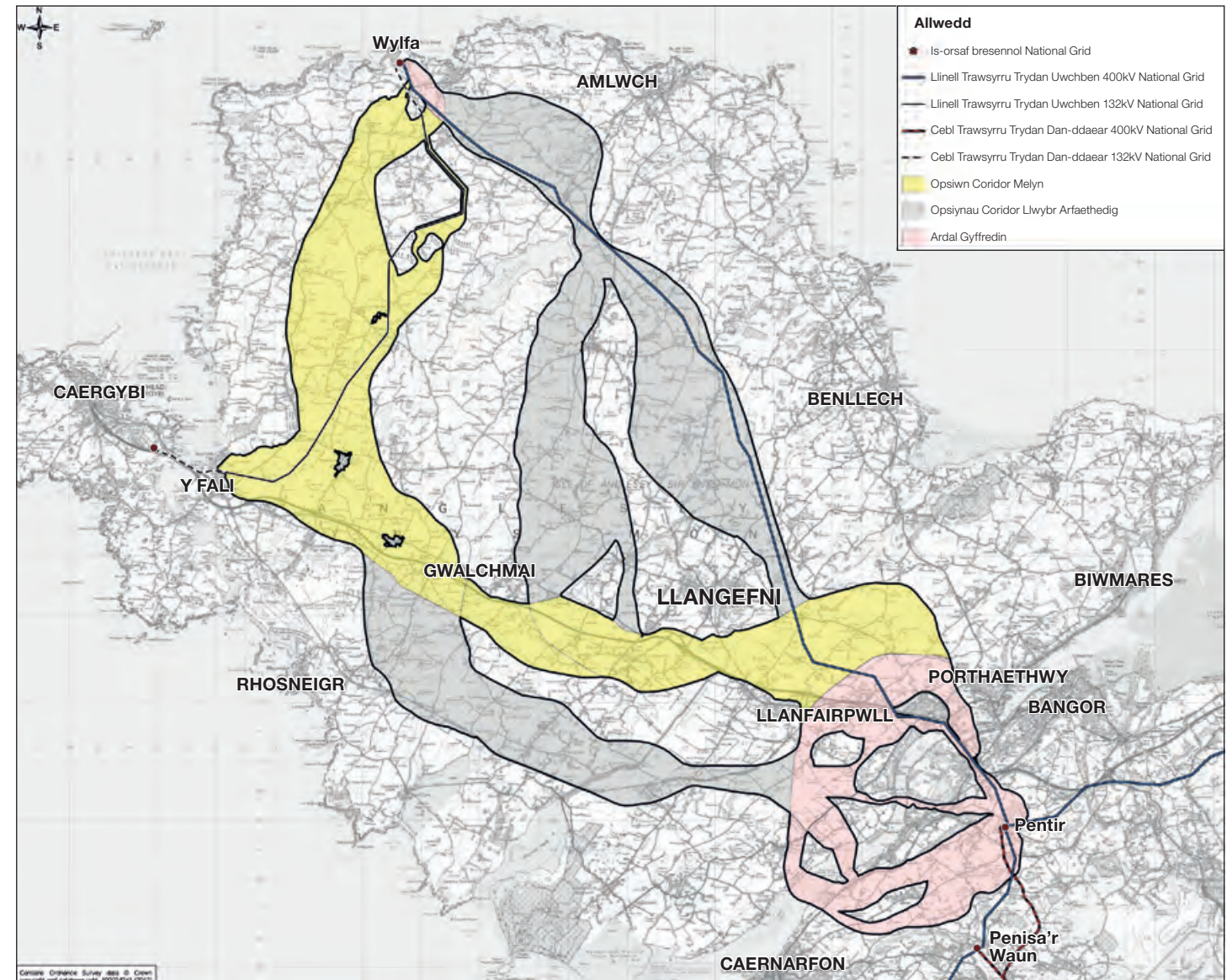
Does dim dynodiadau Tirweddau Cenedlaethol yn y coridor hwn ond mae'n ffinio ag Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn i'r gorllewin.

Yn y coridor y mae:

- Pum Safle o Ddiddordeb Gwyddonol Arbennig (SDdGA): Cae Gwyn, Fferam Uchaf; Llyn Llygeirian; Salbri a Chors Malltraeth (Cors Ddyga).
- 11 Heneb Restredig: Cloddfa Grwn Pen-y-Morwyd; Maen Hir Capel Soar; Maen Hir Tregwehelydd; Mynwent Gristnogol Gynnar Bodedern; Cloddfa Graiglas; Clwstwr Cytiau Tyddyn Sadler; Meini Hirion; Mynwent y Llwyn; Maen Hir Hirdre-Faig; Hen Eglwys a Mynwent y Plwyf; a (safle) Capel Eithin a Mynwent.
- Un Ardal o Harddwch Naturiol Eithriadol (AHNE): AHNE Ynys Môn.

Mae'r mesurau posibl ar gyfer lleihau effaith llinell uwchben yn y coridor Melyn yn cynnwys:

- Alinio a llwybro gofalus
- Sgrinio, tirlunio a phlannu
- Defnyddio gwahanol ddyluniadau o dyrau, a allai gynnwys peilonau 'uchder isel' a/neu y 'peilonau-T' newydd
- Ei rhoi o dan y ddaear lle bo hynny'n briodol
- Tynnu'r seilwaith trawsyrru neu ddsbarthu presennol, er enghraifft, byddwn yn ystyried pa mor ymarferol yw tynnu'r llinell 132kV bresennol rhwng Wylfa a Phenrhos.



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## OPSIWN CORIDOR LLWYBR (GLAS)

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 3, 4 a 7** yn **Ffurflen Adborth Wylfa-Pentir**.

**Mae'r coridor glas oddeutu 28 cilomedr o hyd a dyma opsiwn sy'n osgoi rhedeg yn gyfochrog â'r rhan fwyaf o'r llinellau uwchben 400 kV a 132 kV presennol, drwy dirwedd cymharol denau ei phoblogaeth yng nghanol yr ynys.**

Mae'n gadael Wylfa yn yr un cyfeiriad â llinell uwchben 400kV cyfredol y National Grid a'r coridor oren arfaethedig, cyn rhannu a rhedeg i'r de tuag at RAF Mona. Mae'r coridor wedyn yn pasio'r naill ochr i RAF Mona cyn troi i'r dwyrain ar hyd yr A55 tuag at Afon Menai. Mae wedyn yn rhedeg i'r gogledd i Gors Malltraeth ac ar hyd rhan o'r A55.

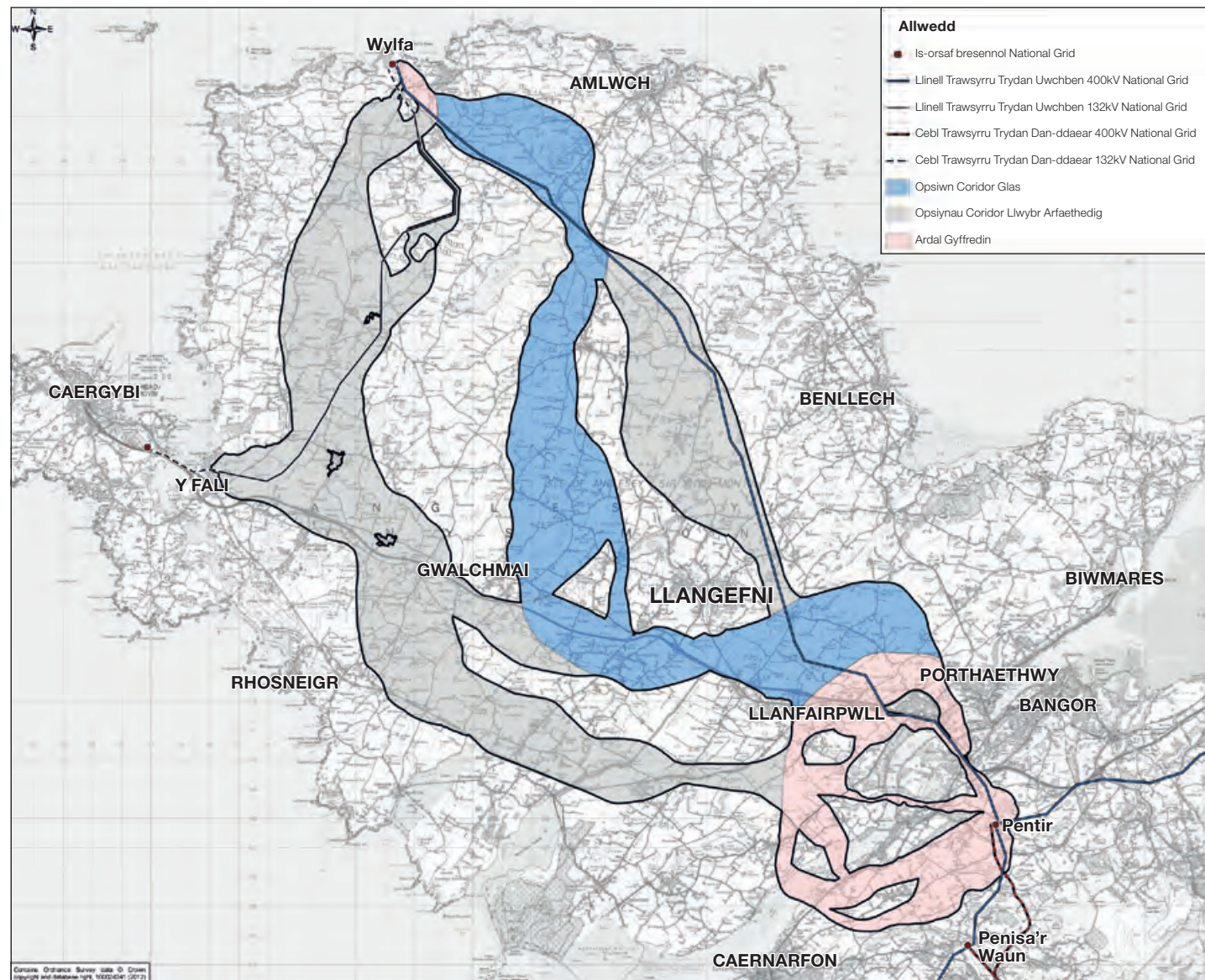
Does dim dynodiadau Tirweddau Cenedlaethol yn y coridor hwn.

Yn y coridor y mae:

- Tri Safle o Ddiddordeb Gwyddonol Arbennig (SDdGA): Llyn Alaw; Cors Bodwrog; a Chors Malltraeth (Cors Ddyga).
- Deg Heneb Restredig: Claddfa Grwn Pen-y-Morwyd; Llifad, Carreglefn; Maen Hir Bodewryd; Claddfa Graiglas; Clwstwr Cytiau Tyddyn Sadler; Mynwent y Llwyn; (safle) Capel Eithin a Mynwent; Maen Hir 410m i'r gogledd o Eglwys; Hen Eglwys a Mynwent y Plwyf; a Maen Hir Hirdre-Faig.
- Maes Sioe Môn

Mae'r mesurau posibl ar gyfer lleihau effaith llinell uwchben yn y coridor Glas yn cynnwys:

- Careful routeing and alignment
- Sgrinio, tirlunio a phlannu
- Defnyddio gwahanol ddyluniadau o dyrau, a allai gynnwys peilonau 'uchder isel' a/neu y 'peilonau-T' newydd
- Ei rhoi o dan y ddaear lle bo hynny'n briodol
- Tynnu'r seilwaith trawsyrru neu ddsbarthu presennol.



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrthidi ©Hawfrait y Goron. Mae atgynhychu heb ganiatâd yn torri hawffrait y Goron a gallech gael eich erlyn neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).

## OPSIWN CORIDOR LLWYBR (OREN)

**Mae'r coridor oren oddeutu 23 cilomedr o hyd ac, at ei gilydd, mae'n dilyn llwybr y llinell uwchben 400 kV cyfredol wrth iddi redeg o orsaf bŵer Wylfa i is-orsaf Pentir.**

O'r holl goridau sy'n cael eu hystyried, dyma'r un lleiaf poblog a byddai'n rhoi opsiwn i gyfyngu ar yr effeithiau ar yr ynys i'r rheini sydd eisoes yn bodoli oherwydd y llinell uwchben gyfredol. Mae'n pasio'n agos at Langefni.

Mae'n cynnwys y llinell 400 kV cyfredol a nifer o ddynodiadau amgylcheddol, gan gynnwys gwlyptir sydd wedi'i ddiogelu ac Ardal Gadwraeth Arbennig (AGA).

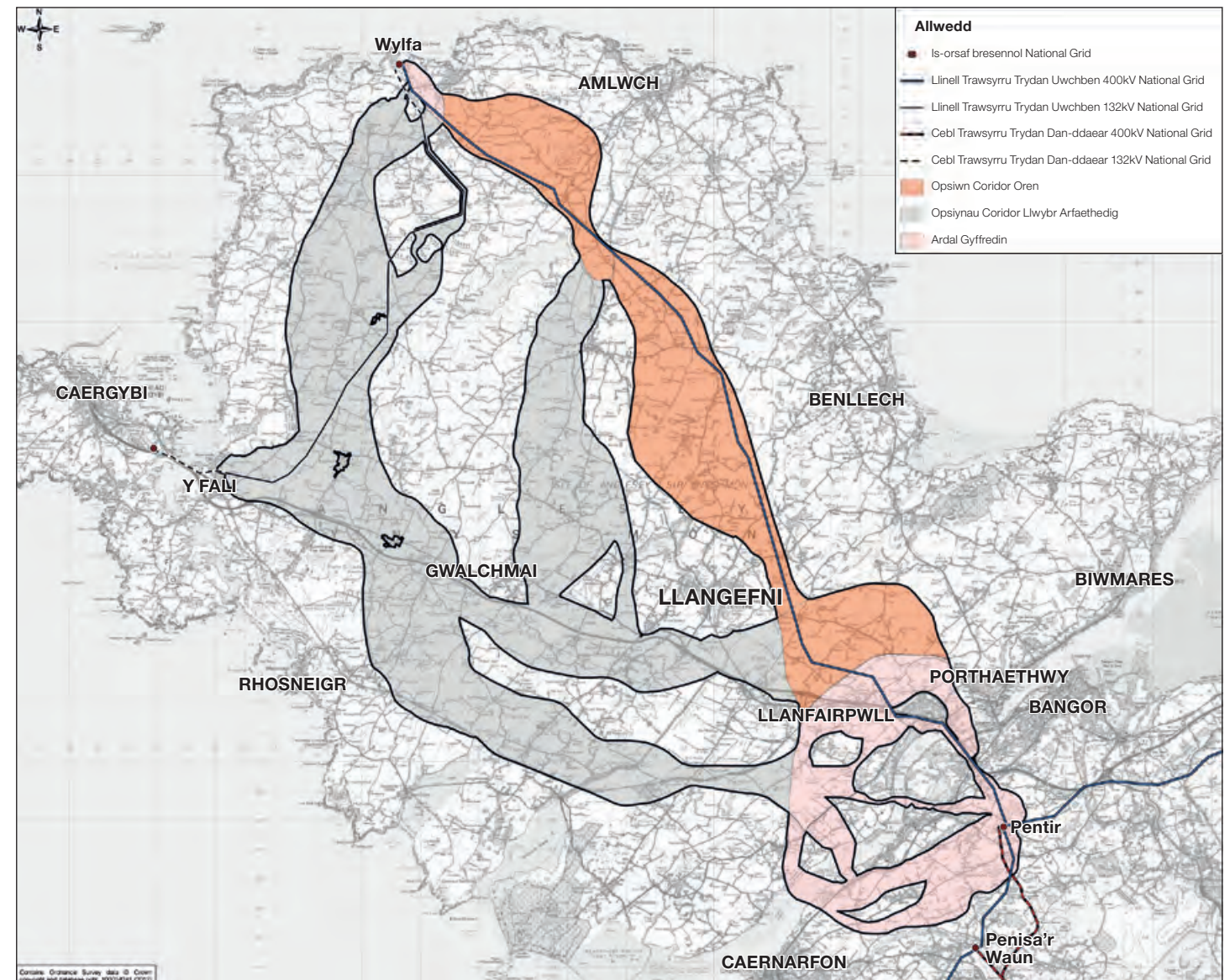
Mae'n cynnwys y llinell 400 kV cyfredol a nifer o ddynodiadau amgylcheddol, gan gynnwys gwlyptir sydd wedi'i ddiogelu ac Ardal Gadwraeth Arbennig (AGA).

Yn y coridor y mae:

- Un gwlyptir o bwysigrwydd rhyngwladol: Ffeniau Ynys Môn a Llŷn
- Un Ardal Gadwraeth Arbennig: Ffeniau Ynys Môn
- Dau Safle o Ddiddordeb Gwyddonol Arbennig: SDdGA (Cors Erddreiniog a Chaeau Talwrn);
- Un Warchodfa Natur Genedlaethol: Cors Erddreiniog
- 11 Heneb Restredig: Claddfa Grwn Pen-y-Morwyd; (safle) Capel Eithin a Mynwent; Llifad, Carreglefn; Maen Hir Bodewryd; Maen Hir Llys Einion; Maen Chwyf; Carreg Leidr; Llech Golman; Maen Addwyn; Maen Hir Hirdre-Faig a Maen Hir 410m i'r gogledd o Eglwys.

Mae'r mesurau posibl ar gyfer lleihau effaith llinell uwchben yn y coridor Oren yn cynnwys:

- Alinio a llwybro gofalus
- Sgrinio, tirlunio a phlannu
- Defnyddio gwahanol ddyluniadau o dyrau, a allai gynnwys peilonau 'uchder isel' a/neu y 'peilonau-T' newydd
- Ei rhoi o dan y ddaear lle bo hynny'n briodol
- Tynnu'r seilwaith trawsyrru neu ddsbarthu presennol.



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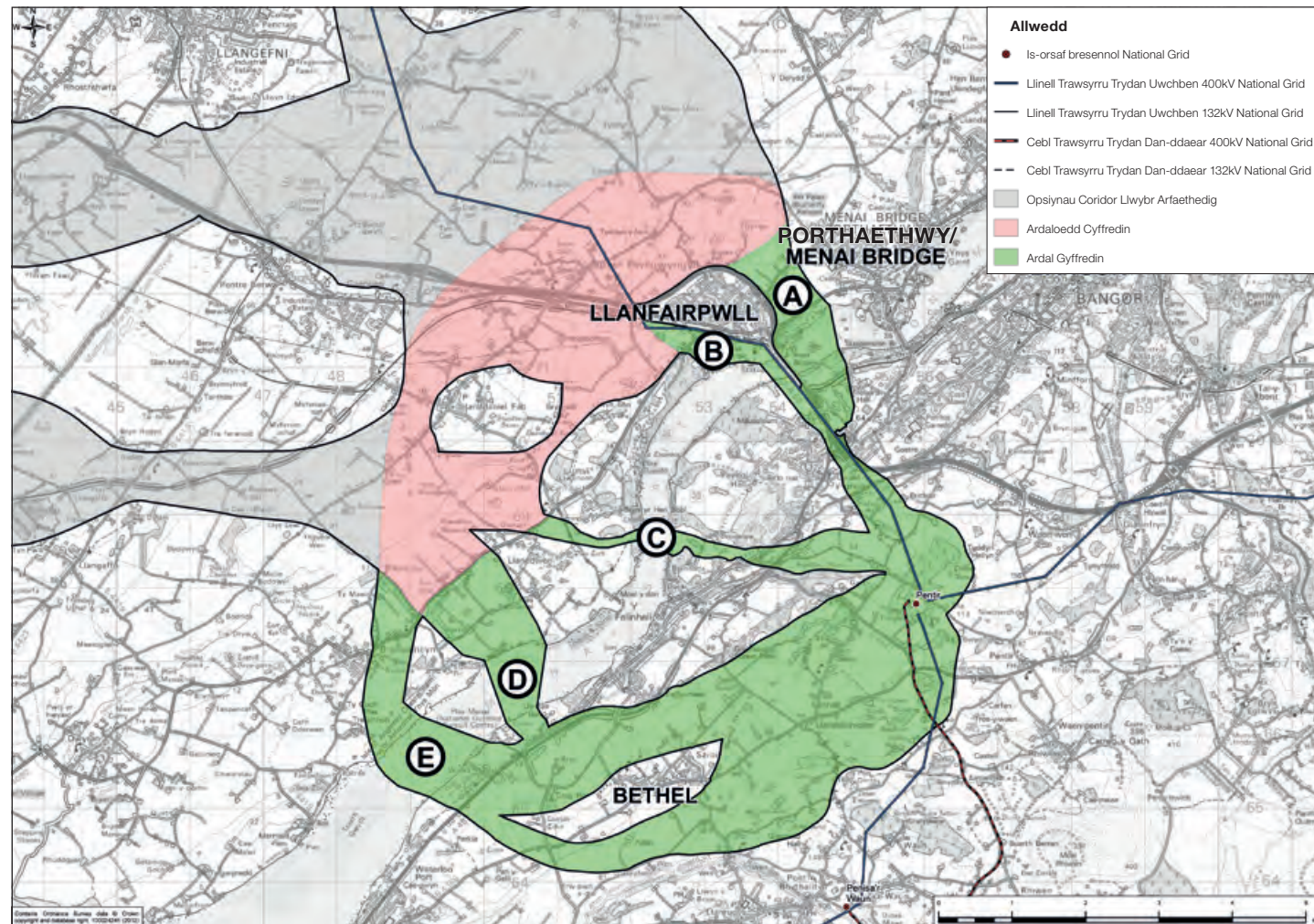
Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 5-7** yn **Ffurflen Adborth Wylfa-Pentir**.

**Bydd angen i'r holl goridorau llwybr rydym wedi'u cynnig groesi Afon Menai. Mae sut bydd National Grid yn ei chroesi yn arwain at nifer o ystyriaethau amgylcheddol, technegol ac economaidd pwysig.**

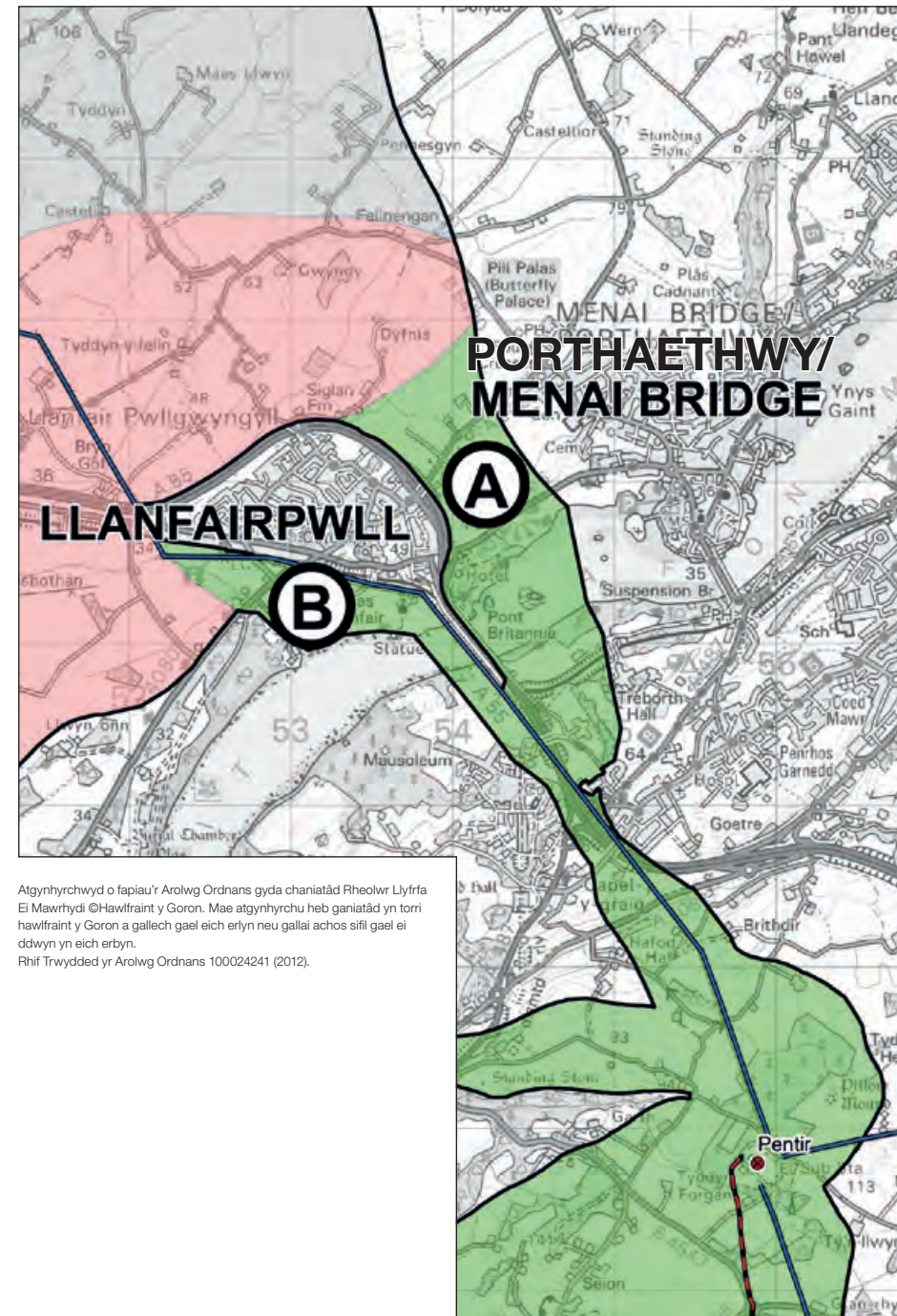
Yn ystod cam cyntaf ein hymgyngoriad, hoffem gael eich barn ar bump opsiwn yr ydym wedi'u pennu, sef A i E isod. Mae'r holl opsiynau hyn yn seiliedig ar ein dewis rhagarweiniol ar gyfer cysylltiad uwchben ychwanegol. Os datblygir y dewis strategol hwn, dim ond un opsiwn ar gyfer croesi'r afon fydd yn cael ei ddatblygu yn y pen draw.

Mae'r mesurau posibl ar gyfer lleihau effaith llinell uwchben yn cynnwys:

- Alinio a llwybro gofalus
- Sgrinio, tirlunio a phlannu
- Defnyddio gwahanol ddyluniadau o dyrau, a allai gynnwys peilonau 'uchder isel' a/neu y 'peilonau-T'
- Ei rhoi o dan y ddaear lle bo hynny'n briodol
- Tynnu'r seilwaith trawsyrru neu ddsbarthu presennol.



Atgynhyrwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrhydi ©Hawlfraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawlfraint y Goron a gallech gael eich erlyn neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



Atgynhyrwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrhydi ©Hawlfraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawlfraint y Goron a gallech gael eich erlyn neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).

**Opsiwn A**

Mae'r man croesi hwn yn rhedeg rhwng aneddiadau Porthaehtwy a Llanfairpwll, yn croesi Afon Menai i'r dwyrain o Bont Britannia ac yn teithio i'r de ddwyrain i is-orsaf Pentir.

- **Lled Afon Menai yn y man croesi:** 400m
- **Cyfanswm lled y coridor croesi:** 850m
- **Yn y coridor croesi fe geir:**
  - Pum Heneb Restredig;
  - Dau Safle o Ddiddordeb Gwyddonol Arbennig;
  - Afon Menai sy'n Ardal Gadwraeth Arbennig;
  - Pump adeilad rhestredig mewn tirwedd hanesyddol;
  - Dwy ardal o Goetir Hynafol;
  - Tir yr Ymddiriedolaeth Genedlaethol;
  - Mae'n croesi drwy Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn.

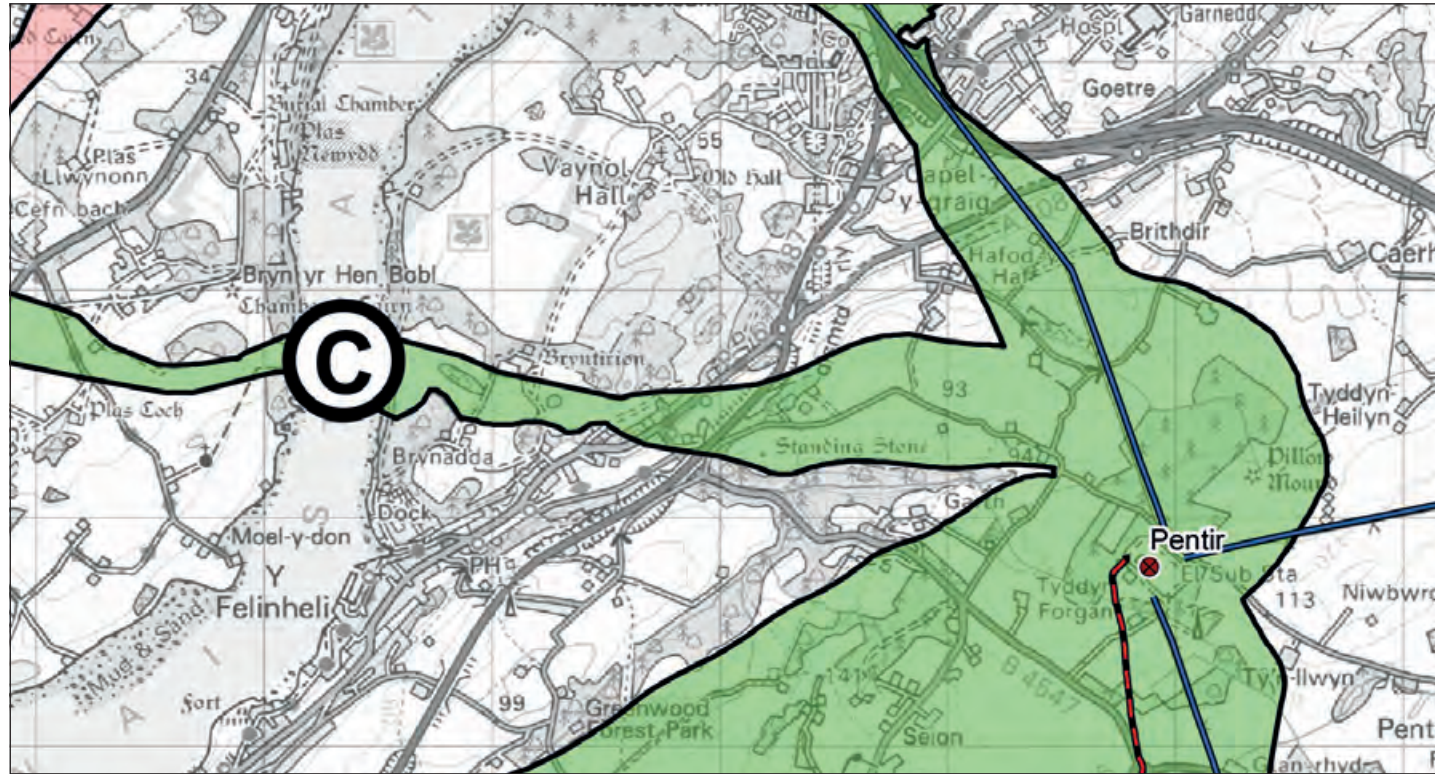
**Opsiwn B**

Mae'n rhedeg o'r de orllewin i Lanfairpwll, yn croesi Afon Menai i'r gorllewin o Bont Britannia ac yn teithio i'r de ddwyrain i is-orsaf bresennol Pentir.

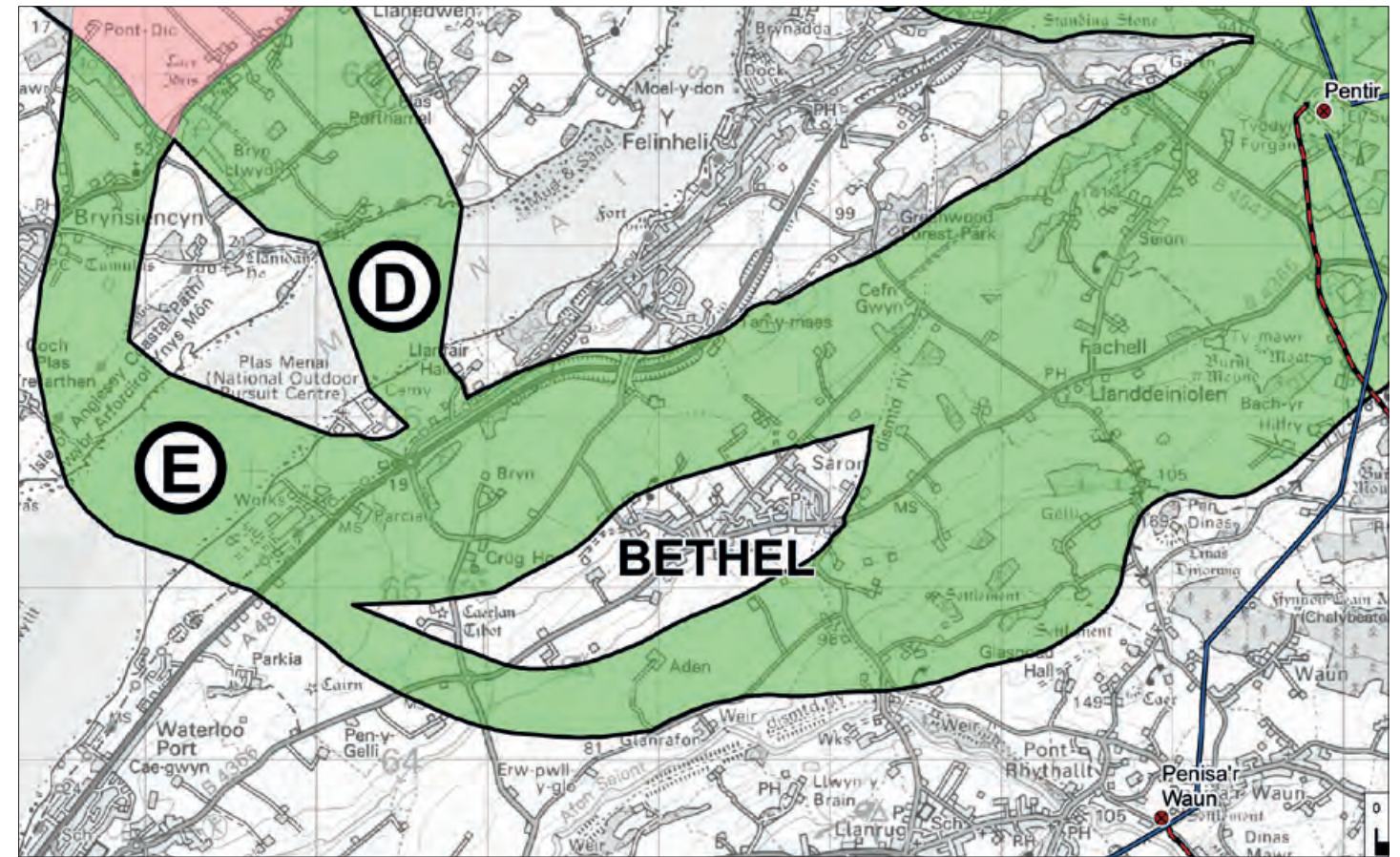
- **Byddai'n rhedeg yn gyfochrog â'r llinell uwchben gyfredol sy'n croesi Afon Menai**
- **Lled Afon Menai yn y man croesi:** 230m
- **Cyfanswm lled y coridor croesi:** 200m
- **Yn y coridor croesi fe geir:**
  - Un Heneb Restredig;
  - Un Safle o Ddiddordeb Gwyddonol Arbennig;
  - Afon Menai, sy'n Ardal Gadwraeth Arbennig ac yn y rhan hon mae dyfroedd dynodedig ar gyfer pysgod cregyn;
  - Pedwar adeilad rhestredig mewn tirwedd hanesyddol;
  - Un ardal o Goetir Hynafol;
  - Tir yr Ymddiriedolaeth Genedlaethol;
  - Un ardal o Goetir Hynafol (Gardd a Pharc Cofrestredig Plas Newydd) a thir yr Ymddiriedolaeth Genedlaethol;



Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 5-7** yn **Ffurflen Adborth Wylfa-Pentir**.



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa El Mawrhydi ©Hawlfraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawlfraint y Goron a gallech gael eich erlyn neu gallai achos siffr gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa El Mawrhydi ©Hawlfraint y Goron. Mae atgynhyrchu heb ganiatâd yn torri hawlfraint y Goron a gallech gael eich erlyn neu gallai achos siffr gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).

### Opsiwn C

Mae'n rhedeg tuag at y dwyrain o Lanedwen gan groesi Afon Menai i'r gogledd o'r Felinheli. Mae'n parhau tuag at y dwyrain ar draws yr A487 cyn troi am y de i gyrraedd is-orsaf Pentir. Mae'r opsiwn hwn yn croesi stadau Plas Newydd a'r Faenol

- **Lled Afon Menai yn y man croesi:** 350m
- **Cyfanswm lled y coridor croesi:** 300m
- **Yn y coridor croesi fe geir:**
  - Dwy Heneb Restredig;
  - Afon Menai, sy'n Ardal Gadwraeth Arbennig ac yn y rhan hon mae dyfroedd dynodedig ar gyfer pysgod cregyn;
  - Un adeilad rhestredig mewn tirwedd hanesyddol;
  - Dau barc a gerddi hanesyddol;
  - Tir yr Ymddiriedolaeth Genedlaethol;
  - Mae'n croesi drwy Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn.

### Opsiwn D

O Ysgubor Fawr mae'r coridor yn mynd tua'r de cyn croesi Afon Menai a chyrraedd y tir mawr rhwng y Ganolfan Gweithgareddau Awyr Agored genedlaethol a Neuadd Llanfair. Wedyn mae'n mynd i gyfeiriad y gogledd ddwyrain, i'r gogledd o Fethel, tuag at Pentir. Dyma un o'r mannau croesi hiraf a byddai'n rhaid defnyddio peilonau talach.

- **Lled Afon Menai yn y man croesi:** 850m
- **Cyfanswm lled y coridor croesi:** 800m
- **Yn y coridor croesi fe geir:**
  - Dwy Heneb Restredig;
  - Afon Menai, sy'n Ardal Gadwraeth Arbennig ac yn y rhan hon mae dyfroedd dynodedig ar gyfer pysgod cregyn;
  - Un adeilad rhestredig mewn tirwedd hanesyddol;
  - Un ardal o Goetir Hynafol;
  - Mae'n croesi drwy Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn.

### Opsiwn E

Mae'r coridor yn cychwyn i'r gogledd ddwyrain o Frynsiencyn cyn mynd at y de i Afon Menai. Mae'n croesi Afon Menai i gyfeiriad dwyreiniol gan ddod i'r tir mawr wrth y gwaith carthffosaeth. Dyma un o'r mannau croesi hiraf a byddai'n rhaid defnyddio peilonau talach.

Mae'n ymrannu, gydag un opsiwn yn rhedeg i'r gogledd o Fethel ac un arall yn rhedeg i'r de, cyn dod allan i'r dwyrain o Fethel a mynd i gyfeiriad y gogledd ddwyrain tuag at Pentir.

- **Lled Afon Menai yn y man croesi:** 900m
- **Cyfanswm lled y coridor croesi:** 1 km
- **Yn y coridor croesi fe geir:**
  - Pum Heneb Restredig;
  - Afon Menai, sy'n Ardal Gadwraeth Arbennig ac yn y rhan hon mae dyfroedd dynodedig ar gyfer pysgod cregyn;
  - Chwe adeilad rhestredig mewn tirwedd hanesyddol;
  - Dwy ardal o Goetir Hynafol;
  - Mae'n croesi drwy Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn.



## AM RAGOR O WYBODAETH

Drwy gydol y llyfryn hwn rydym wedi cyfeirio at nifer o ddogfennau pwysig a fydd yn eich helpu i ddod o hyd i ragor o wybodaeth am brosiect Cysylltiad Gogledd Cymru. Ceir crynodeb ohonynt isod:

### **Need Case (Saesneg yn unig):**

Mae'n egluro pam mae angen y prosiect.

### **Strategic Options Report (Saesneg yn unig):**

Mae'n egluro sut rydym wedi dewis a gwerthuso'r dewisiadau roeddem wedi'u hystyried ar gyfer cysylltu'r prosiectau cynhyrchu ynni newydd arfaethedig.

### **Wylfa-Pentir Initial Route Corridor Report (Saesneg yn unig):**

Mae'n trin ac yn trafod ac yn nodi'r coridorau llwybr uwchben rhagarweiniol posibl a'r dewisiadau ar gyfer croesi Afon Menai rhwng Wylfa a Phentir.

## Dogfennau eraill

Ceir hefyd nifer o ddogfennau pwysig eraill sy'n darparu gwybodaeth am ein gwaith arfaethedig yng Ngogledd Cymru.

### **Cwestiynau Cyffredin:**

Atebion i gwestiynau a ofynnir yn aml.

### **West Gwynedd Substation Siting Study (Saesneg yn unig):**

Mae'n trin ac yn trafod ac yn nodi dewisiadau safle addas ar gyfer is-orsaf yng Ngorllewin Gwynedd.

### **Glaslyn Estuary Route Corridor Report (Saesneg yn unig):**

Mae'n archwilio ein dewis rhagarweiniol ar gyfer cysylltiad tanddaearol, ac mae'n nodi'r coridor llwybr arfaethedig ac aliniad posibl y llwybr yn Aber Afon Glaslyn.

### **Our approach to the design and routeing of new electricity transmission lines (Saesneg yn unig):**

Gellir lawrlwytho copiâu o'r dogfennau hyn o'n gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Gellir lawrlwytho copiâu o'r dogfennau hyn o'n gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copiâu ar gael hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid, y mae eu manylion isod.

## CYSYLLTU Â NI

Rhadffôn: **0800 990 3567** Mae'r llinellau ar agor rhwng 9:00am a 5:00pm o ddydd Llun i ddydd Gwener

Anfon e-bost at: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)

Ysgrifennu at ein cyfeiriad rhadbost yn: **FREEPOST NATIONAL GRID NW CONNECTION**

## Feedback Form Explanation Booklet

## North Wales Connection

Autumn 2012



National Grid has launched its first stage of consultation on proposals to connect significant new electricity generation in North Wales.

Your feedback is extremely important to help inform the decisions we make. That is why we want to encourage as many people as possible to take part in our consultation.

Thank you in advance for your time, we look forward to hearing your views.

## HOW TO USE THIS BOOKLET

This booklet is designed to be used alongside the **Wylfa-Pentir Feedback Form** and is intended to help everyone give feedback that is as informed as possible.

Please take some time to read this document, and then have it to hand when you complete your feedback form.

This booklet contains a summary of our **Strategic Options Report**, which has been undertaken to identify our preliminary preferred option for connecting the proposed new energy generation in North Wales to our network. This summary will help you answer **questions 1-2** in the feedback form.

This booklet also contains a summary and maps of each of the route corridor and crossing options we have brought forward for consultation and these will help you answer **questions 3-7** in the feedback form.

On the back page you can find details of where you can obtain copies of all of the documents referred to in this booklet, and how you can contact us with any questions you may have.



## CONTENTS

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<b>Page 6 – 7</b>	Overview map of route corridors between Wylfa and Pentir
<b>Page 8 – 9</b>	Route corridor options – Purple and Yellow
<b>Page 10 – 11</b>	Route corridor options – Blue and Orange
<b>Page 12 – 13</b>	Menai Strait crossing options A and B
<b>Page 14 – 15</b>	Menai Strait crossing options C, D and E
<b>Page 16</b>	For more information / Contact us

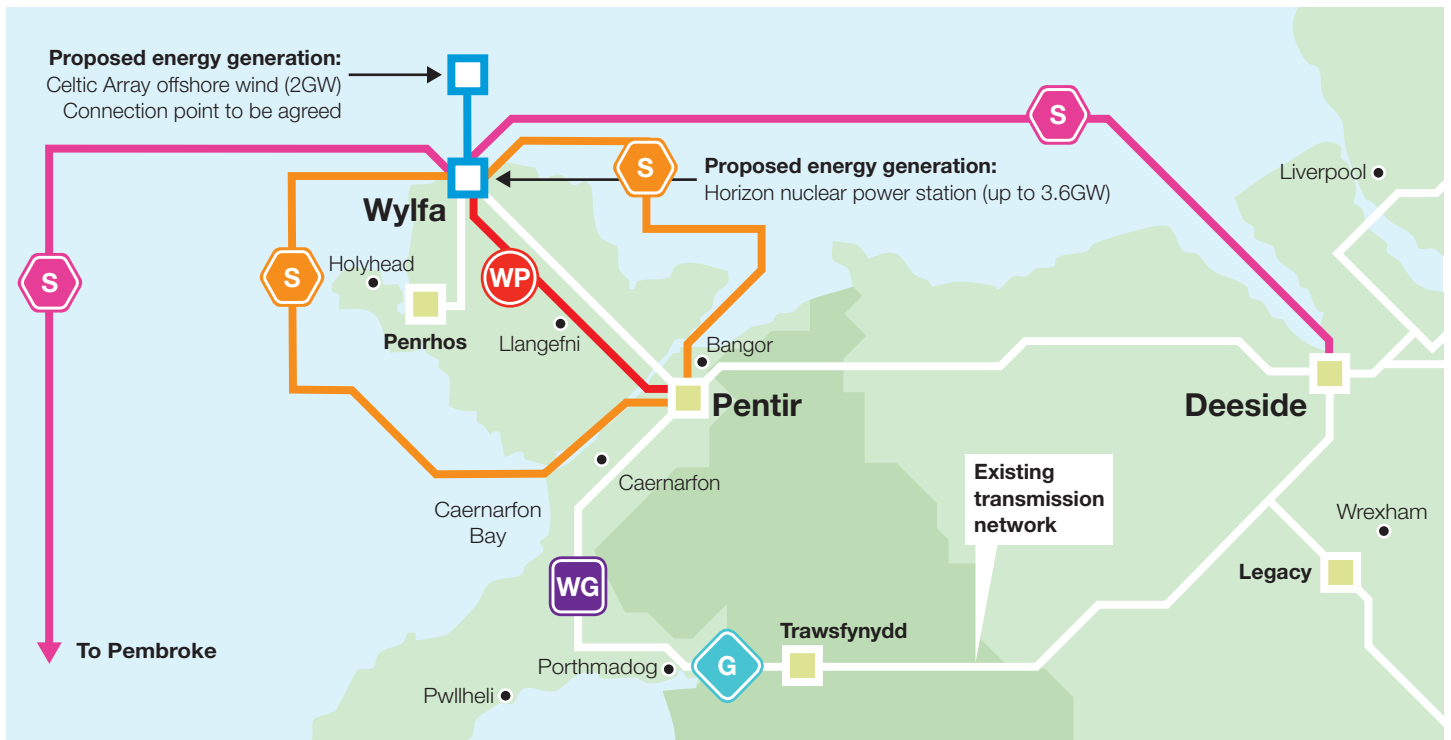
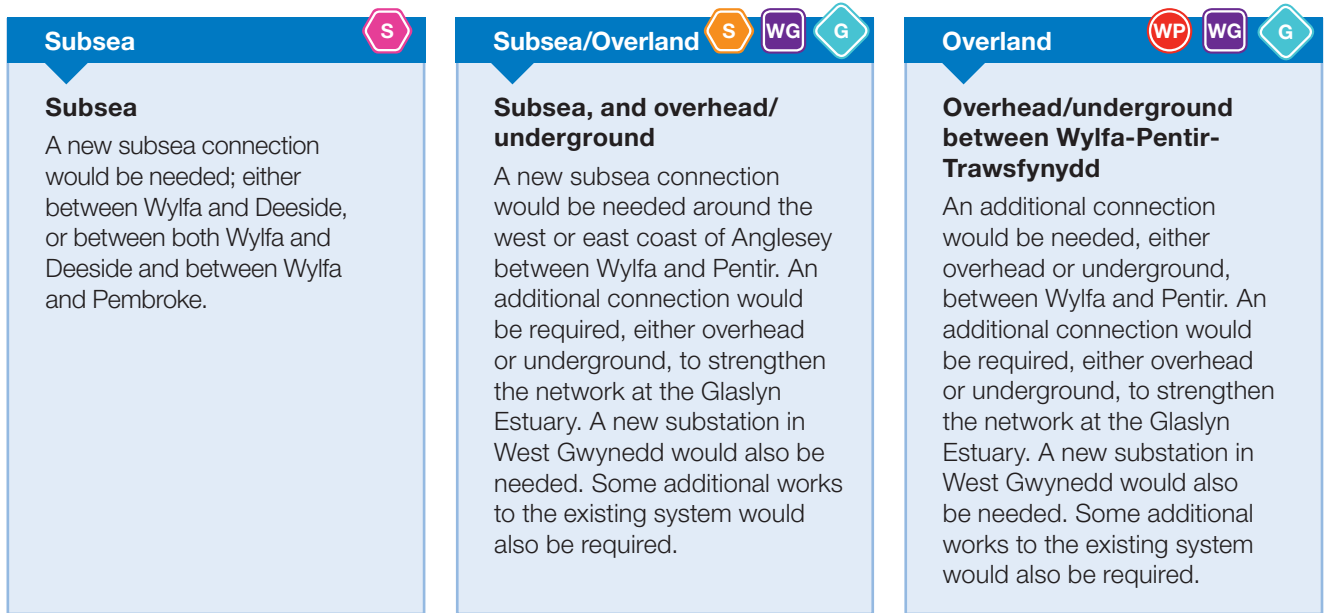
# THE CONNECTION OPTIONS WE CONSIDERED

The information on these pages will help you answer **questions 1-2** in the **Wylfa – Pentir Feedback Form**.

**To identify the best way to connect the proposed new energy generation in North Wales, National Grid undertakes a process to identify ‘strategic options’.**

During this process, we identified a large number of potential ways to connect the new electricity generation proposed in North Wales to the electricity network. These were subsea, overland, or a combination of both and are summarised below.

**The diagram below sets out of all of the different connections options we assessed:**



You can find out more about the approach National Grid takes when connecting new energy generation by reading ‘Our approach to the design and routing of new electricity transmission lines’. You can also find out more information about the different options we considered for connecting the proposed electricity generation in North Wales by reading our ‘Strategic Options Report’.

# REVIEW OF CONNECTION OPTIONS

Each of the strategic options we identified were then reviewed against environmental and community effects, technical feasibility and whole life costs:

## Subsea – HVDC/AC



- For subsea connections to Deeside or Pembroke, National Grid would need to use HVDC (High Voltage Direct Current) cables. For a subsea connection to Pentir, we could use either HVDC or AC (Alternating Current) cables, due to the distance being much shorter.
- There are environmental considerations when laying subsea cables. However, these can often be reduced or avoided by careful routeing.
- HVDC is an evolving technology. There are no HVDC systems of this capacity installed anywhere in the world. For both options this represents a technical and financial risk.
- For HVDC connections, new converter stations would be required at the ends of each connection. A typical converter station is the size of a large DIY warehouse.
- Capital costs are estimated at between £1.6 billion and £2 billion for HVDC, and between £2.2 and £2.5 billion for AC subsea connections. Cost is important as it is ultimately passed on to the public through energy bills.

**Taking into account these considerations, a subsea option is not our preliminary preferred connection option.**

## Overhead/Underground between Wylfa and Pentir



- The effects of a wholly underground route would be largely limited to the construction phase.
- The visual and landscape effect of an overhead line is recognised, but National Grid believes it would be possible to reduce/avoid this with options including careful routeing, planting and screening or consideration of putting sections of the connection underground.
- The total cost of the project, including 40 km of underground cable, would be approximately £1.7 billion. That is £923 million more than the equivalent project based on an overhead line route.

**Taking into account these considerations, National Grid's preliminary preference is for an overhead connection.**

## Substation in West Gwynedd



For all options (aside from subsea HVDC), a new substation in West Gwynedd would be needed to maintain reliable supplies to the area.

## Overhead/Underground at the Glaslyn Estuary



- The effects of a wholly underground route would be largely limited to the construction phase.
- The existing connection at the Glaslyn Estuary is already underground.
- A wholly overhead connection would have a high landscape and visual impact, particularly with regard to Snowdonia National Park.
- A wholly underground connection would be 6 km long and would cost £132 million. That is £121 million more than an overhead connection.

**Taking into account these considerations, National Grid's preliminary preference is for an underground connection at the Glaslyn Estuary.**



## OUR PRELIMINARY PREFERRED OPTION

The information on these pages will help you answer **questions 1-2** in the **Wylfa-Pentir Feedback Form**.

Following the strategic options process, our preliminary preferred option is for an overland connection, which consists of three key packages of work. These include an additional overhead connection between Wylfa and Pentir, a new substation in West Gwynedd, and an additional underground connection at the Glaslyn Estuary.

Between Wylfa, Anglesey and Pentir, Gwynedd

WP



### Work proposed

An additional overhead connection between Wylfa and Pentir.

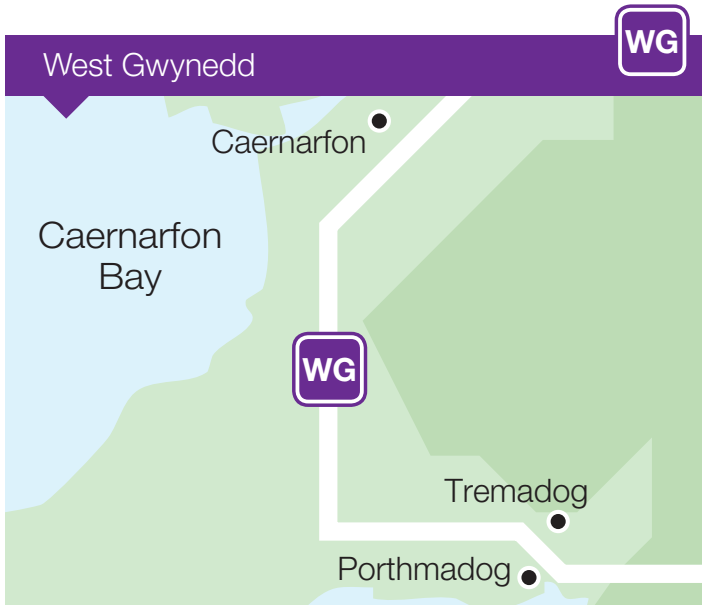
### Why it's needed

To connect new low-carbon generation sources to the existing network in North Wales.

### Have your say

We would like your views on our preliminary preference for an overhead connection. We would also like your views on the route corridors we have identified and any areas of sensitivity.

## OUR PRELIMINARY PREFERRED OPTION - OTHER KEY WORKS



### Work proposed

A new substation in West Gwynedd.

### Why it's needed

To strengthen the network and ensure reliable supplies are maintained in the area, including to the Llŷn Peninsula.

### Have your say

We would like your views on the three potential substation sites we have identified.



### Work proposed

An additional underground connection to replace and upgrade the existing underground connection.

### Why it's needed

To strengthen the network to be able to handle the increased amount of energy in the system.

### Have your say

We would like your views on our preliminary preference for an underground connection and the route corridor and possible route alignment we have identified.

A number of additional works would also be required to strengthen the electricity network. These would include work on existing overhead lines in North Wales, installation of equipment to boost transmission strength and work on existing substations at Wylfa, Pentir and Trawsfynydd. We do not yet know the full details of these works but as this becomes clearer, we are committed to keeping people fully informed.

As part of this first stage of consultation, we welcome your thoughts and views on our preliminary preferred strategic option. It was chosen as we believe it achieves the best balance between important technical, economic, amenity and environmental considerations when compared with the others we considered. However, we will keep our preferred strategic option under review throughout the consultation process to ensure that the most appropriate option is ultimately taken forward.

## FOR MORE INFORMATION

**A copy of our 'Need Case' and 'Strategic Options Report', as well as 'Our approach to the design and routing of new electricity transmission lines' and other project documents are available for download from:**

**[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)**

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).

# OVERVIEW MAP OF ROUTE CORRIDORS BETWEEN WYLFA AND PENTIR

The information on these pages will help you answer **questions 3-7** in the **Wylfa-Pentir Feedback Form**.

**This map shows all the route corridors National Grid has identified that an additional connection could take.**

A route corridor is a broad width of land within which the new connection could be built. The corridors are very wide in some places (up to 4 km); in others they may be more restricted as a result of constraints such as towns, villages and designated environmental areas.

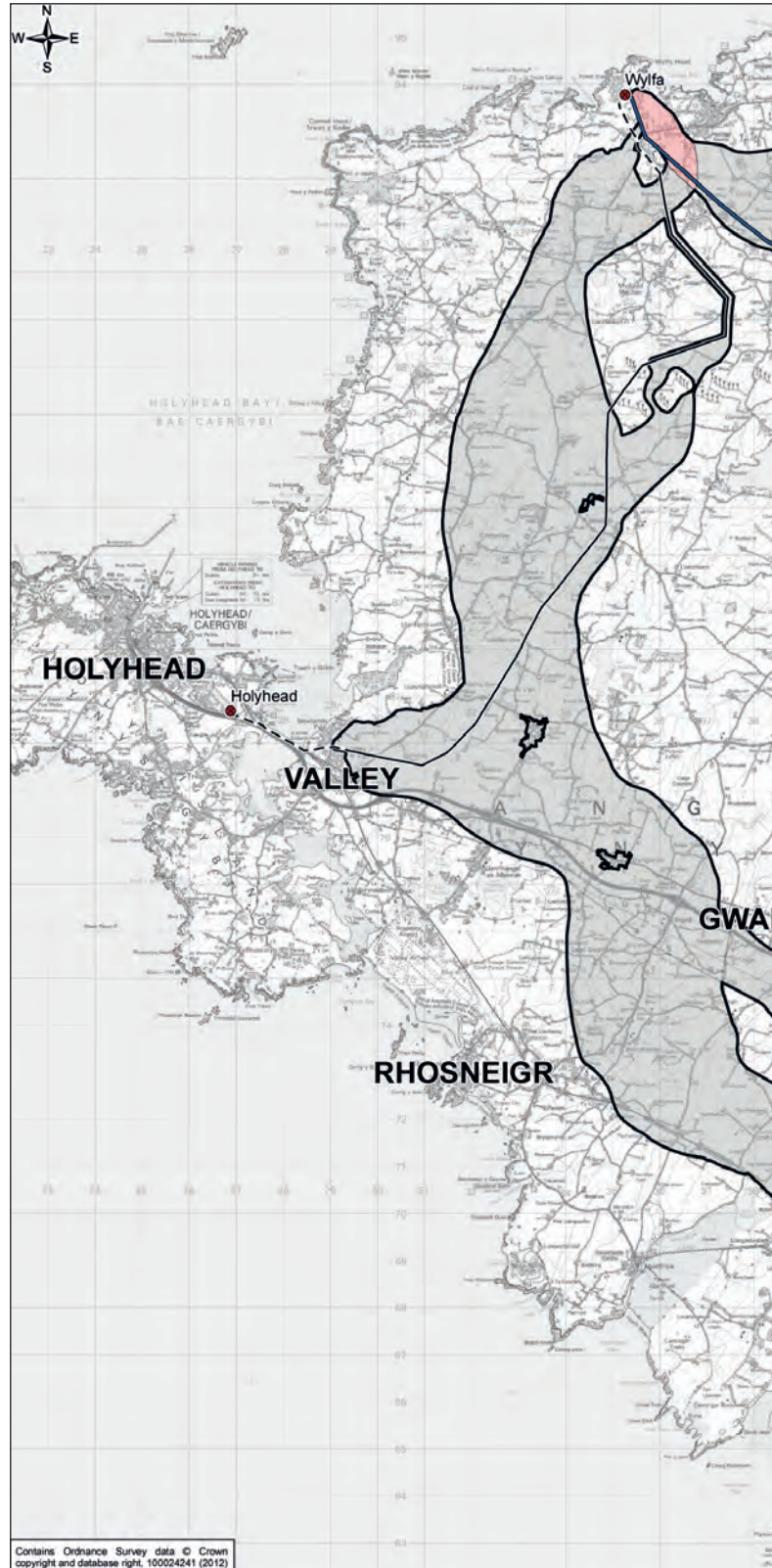
Following an extensive process that considered important social, environmental and technical factors, we have identified:

- Four potential overhead line route corridors across Anglesey, and
- Five potential Menai Strait crossing options

If our preferred strategic option is taken forward, only one route corridor, and one crossing option will ultimately be progressed.

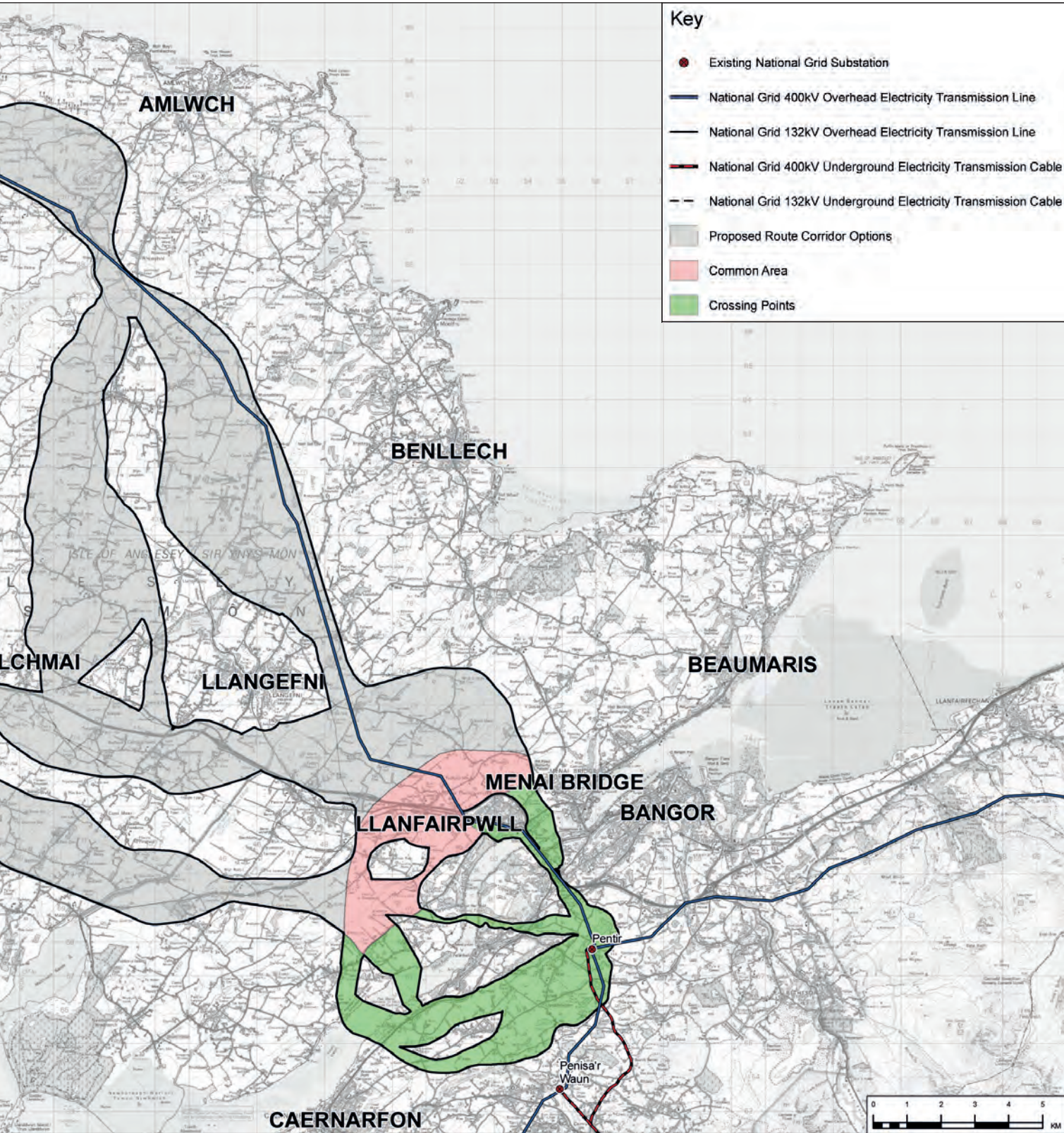
The following pages show maps of each of the four coloured route options and each of the five Menai Strait crossing options we are consulting on in more detail, together with a summary of the characteristics of each.

At the north of the island and towards the south of the island, the corridors converge in 'common areas', marked on the map in pink. Any of the route corridors could be used in conjunction with any of the Menai Strait crossing options (marked in green). Once a preference for a route corridor and Menai Strait crossing option have been identified, the proposed alignment (the actual path the connection could take) in these common areas will be assessed and brought forward for feedback at our next stage of consultation.



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## ROUTE CORRIDOR OPTION (PURPLE)

The information on these pages will help you answer **questions 3, 4 and 7** in the **Wylfa-Pentir Feedback Form**.

**The purple corridor is approximately 33 kilometres in length and presents an option to route the line to the west of the island. It leaves Wylfa in a southerly direction, largely mirroring the direction of the existing 132 kV (local electricity supply) overhead line and A5025 that runs along the West of the island down to the area near Valley and the A55. The corridor then runs toward the southern coast and away from the A55 toward the Menai Strait.**

The purple corridor borders the distinctive landform of Mynydd Mechell at the north and passes (but does not include) the three settlements of Bodedern, Bryngwran and Llanddeusant. It is located close to RAF Valley. Toward the Menai it crosses Malltraeth Marsh at the southern end.

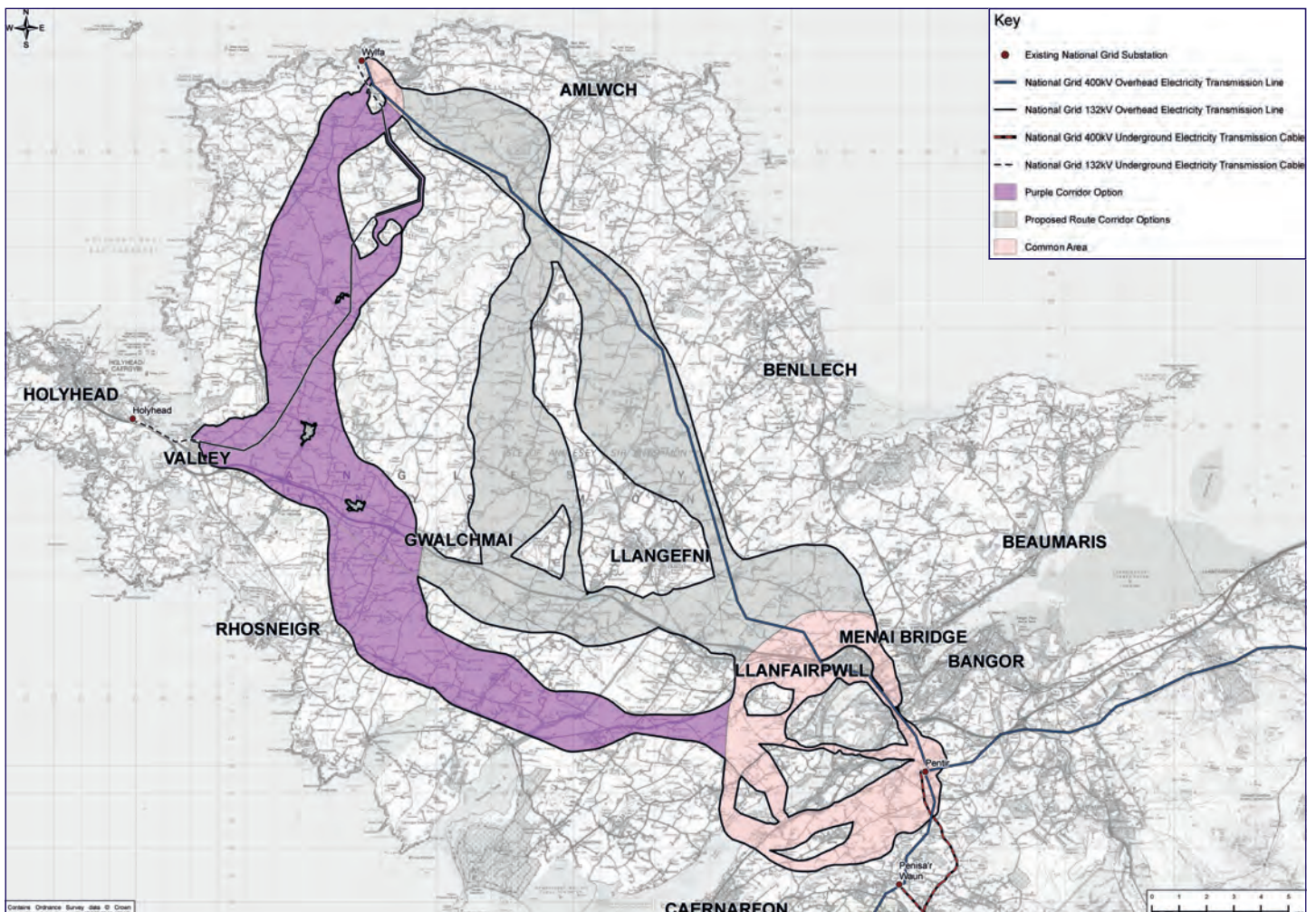
There are no National Landscape designations within this corridor but it does border the Anglesey Area of Outstanding Natural Beauty (AONB) to the west.

Within the corridor, there are:

- Six Sites of Special Scientific Interest (SSSI): Cae Gwyn; Llyn Llygeirian; Salbri; Fferam Uchaf; Llyn Padrig and Malltraeth Marsh.
- Seven Scheduled Monuments: Pen-y-Morwyd Round Barrow; Capel Soar Standing Stone; Tregwehelydd Standing Stone; Bededern Early Christian Cemetery; Bodfeddan Inscribed Stone; Ty-Newydd Burial Chamber and Standing Stones.
- One Area of Outstanding Natural Beauty (AONB): Anglesey AONB.

Potential measures to reduce the effect of an overhead line in the Purple corridor include:

- Careful routeing and alignment
- Screening, landscaping and planting
- Use of alternative tower designs, which could include 'low height' and/or the new 'T-pylon'
- Undergrounding where appropriate
- Removal of existing transmission or distribution infrastructure, for example, we will consider the feasibility of removing the existing 132 kV line between Wylfa and Penrhos.



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## ROUTE CORRIDOR OPTION (YELLOW)

The yellow corridor is approximately 29 kilometres in length and presents an option to route a line to the west of the island. It leaves Wylfa in a southerly direction, largely mirroring the direction of the existing 132 kV overhead line and A5025 that runs along the West of the island down to the area near Valley and the A55. At that point the corridor turns eastwards and broadly follows the line of the A55 and A5 to the Menai.

The corridor passes (but does not include) the three settlements of Bodedern, Bryngwran and Llanddeusant.

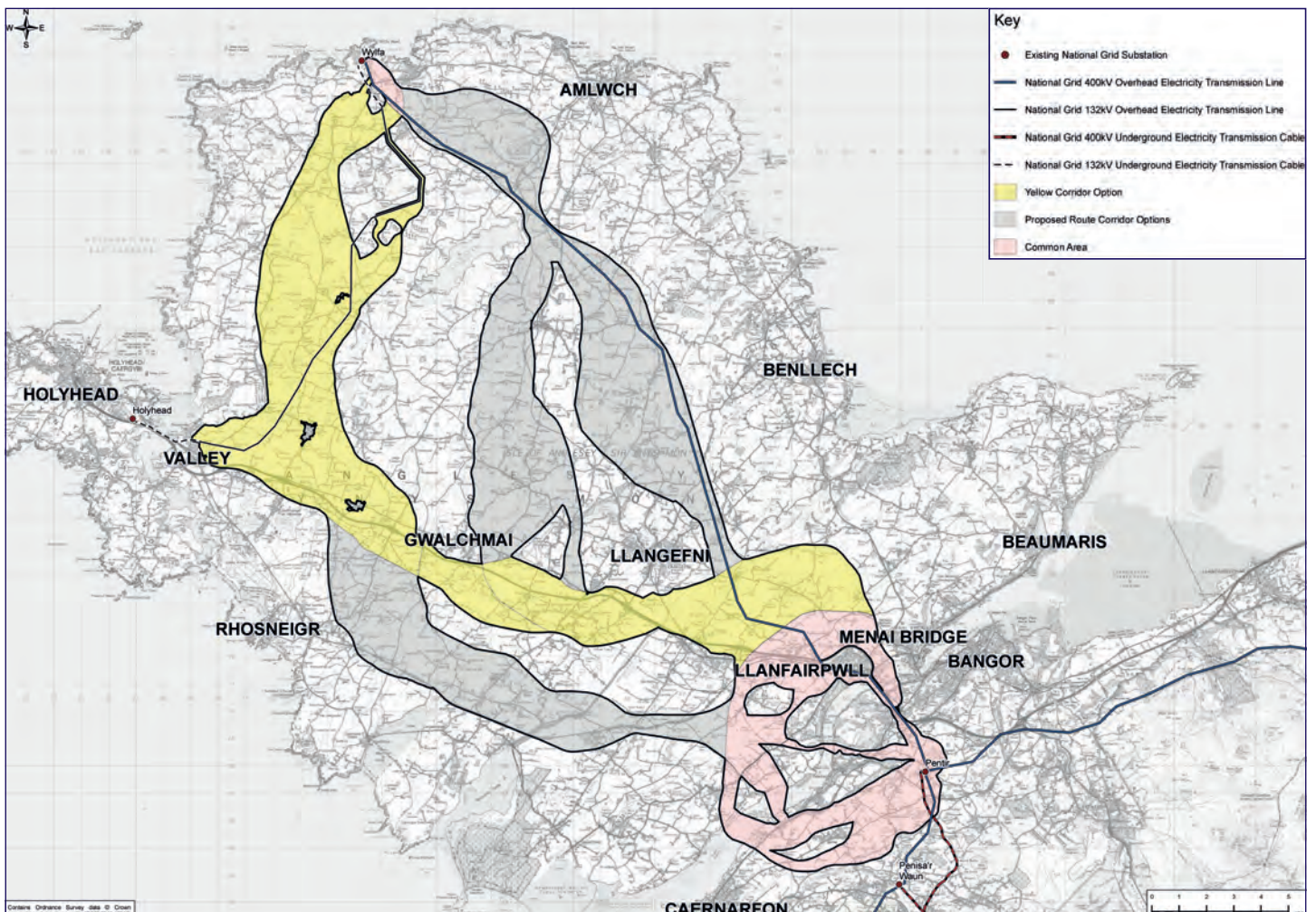
There are no National Landscape designations within this corridor but it does border the Anglesey Area of Outstanding Natural Beauty (AONB) to the west.

Within the corridor, there are:

- Five Sites of Special Scientific Interest (SSSI): Cae Gwyn; Fferam Uchaf; Llyn Llygeirian; Salbri and Malltreath Marsh/Cors Ddyga.
- 11 Scheduled Monuments: Pen-y-Morwyd Round Barrow; Capel Soar Standing Stone; Tregwehelydd Standing Stone; Bodedern Early Christian Cemetery; Graiglas Barrow; Tyddyn Sadler Hut Group; Standing Stones; Mynwent Y Llwyn; Hirdre-Faig Standing Stone; Old Parish Church and Churchyard and Capel Eithin (Site of) and Cemetery.
- One Area of Outstanding Natural Beauty (AONB): Anglesey AONB.

Potential measures to reduce the effect of an overhead line in the Yellow corridor include:

- Careful routeing and alignment
- Screening, landscaping and planting
- Use of alternative tower designs, which could include 'low height' and/or the new 'T-pylon'
- Undergrounding where appropriate
- Removal of existing transmission or distribution infrastructure, for example, we will consider the feasibility of removing the existing 132 kV line between Wylfa and Penrhos.





## ROUTE CORRIDOR OPTION (BLUE)

The information on these pages will help you answer **questions 3, 4 and 7** in the **Wylfa-Pentir Feedback Form**.

**The blue corridor is approximately 28 kilometres in length and presents an option to avoid paralleling the majority of the existing 400 kV and 132 kV overhead lines, through relatively sparsely populated landscape in the centre of the island.**

It leaves Wylfa in the same direction as the existing National Grid 400 kV overhead line and proposed orange corridor, before splitting and running southwards towards RAF Mona. The corridor then passes either side of RAF Mona before turning east along the A55 toward the Menai. It then runs to the north of Malltraeth Marshes and along part of the A55.

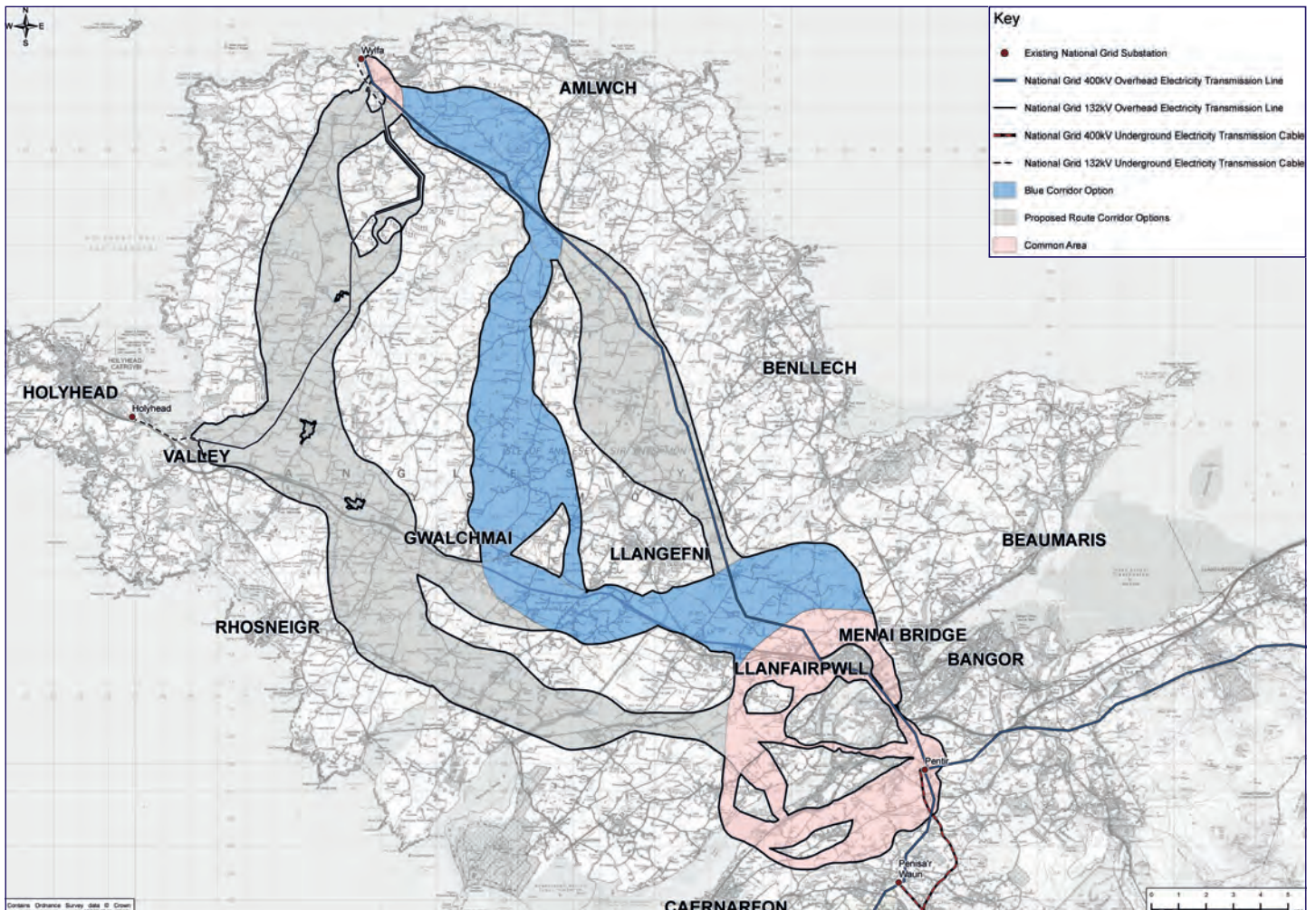
There are no National Landscape designations within this corridor.

Within the corridor, there are:

- Three Sites of Special Scientific Interest (SSSI): Llyn Alaw; Cors Bordwrog and Malltraeth Marsh/ Cors Ddyga.
- Ten Scheduled Monuments: Pen-y-Morwyd Round Barrow; Llifad, Carreglefn; Bodewryd Standing Stone; Graiglas Barrow; Tyddyn Sadler Hut Group; Mynwent y Llwyn; Capel Eithin (site of) and Cemetery; Standing Stone 410m north of Church; Old Parish Church and Church Yards; and Hirdre-Faig Standing Stone.
- The Anglesey Showground.

Potential measures to reduce the effect of an overhead line in the Blue corridor include:

- Careful routeing and alignment
- Screening, landscaping and planting
- Use of alternative tower designs, which could include 'low height' and/or the new 'T-pylon'
- Undergrounding where appropriate
- Removal of existing transmission or distribution infrastructure.



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## ROUTE CORRIDOR OPTION (ORANGE)

The orange corridor is approximately 23 kilometres in length and is broadly based on the route of the existing 400 kV overhead line as it runs from Wylfa power station to Pentir substation.

This corridor is the least densely populated of all those proposed and would present an option to limit impacts on the island to where they already exist as a result of the existing overhead line. It passes in close proximity to Llangefni.

It contains the existing 400 kV line and a number of environmental designations, including a protected wetland and Special Area of Conservation (SAC).

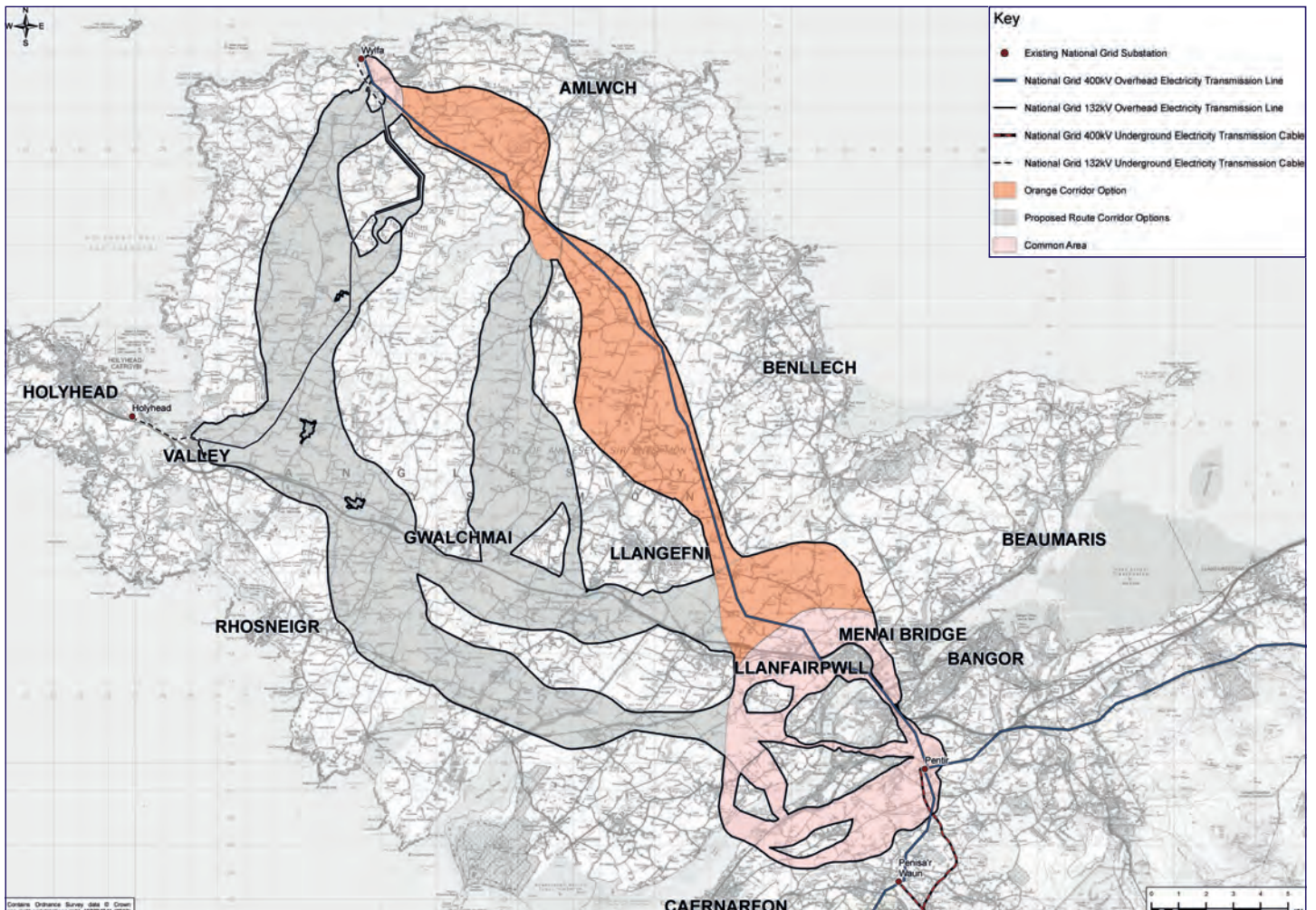
There are no National Landscape designations located within the corridor, but it does border the Anglesey Area of Outstanding Natural Beauty (AONB) to the east.

Within the corridor, there are:

- One wetland of international importance: Anglesey and Llyn Fens.
- One Special Area of Conservation: Anglesey Fens.
- Two Sites of Special Scientific Interest (SSSI): Cors Erddreiniog and Caeau Talwrn.
- One National Nature Reserve: Cors Erddreiniog.
- 11 Scheduled Monuments: Pen-y-Morwyd Round Barrow; Capel Eithin (site of) and Cemetery; Llifad, Carreglefn; Bodewryd Standing Stone; Llys Einion Standing Stone; Maen Chwyf; Careg Leidr; Llech Golman; Maen Addwyn; Hirdri-Faig Standing Stone; and Standing Stone 410m north of Church.

Potential measures to reduce the effect of an overhead line in the Orange corridor include:

- Careful routeing and alignment
- Screening, landscaping and planting
- Use of alternative tower designs, which could include 'low height' and/or the new 'T-pylon'
- Undergrounding where appropriate
- Removal of existing transmission or distribution infrastructure.





# MENAI STRAIT CROSSING OPTIONS – OVERVIEW

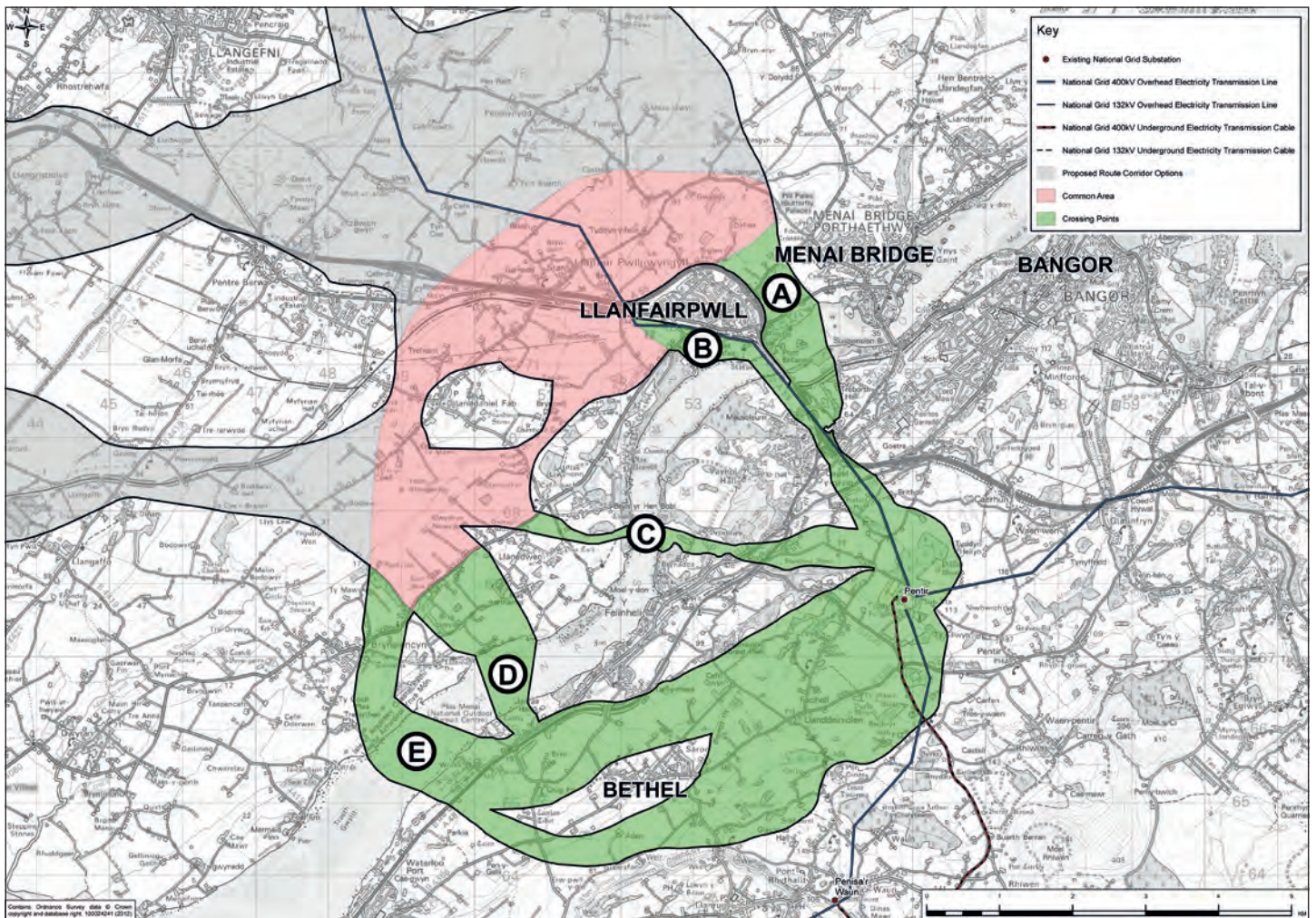
The information on these pages will help you answer **questions 5-7** in the **Wylfa-Pentir Feedback Form**.

**All the route corridors we have brought forward will need to cross the Menai Strait. How National Grid crosses it presents a number of important environmental, technical and economic considerations.**

In our first phase of consultation, we would like your views on five crossing options we have identified, marked A to E below. All of these options are based on our preliminary preference for an additional overhead connection. If this strategic option is taken forward, only one crossing option will ultimately be progressed.

Potential measures to reduce the effect of an overhead line at the crossing points include:

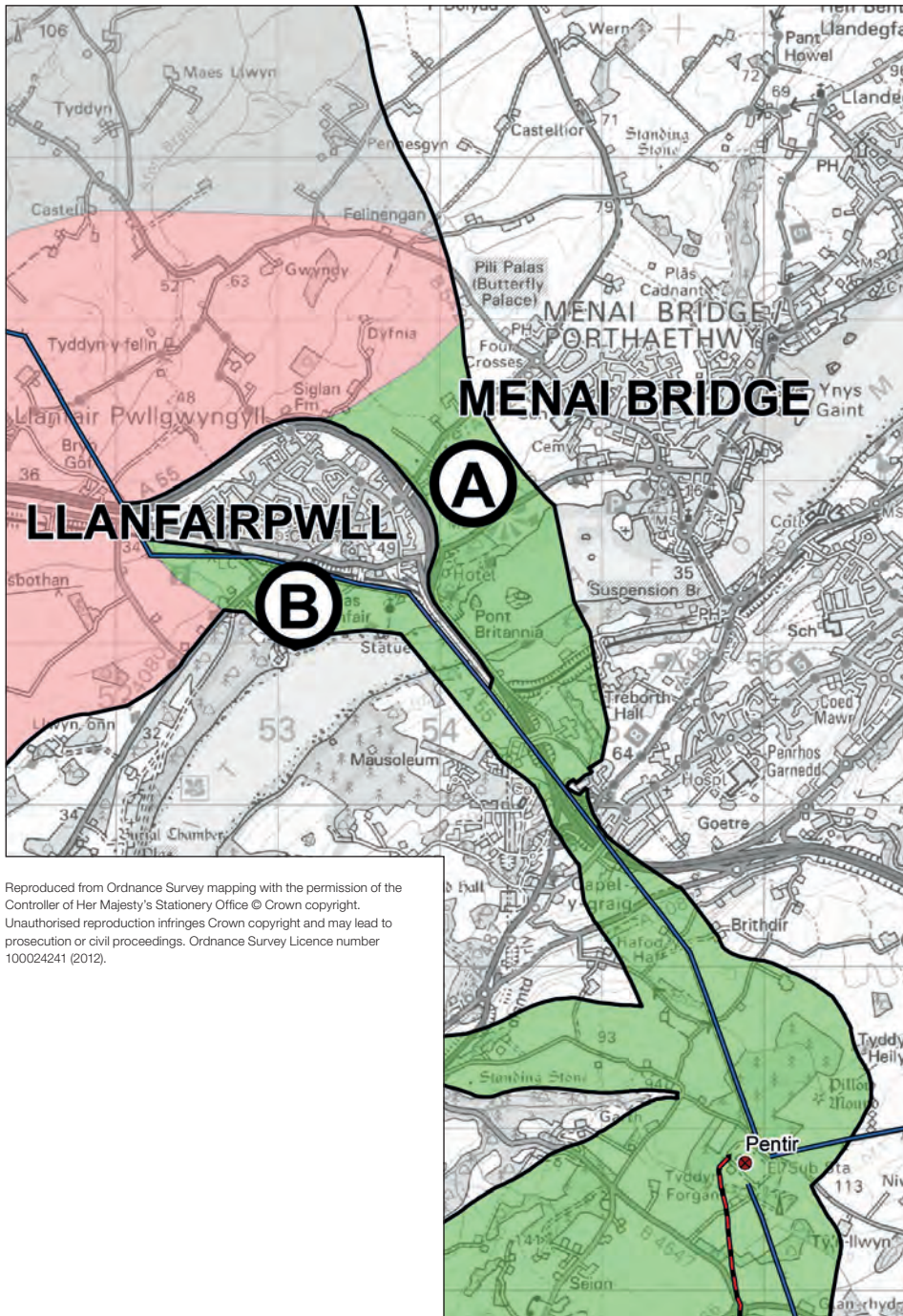
- Careful routing and alignment
- Screening, landscaping and planting
- Use of alternative tower designs, which could include 'low height' and/or the new 'T-pylon
- Undergrounding where appropriate
- Removal of existing transmission or distribution infrastructure.



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# MENAI STRAIT CROSSING OPTIONS – A AND B



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## Option A

This crossing runs between the settlements of Menai Bridge and Llanfairpwll, crosses the Menai Strait east of Britannia Bridge and travels south east to the existing Pentir substation.

- Width of the Menai Strait at the crossing point: 400m
- Total width of crossing corridor: 850m
- The crossing corridor includes within it:
  - Five Scheduled Monuments;
  - Two Sites of Special Scientific Interest;
  - The Menai Strait which is a Special Area of Conservation;
  - Five listed buildings in a historic landscape;
  - Two areas of Ancient Woodland;
  - National Trust land;
  - Crosses through the Anglesey Area of Outstanding Beauty (AONB).

## Option B

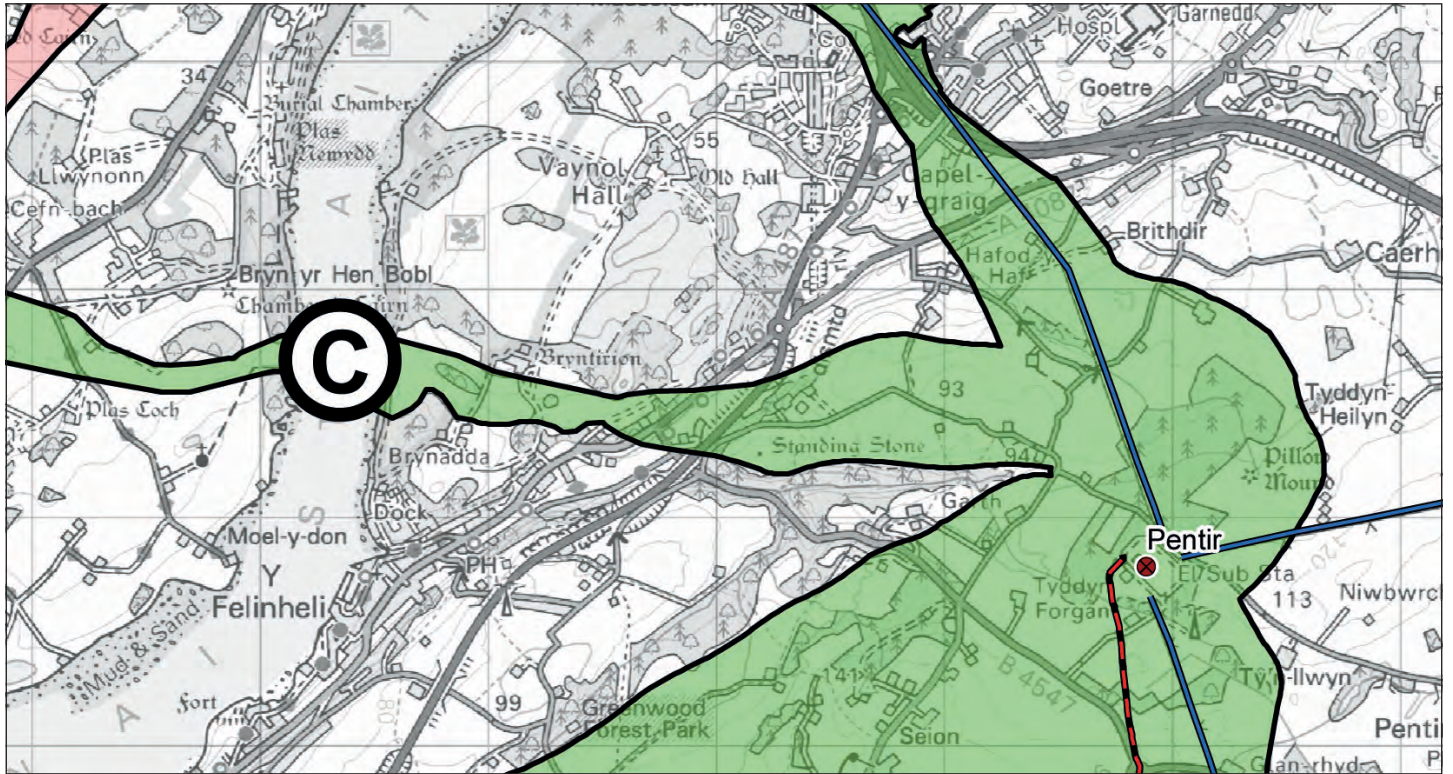
Runs from the south west of Llanfairpwll, crosses the Menai Strait west of Britannia Bridge and travels south east to the existing Pentir substation. Would parallel the existing overhead line crossing of the Menai Strait.

- Would parallel the existing overhead line crossing the Menai Strait
- Width of the Menai Strait at the crossing point: 230m
- Total width of crossing corridor: 200m
- The crossing corridor includes within it:
  - One Scheduled Monument;
  - One Site of Special Scientific Interest;
  - The Menai Strait, which is a Special Area of Conservation and has designated shellfish waters in this location;
  - Four listed buildings in a historic landscape;
  - One area of Ancient Woodland
  - National Trust land;
  - Crosses through the Anglesey Area of Outstanding Beauty (AONB).



## MENAI STRAIT CROSSING OPTIONS – C, D AND E

The information on these pages will help you answer **questions 5-7** in the **Wylfa-Pentir Feedback Form**.



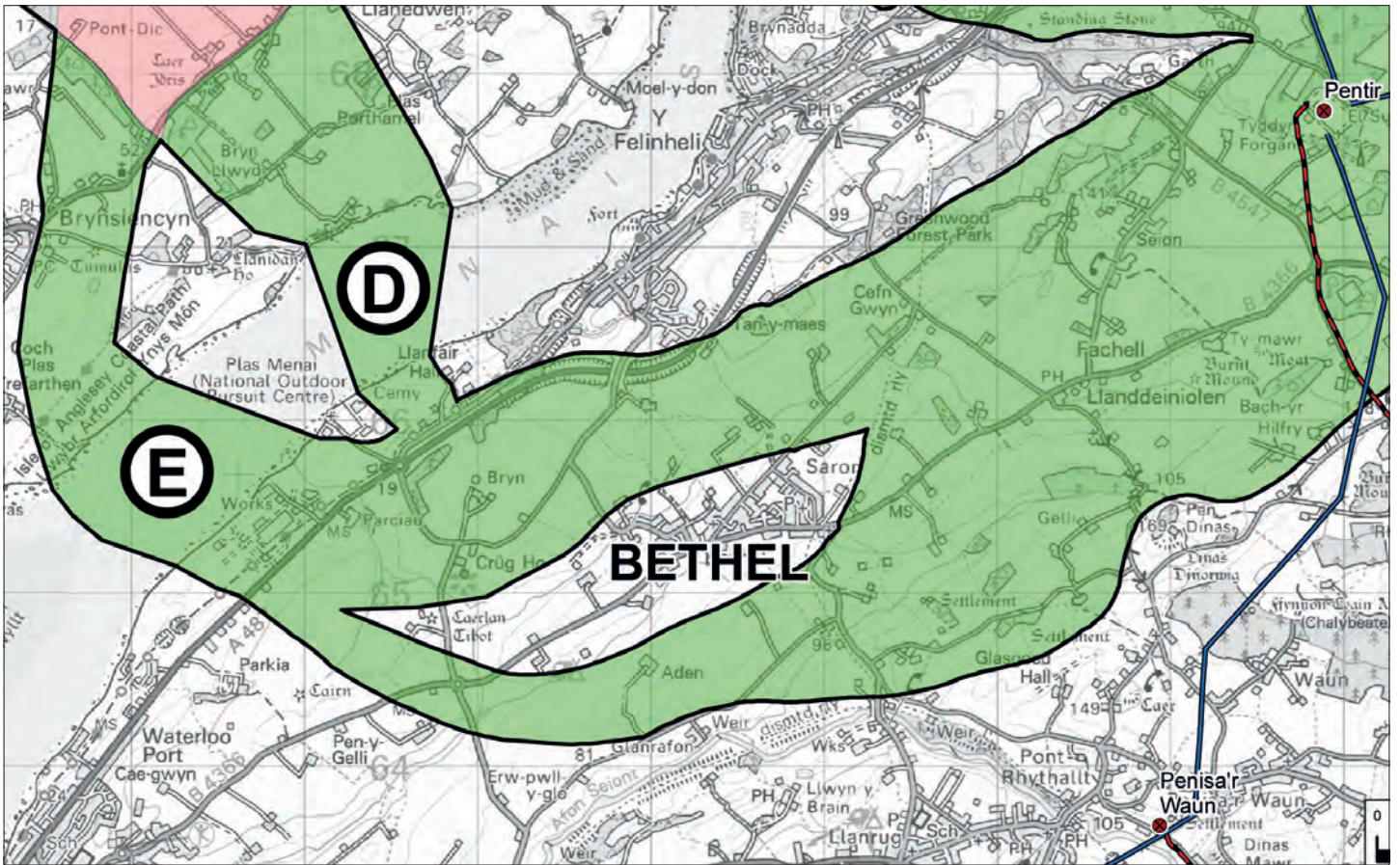
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### Option C

**Runs east from Llanedwen crossing the Menai Strait north of Y Felinheli. It continues east across the A487 before turning south to reach Pentir substation. This option crosses the Plas Newydd and Vaynol estates.**

- **Width of the Menai Strait at the crossing point:** 350m
- **Total width of crossing corridor:** 300m
- **The crossing corridor includes within it:**
  - Two scheduled monuments
  - The Menai Strait, which is a Special Area of Conservation and has designated shellfish waters in this location;
  - One listed building in an historic landscape;
  - Two historic parks and gardens
  - National Trust land;
  - Crosses through the Anglesey Area of Outstanding Beauty (AONB).





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## Option D

From Ysgubor Fawr the corridor runs south before crossing the Menai Strait and reaching the mainland between the national Outdoor Pursuits Centre and Llanfair Hall. It then heads to the north east, north of Bethel, towards Pentir. This is one of the longest Menai Strait crossings, and would require the use of taller pylons.

- **Width of the Menai Strait at the crossing point:** 850m
- **Total width of crossing corridor:** 800m
- **The crossing corridor includes within it:**
  - Two Scheduled Monuments;
  - The Menai Strait, which is a Special Area of Conservation and has designated shellfish waters in this location;
  - One listed building in an historic landscape;
  - One area of Ancient Woodland;
  - Crosses through the Anglesey Area of Outstanding Beauty (AONB).

## Option E

The corridor begins to the north east of Brynsiencyn before running south to the Menai Strait. It crosses the Strait in an easterly direction meeting the mainland at the sewerage works. This is one of the longest Menai Strait crossings, and would require the use of taller pylons.

It splits with one corridor option running north of Bethel and another running along the south, before emerging east of Bethel and heading north east towards Pentir.

- **Width of the Menai Strait at the crossing point:** 900m
- **Total width of crossing corridor:** 1 km
- **The crossing corridor includes within it:**
  - Five Scheduled Monuments;
  - The Menai Strait, which is a Special Area of Conservation and has designated shellfish waters in this location;
  - Six listed buildings in an historic landscape;
  - Two areas of Ancient Woodland;
  - Crosses through the Anglesey Area of Outstanding Beauty (AONB).



## FOR MORE INFORMATION

Throughout this booklet, we have referred to a number of important documents which will help you find out more information about the North Wales Connection Project. These are summarised below:

**Need Case:**

Explains why the project is needed.

**Strategic Options Report:**

Explains our selection and appraisal of the options we considered for connecting the proposed new energy generation.

**Wylfa-Pentir Initial Route Corridor Report:**

Examines and identifies the preliminary potential overhead route corridors and Menai Strait crossing options between Wylfa and Pentir.

## Other documents

There are also a number of other important documents which provide information about our proposed work in North Wales.

**FAQ:**

Answers to Frequently Asked Questions.

**West Gwynedd Substation Siting Study:**

Examines and identifies suitable site options for a substation in West Gwynedd.

**Glaslyn Estuary Route Corridor Report:**

Examines our preliminary preference for an underground connection, and identifies a proposed route corridor and potential route alignment at the Glaslyn Estuary.

**Our approach to the design and routing of new electricity lines:**

Explains the process that National Grid follows when planning new transmission routes.

Copies of these documents can be downloaded from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available from a number of public locations or on request by contacting the National Grid team, details below.

## CONTACT US

Freephone: **0800 990 3567** Lines are open between 9:00am – 5:00pm Monday – Friday

Sending an email to: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

Writing to our freepost address at: **FREEPOST NATIONAL GRID NW CONNECTION**

# Llyfryn Esbonio'r Ffurflen Adborth

## Cysylltiad Gogledd Cymru

Hydref 2012



### Gorllewin Gwynedd

Mae National Grid wedi lansio ei ymgynghoriad ar gynigion i gysylltu'r trydan newydd sylweddol a fydd yn cael ei gynhyrchu yng ngogledd Cymru.

Mae eich adborth yn bwysig iawn i helpu i gyfrannu at y penderfyniadau y byddwn yn eu gwneud. Dyna pam yr ydym am annog cynifer â phosibl o bobl i gyfrannu at ein hymgyngoriad.

Diolch ichi ymlaen llaw am eich amser. Edrychwn ymlaen at glywed eich barn.

## SUT I DDEFNYDDIO'R LLYFRYN HWN

Mae'r llyfryn hwn i'w ddefnyddio ochr yn ochr â **Ffurflen Adborth Gorllewin Gwynedd** a'i fwriad yw helpu pawb i roi adborth sydd wedi'i seilio hyd y bo modd ar wybodaeth.

Rhowch amser i ddarllen y ddogfen hon, a'i chael wrth law pan fyddwch yn llenwi'ch ffurflen adborth.

Mae'r llyfryn hwn yn cynnwys crynodeb o'r '**Strategic Options Report**', a luniwyd i nodi'r dewis rhagarweiniol yr ydym yn ei ffafrio ar gyfer cysylltu'r ynni newydd a fydd yn cael ei gynhyrchu yng Ngogledd Cymru i'n rhwydwaith. Bydd y crynodeb hwn yn eich helpu i ateb cwestiynau 1-2 yn y ffurflen adborth.

Mae'r llyfryn hwn hefyd yn cynnwys crynodeb a map o bob un o'r opsiynau ar gyfer lleoliad is-orsaf yr ydym am ymgynghori yn eu cylch a bydd y rhain yn eich helpu i ateb **cwestiynau 3-4** yn y ffurflen adborth.

Ar y dudalen gefn fe welwch fanylion lle gallwch gael gafael ar gopiau o'r holl ddogfennau y cyfeirir atynt yn y llyfryn hwn, a sut y gallwch gysylltu â ni os oes gennych chi unrhyw gwestiynau.



## CYNNWYS

<b>Tudalen 2 – 5</b>	Crynodeb o'r 'Strategic Options Report'
<b>Tudalen 6 – 7</b>	Map o'r opsiynau ar gyfer lleoli'r is-orsaf
<b>Tudalen 8</b>	Am ragor o wybodaeth / Cysylltu â ni

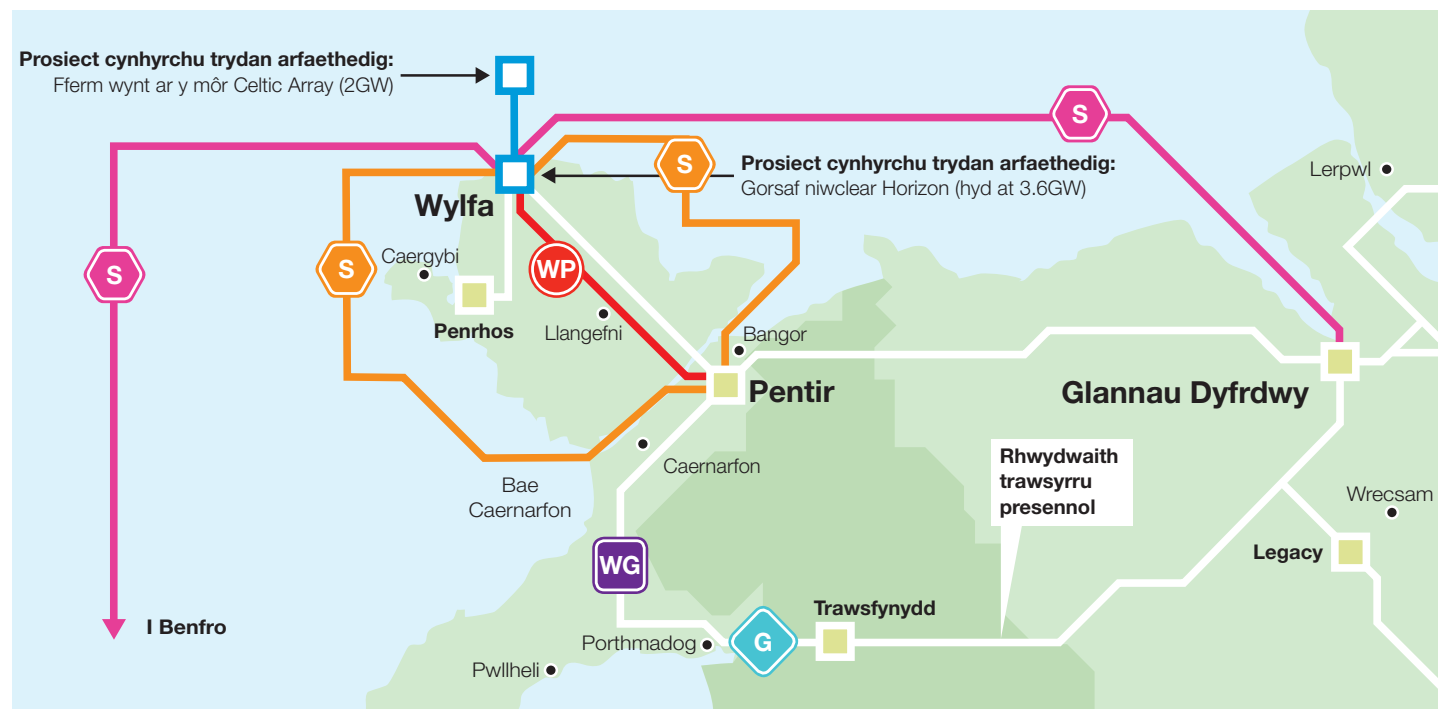
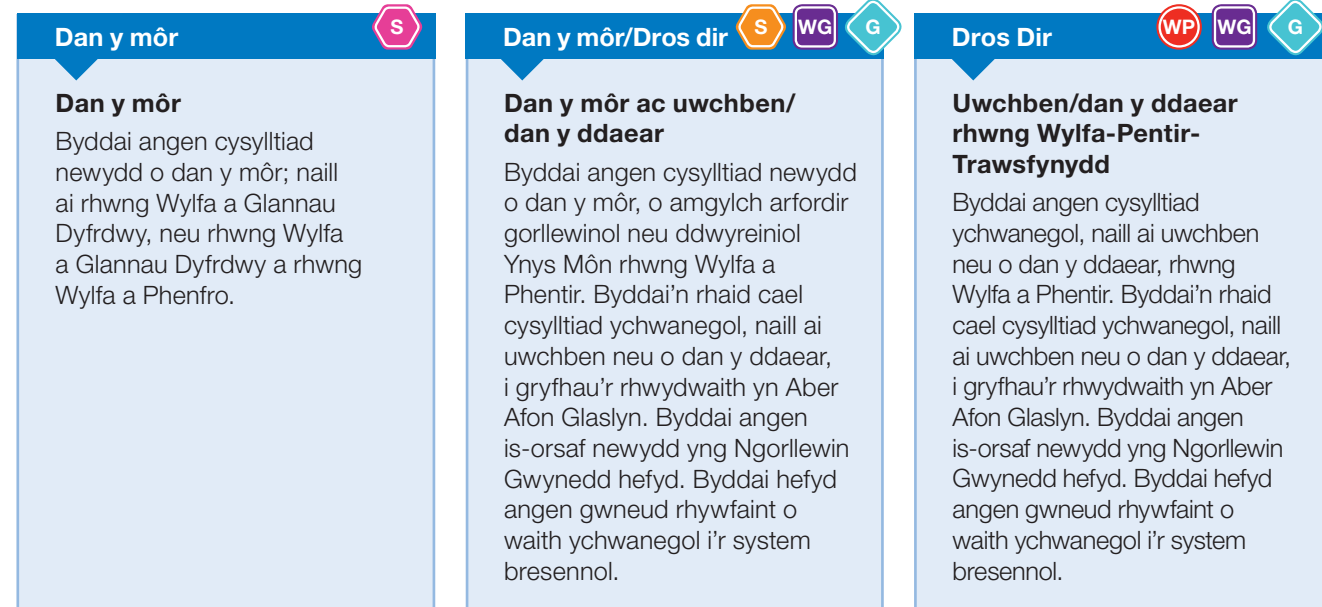
## Y DEWISIADAU CYSYLLTU A YSTYRIWYD GENNYM

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 1-2** yn **Ffurflen Adborth Aber Afon Glaslyn**.

**Er mwyn dod o hyd i'r ffordd orau o gysylltu'r trydan newydd y bwriedir ei gynhyrchu yng Ngogledd Cymru, mae National Grid yn cynnal proses i ddod o hyd i 'ddewisiadau strategol'.**

Yn ystod y broses hon, daethom o hyd i nifer fawr o ffyrdd posibl o gysylltu'r prosiectau cynhyrchu trydan newydd arfaethedig yng Ngogledd Cymru â'r rhwydwaith trydan. Roedd y rhain o dan y môr, dros dir neu'n gyfuniad o'r ddau. Ceir crynodeb ohonynt isod.

**Mae'r diagram isod yn nodi'r holl ddewisiadau cysylltu gwahanol a gafodd eu hasesu gennym:**



Cewch wybod mwy am y dull y mae National Grid yn ei ddefnyddio wrth gysylltu prosiectau trydan newydd drwy ddarllen 'Our approach to the design and routing of new electricity transmission lines' Hefyd, cewch ragor o wybodaeth am y gwahanol opsiynau a gafodd eu hystyried gennym ar gyfer cysylltu'r prosiectau cynhyrchu trydan arfaethedig yng Ngogledd Cymru drwy ddarllen ein 'Strategic Options Report'.

## ADOLYGU'R DEWISIADAU CYSYLLTU

**Wedyn, cafodd pob un o'r dewisiadau strategol eu hadolygu yn erbyn effeithiau amgylcheddol a chymunedol, ymarferoldeb technegol a chostau oes gyfan:**

### Dan y môr – HVDC/AC

- Ar gyfer cysylltiadau o dan y môr i Lannau Dyfrdwy neu Benfro, byddai'n rhaid i National Grid ddefnyddio ceblau HVDC (Cerrynt Uniongyrchol Foltedd Uchel). Ar gyfer cysylltiad o dan y môr i Bentir, gallem ddefnyddio ceblau HVDC neu AC (Cerrynt Eiledol) gan eu bod yn nes o lawer.
- Wrth osod ceblau o dan y môr, rhaid ystyried nifer o faterion amgylcheddol. Serch hynny, yn aml mae modd lleihau neu osgoi'r rhain drwy lwybro gofalus.
- Mae HVDC yn dechnoleg sy'n esblygu. Does dim systemau HVDC o'r capasiti hwn wedi cael eu gosod yn unman arall yn y byd. Ar gyfer y ddau opsiwn, mae hyn yn peri risgiau technegol ac ariannol.
- Mae HVDC yn dechnoleg sy'n esblygu. Does dim systemau HVDC o'r capasiti hwn wedi cael eu gosod yn unman arall yn y byd. Ar gyfer y ddau opsiwn, mae hyn yn peri risgiau technegol ac ariannol.
- Amcangyfrifir bod y costau cyfalaf rhwng £1.6 biliwn a £2 biliwn ar gyfer HVDC, a rhwng £2.2 a £2.5 biliwn ar gyfer cysylltiadau AC o dan y môr. Mae'r gost yn bwysig gan ei bod yn cael ei throsglwyddo i'r cyhoedd yn y pen draw drwy filiau ynni.

**Wrth ystyried hyn i gyd, nid dewis o dan y môr yw'r cysylltiad rhagarweiniol a ffeirir gennym.**

### Uwchben/dan y ddaear rhwng Wylfa a Phentir

- Byddai effeithiau llwybr sy'n gyfan gwbl o dan y ddaear yn cael eu cyfyngu i'r cam adeiladu i raddau helaeth.
- Rydym yn cydnabod effaith weledol llinellau uwchben, ond mae National Grid yn credu y byddai'n bosibl lleihau/osgoi hyn gyda dewisiadau sy'n cynnwys llwybro gofalus, plannu a sgrinio neu ystyried rhoi rhannau o'r cysylltiad o dan y ddaear.
- Bydd cyfanswm cost y prosiect, gan gynnwys 40 km o geblau o dan y ddaear, oddeutu £1.7 biliwn. Mae hynny £923 miliwn yn fwy na'r un prosiect ar sail ceblau uwchben y ddaear.

**Wrth ystyried hyn, y dewis rhagarweiniol a ffeirir gan National Grid yw cysylltiad uwchben.**

### Is-orsaf yng Ngorllewin Gwynedd

Ar gyfer yr holl ddewisiadau (heblaw am HVDC o dan y môr), byddai angen is-orsaf newydd yng Ngorllewin Gwynedd er mwyn cynnal cyflenwadau dibynadwy i'r ardal.

### Uwchben/Dan y ddaear yn Aber Afon Glaslyn

- Byddai effeithiau llwybr sy'n gyfan gwbl o dan y ddaear yn cael eu cyfyngu i'r cam adeiladu i raddau helaeth.
- Mae'r cysylltiad presennol yn Aber Afon Glaslyn eisoes o dan y ddaear.
- Byddai cysylltiad sy'n gyfan gwbl uwchben yn cael effaith weledol a thirwedd fawr, yn enwedig yng nghyswllt Parc Cenedlaethol Eryri.
- Byddai cysylltiad sy'n gyfan gwbl o dan y ddaear yn 6 km o hyd ac yn costio £132 miliwn. Mae hynny £121 miliwn yn fwy na chysylltiad uwchben.

**Wrth ystyried hyn, y dewis rhagarweiniol a ffeirir gan National Grid ar gyfer Aber Glaslyn yw cysylltiad o dan y ddaear.**

## Y DEWIS RHAGARWEINIOL A FFEFRIR GENNYM

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 1-2** yn **Ffurflen Adborth Gorllewin Gwynedd**.

**Yn dilyn y broses dewisiadau strategol, y dewis rhagarweiniol a ffeffrir gennym yw cysylltiad dros dir, sy'n cynnwys tri phegyn gwaith hanfodol. Mae'r rhain yn cynnwys cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir, is-orsaf newydd yng Ngorllewin Gwynedd, a chysylltiad dan y ddaear ychwanegol yn Aber Afon Glaslyn.**

Gorllewin Gwynedd

WG



### Y gwaith arfaethedig

Is-orsaf newydd ger Bryncir.

### Pam mae angen hynny?

I gryfhau'r rhwydwaith a gwneud yn siŵr bod cyflenwadau dibynadwy'n cael eu cynnal yn yr ardal gan gynnwys i Benrhyn Llŷn.

### Dweud eich dweud

Hoffem gael eich barn ar y tri safle posibl yr ydym wedi'u nodi ar gyfer is-orsaf.

## Y DEWIS RHAGARWEINIOL A FFEFRIR GENNYM - GWAITH PWYSIG ARALL

Rhwng Wylfa, Ynys Môn a Phentir, Gwynedd

WP



### Y gwaith arfaethedig

Cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir.

### Pam mae angen hynny?

I gysylltu ffynonellau cynhyrchu carbon isel newydd â'r rhwydwaith presennol yng Ngogledd Cymru.

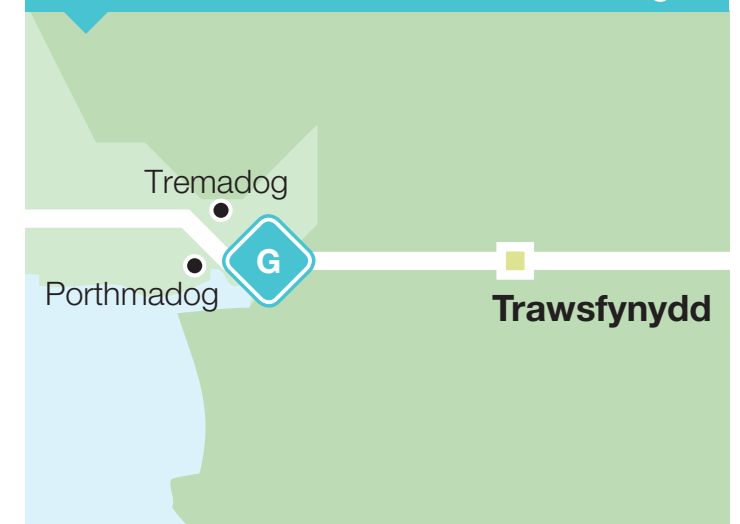
### Dweud eich dweud

Hoffem gael eich barn ar y dewis rhagarweiniol a ffeffrir gennym ar gyfer cysylltiad uwchben. Hoffem hefyd gael eich barn ar y coridorau llwybrau yr ydym wedi'u nodi ac unrhyw feysydd sensitif.

Byddai hefyd angen gwneud gwaith ychwanegol i gryfhau'r rhwydwaith trydan. Byddai hyn yn cynnwys gweithio ar linellau uwchben presennol yng Ngogledd Cymru, gosod offer i roi hwb i gryfder trawsyrru a gweithio ar is-orsafoedd Wylfa, Pentir a Thrawsfynydd. Nid ydym yn gwybod manylion llawn y gwaith hwn ar hyn o bryd ond wrth i hyn ddod yn gliriach, rydyn ni wedi ymrwymo i roi'r wybodaeth lawn i bobl.

Aber Afon Glaslyn

G



### Y gwaith arfaethedig

Cysylltiad tanddaearol ychwanegol i ddisodli ac uwchraddio'r cysylltiad tanddaearol presennol.

### Pam mae angen hynny?

I gryfhau'r rhwydwaith er mwyn gallu delio â'r ynni ychwanegol yn y system.

### Dweud eich dweud

Hoffem gael eich barn ar y dewis rhagarweiniol a ffeffrir gennym am gysylltiad o dan y ddaear a'r coridor llwybr a'r aliniad posibl ar gyfer y llwybr yr ydym wedi'u nodi.

Fel rhan o'r cam cyntaf hwn yn yr ymgynghori, rydym yn croesawu eich barn a'ch safbwyntiau am y dewis strategol rhagarweiniol a ffeffrir gennym. Fe'i dewiswyd oherwydd credwn ei fod yn sicrhau'r cydbwysedd gorau rhwng ystyriaethau technegol, economaidd, amwynder ac amgylcheddol o'i gymharu â'r dewisiadau eraill a ystyriwyd gennym. Ond byddwn yn dal i adolygu'r dewis strategol a ffeffrir gennym gydol y broses ymgynghori i sicrhau mai'r dewis mwyaf priodol sy'n cael ei ddatblygu yn y pen draw.

## AM RAGOR O WYBODAETH

**Mae modd lawrlwytho copi o'r 'Need Case' a'r 'Strategic Options Report', yn ogystal â 'Our approach to the design and routing of new electricity transmission lines' a dogfennau eraill yn ymwneud â'r prosiect oddi ar y we yn:**

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copïau ar gael hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid (gweler y dudalen gefn am fanylion).



# MAP O LEOLIADAU AR GYFER YR IS-ORSAF - GORLLEWIN GWYNEDD

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 3-4** yn **Ffurflen Adborth Gorllewin Gwynedd**.

**Mae'r map hwn yn dangos y tri safle posibl ger Bryncir ar gyfer lleoli'r is-orsaf sydd wedi cael eu pennu gan National Grid. Os datblygir y dewis strategol hwn, dim ond un safle ar gyfer yr is-orsaf fydd yn cael ei ddatblygu yn y pen draw.**

**Rydym wedi nodi tri lleoliad posibl sy'n cael eu dangos ar y map gyferbyn:**

## Opsiwn y safle gogleddol

Mae'r opsiwn safle gogleddol i'r gogledd o Fryncir ac i'r dwyrain o linell uwchben 400 kV cyfredol National Grid. Byddai'r mynediad o'r A487, ac efallai y bydd yn defnyddio'r llwybr mynediad presennol i Derwin Bach. Mae'r safle i gyd bron yn laswelltiroedd wedi'u gwella ac wedi'i amgylchynu'n bennaf gan laswelltiroedd corsio.

## Prif Nodweddion a Dynodiadau

- Does yr un eiddo o fewn y safle nac yn ffinio ag ef. Y mae 17 eiddo preswyl o fewn 500 metr i'r safle ac mae drws nesaf i unedau diwydiannol a'r farchnad amaethyddol.
- Mae Marchnad Amaethyddol Gorllewin Gwynedd, Ystad Ddiwydiannol Bryncir a Garej Bryncir o fewn 500 metr.
- Does dim dynodiadau tirwedd nac amgylcheddol ar y safle; mae Ardal Gadwraeth Arbennig Corsydd Eifionydd oddeutu 1.6km i'r dwyrain o'r safle ac mae Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA) Llystyn Isaf oddeutu 650m i'r de; mae SoDdGA Cors Graianog oddeutu 1.6km i'r dwyrain.
- Mae un heneb restredig, Maen Hir Llystyn Gwyn, 750m i'r gogledd ddwyrain.
- Mae llwybr beiciau pellter hir yn rhedeg ar hyd ffin y safle i'r dwyrain.
- Mae'r safle'n osgoi'r ardal lle ceir perygl o lifogydd.

## Opsiwn y safle canolog

Mae'r opsiwn safle Canolog yn union i'r gorllewin o Fryncir ac i'r dwyrain o linell uwchben 400 kV cyfredol National Grid. Byddai'r mynediad i'r safle o'r A487 drwy faes parcio cyfredol y Farchnad Amaethyddol. Byddai angen llwybr newydd ar draws hen arglawdd y rheiffordd. Mae'r safle'n cael ei ddefnyddio at ddiobenion amaethyddol ar hyn o bryd gyda'r holl dir yn dir amaethyddol gradd isel.

## Prif Nodweddion a Dynodiadau

- Does yr un eiddo o fewn y safle. Y mae 22 eiddo preswyl o fewn 500 metr i'r safle ac mae drws nesaf i unedau diwydiannol a'r farchnad amaethyddol.
- Mae llwybr beiciau pellter hir yn rhedeg ar hyd ffin ogleddol y safle.

- Does dim dynodiadau tirwedd nac amgylcheddol ar y safle. Mae rhan o Ardal Gadwraeth Arbennig Corsydd Eifionydd oddeutu 1.6km i'r dwyrain o'r safle; mae Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA) Llystyn oddeutu 75m i'r de; ac mae SoDdGA Cors Graianog oddeutu 1.6km i'r dwyrain.
- Mae oddeutu 0.4 hectar o'r ardal hon mewn ardal lle ceir perygl o lifogydd.
- Mae fferm Llecheiddior Uchaf sydd wedi'i lleoli ar y llechwedd i'r gorllewin yn edrych dros y safle, gyda rhywfaint o'r safle i'w weld o grŵp o unedau diwydiannol bychan ar ochr ogleddol y safle.

## Opsiwn y safle deheuol

Mae'r opsiwn safle Deheuol 1.4 km i'r De o Fryncir a Garndolbenmaen, ac i'r dwyrain o linell uwchben 400 kV cyfredol National Grid. Byddai'r mynediad i'r safle o'r A487. Byddai'n rhaid gosod llwybr mynediad newydd 500 metr ar hyd ffin cae a hawl tramwy gyhoeddus bresennol.

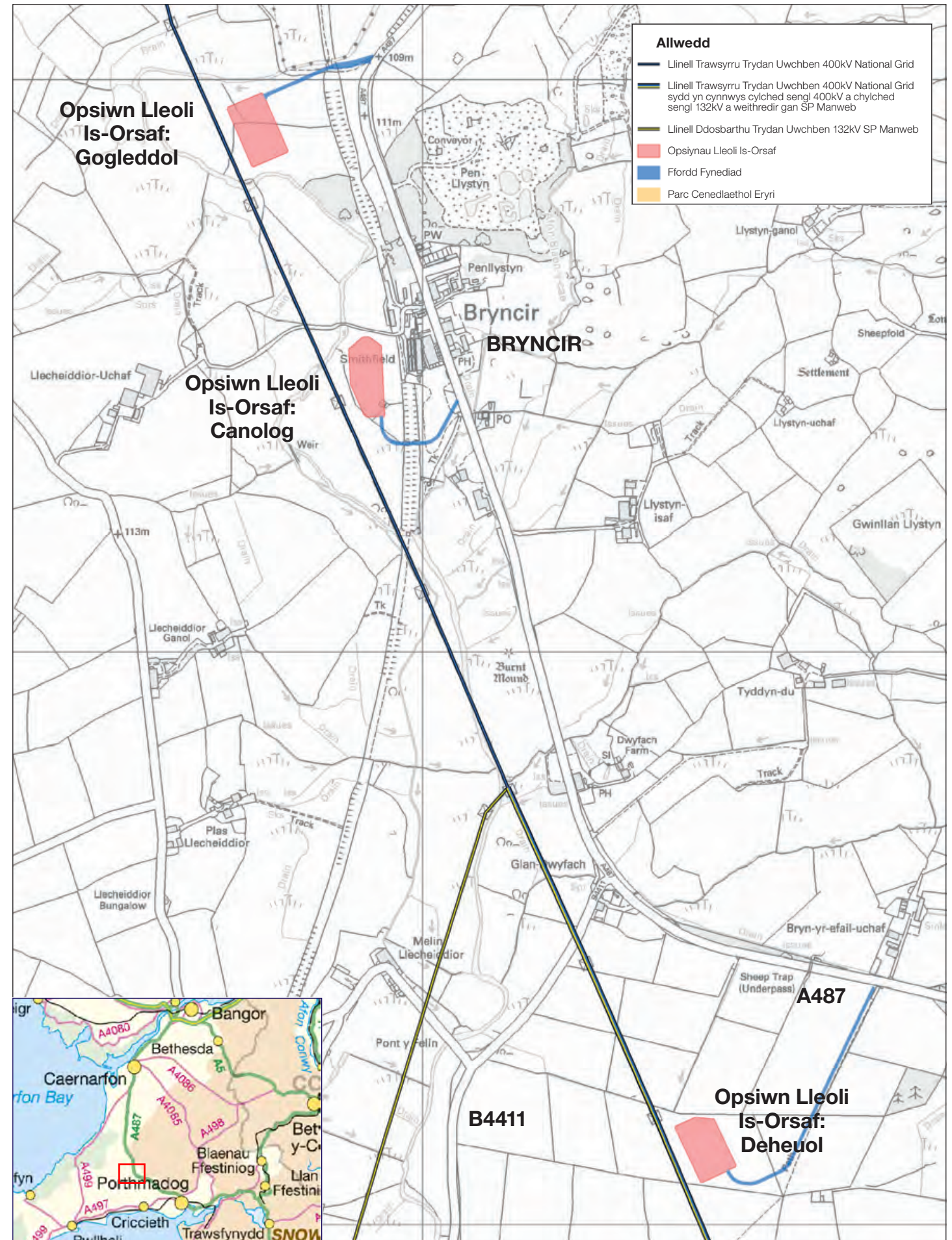
## Prif Nodweddion a Dynodiadau

- Does yr un eiddo o fewn y safle. Y mae 6 eiddo o fewn 500m i'r safle.
- Does dim dynodiadau tirwedd nac amgylcheddol ar y safle; mae rhan o Ardal Gadwraeth Arbennig Corsydd Eifionydd oddeutu 2.3km i'r gogledd ddwyrain o'r safle. Mae Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA) Llystyn Isaf oddeutu 100m i'r gogledd o'r safle. Mae SoDdGA Cors Graianog oddeutu 2.3km i'r gogledd ddwyrain. Mae SoDdGA Ffriddoedd Garndolbemaen oddeutu 2km i'r dwyrain.
- Does dim o'r ardal o fewn ardaloedd lle ceir perygl o lifogydd a does dim cyrsiau dŵr yn llifo drwyddi.
- Mae fferm Bryn Efail Isaf i'r de orllewin a'r clwstwr bychan o dai ar gyffordd yr A487 a'r B4411 yn edrych dros y safle, gyda rhai o'r tai ar ochr y llechwedd yng Ngarndolbenmaen yn debygol o weld y safle.

Ar gyfer y tri opsiwn, bydd angen cysylltiad o'r is-orsaf arfaethedig i'r rhwydwaith dosbarthu lleol 132kV presennol. Ar hyn o bryd, mae ScottishPower Energy Networks yn cynnig bod y cysylltiad hwn yn mynd o dan y ddaear. Ar hyn o bryd rhagwelir y bydd y cysylltiad yn cael ei wneud o dan y ddaear. Hefyd, byddai angen cael cysylltiad â'r llinell uwchben gyfredol, a bydd angen gwneud hyn gan ddefnyddio gantris uwchben hyd at 15m o uchder.

# AM RAGOR O WYBODAETH

Cewch ragor o wybodaeth drwy ddarllen ein llyfryn ; **'West Gwynedd Substation Siting Study'**. Gweler y dudalen gefn am fanylion.



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrhydi ©Hawffraint y Goron. Mae atgynhychu heb ganiatâd yn torri hawffraint y Goron a gallech gael eich erlynnu neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



## AM RAGOR O WYBODAETH

Drwy gydol y llyfryn hwn rydym wedi cyfeirio at nifer o ddogfennau pwysig a fydd yn eich helpu i ddod o hyd i ragor o wybodaeth am brosiect Cysylltiad Gogledd Cymru. Ceir crynodeb ohonynt isod:

### **Need Case (Saesneg yn unig):**

Mae'n egluro pam mae angen y prosiect.

### **Strategic Options Report (Saesneg yn unig):**

Mae'n egluro sut rydym wedi dewis a gwerthuso'r dewisiadau roeddem wedi'u hystyried ar gyfer cysylltu'r prosiectau cynhyrchu ynni newydd arfaethedig.

### **West Gwynedd Substation Siting Study (Saesneg yn unig):**

Mae'n trin ac yn trafod ac yn nodi dewisiadau safle addas ar gyfer is-orsaf yng Ngorllewin Gwynedd.

## Dogfennau eraill

Ceir hefyd nifer o ddogfennau pwysig eraill sy'n darparu gwybodaeth am ein gwaith arfaethedig yng Ngogledd Cymru.

### **Cwestiynau Cyffredin:**

Atebion i gwestiynau a ofynnir yn aml.

### **Wylfa-Pentir Initial Route Corridor Report (Saesneg yn unig):**

Mae'n trin ac yn trafod ac yn nodi'r coridorau llwybr uwchben rhagarweiniol posibl a'r dewisiadau ar gyfer croesi Afon Menai rhwng Wylfa a Phentir.

### **Glaslyn Estuary Route Corridor Report (Saesneg yn unig):**

Mae'n archwilio ein dewis rhagarweiniol ar gyfer cysylltiad tanddaearol, ac mae'n nodi'r coridor llwybr arfaethedig ac aliniad posibl y llwybr yn Aber Afon Glaslyn.

### **Our approach to the design and routeing of new electricity transmission lines (Saesneg yn unig):**

Gellir lawrlwytho copiâu o'r dogfennau hyn o'n gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Gellir lawrlwytho copiâu o'r dogfennau hyn o'n gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copiâu ar gael hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid, y mae eu manylion isod.

## CYSYLLTU Â NI

Rhadffôn: **0800 990 3567** Mae'r llinellau ar agor rhwng 9:00am a 5:00pm o ddydd Llun i ddydd Gwener

Anfon e-bost at: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)

Ysgrifennu at ein cyfeiriad rhadbost yn: **FREEPOST NATIONAL GRID NW CONNECTION**



# Feedback Form Explanation Booklet

## North Wales Connection

Autumn 2012



National Grid has launched its consultation on proposals to connect significant new electricity generation in North Wales.

Your feedback is extremely important to help inform the decisions we make. That is why we want to encourage as many people as possible to take part in our consultation.

Thank you in advance for your time, we look forward to hearing your views.

## HOW TO USE THIS BOOKLET

This booklet is designed to be used alongside the **West Gwynedd Feedback Form** and is intended to help everyone give feedback that is as informed as possible.

Please take some time to read this document, and then have it to hand when you complete your feedback form.

This booklet contains a summary of our **Strategic Options Report**, which has been undertaken to identify our preliminary preferred option for connecting the proposed new energy generation in North Wales to our network. This summary will help you answer **questions 1-2** in the feedback form.

This booklet also contains a summary and a map of each of the substation location options we have brought forward for consultation and these will help you answer **questions 3-4** in the feedback form.

On the back page you can find details of where you can obtain copies of all of the documents referred to in this booklet, and how you can contact us with any questions you may have.



## CONTENTS

<b>Page 2 – 5</b>	Summary of Strategic Options Report
<b>Page 6 – 7</b>	Overview map of substation location options
<b>Page 8</b>	For more information / Contact us

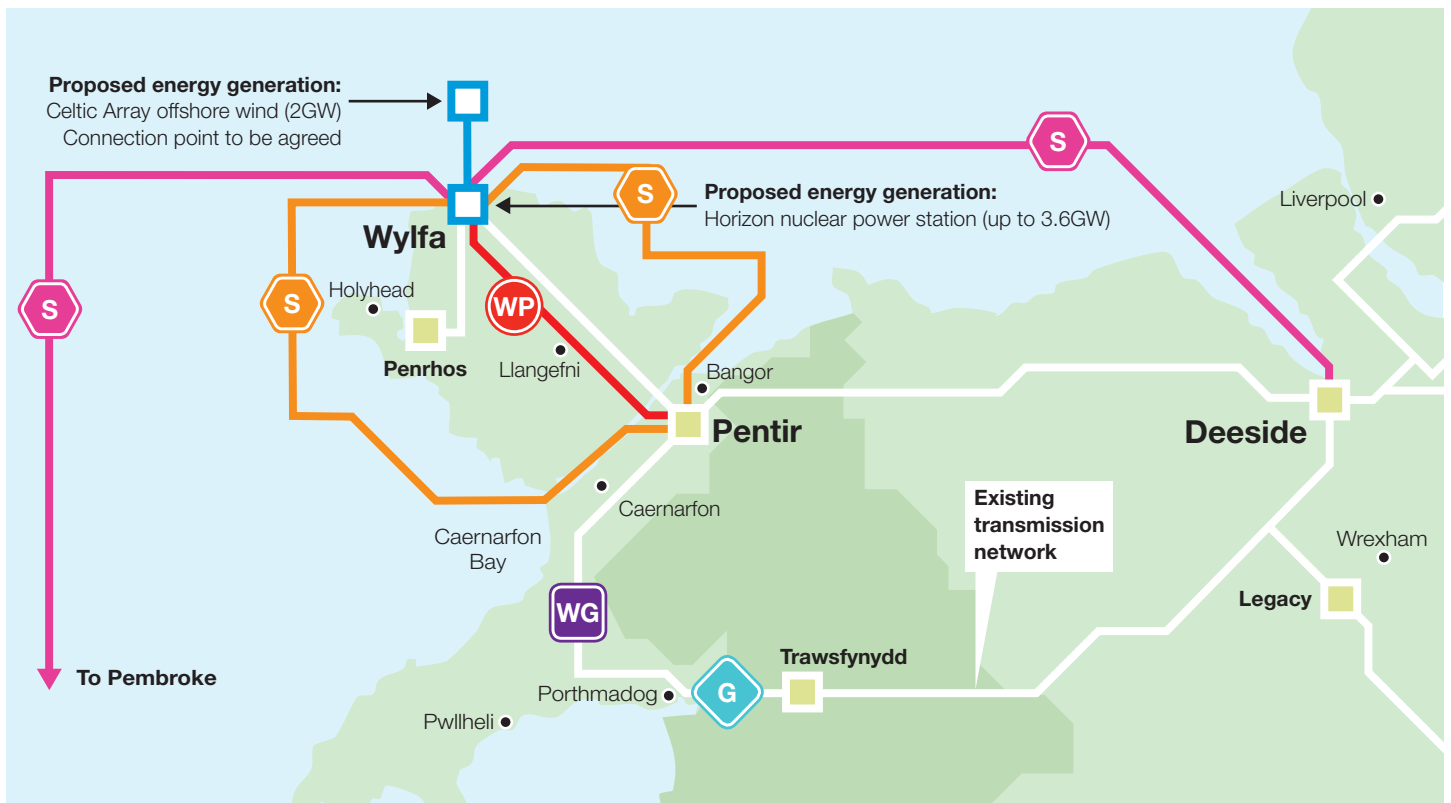
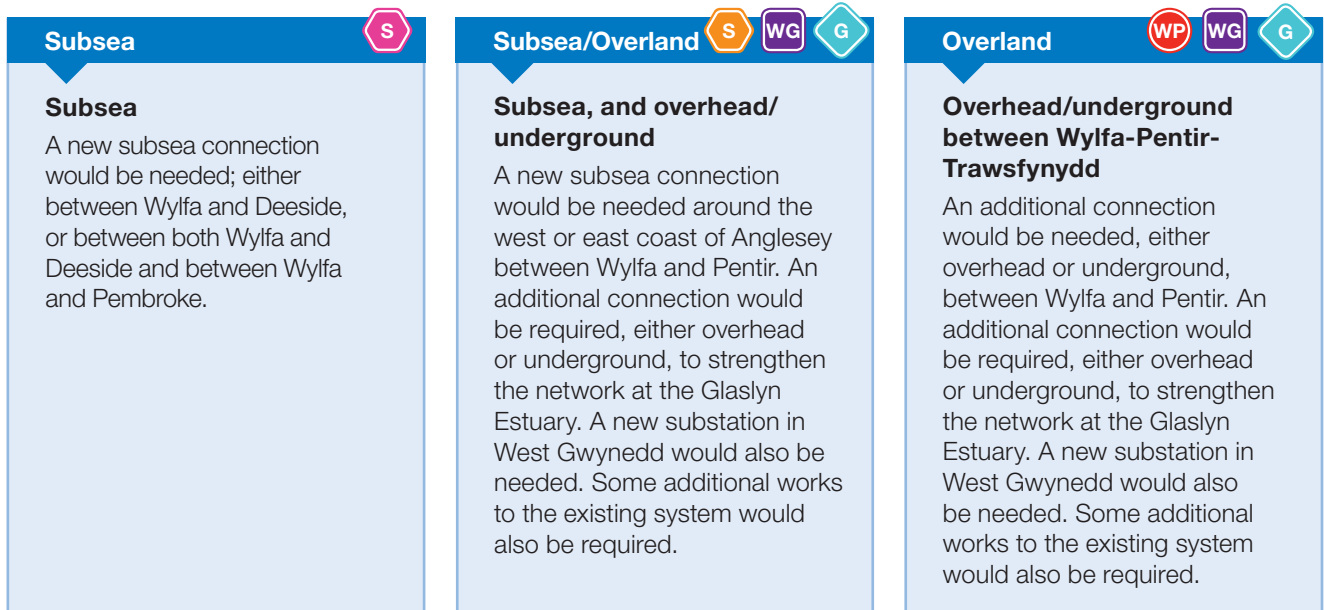
# THE CONNECTION OPTIONS WE CONSIDERED

The information on these pages will help you answer **questions 1-2** in the **West Gwynedd Feedback Form**.

**To identify the best way to connect the proposed new energy generation in North Wales, National Grid undertakes a process to identify ‘strategic options’.**

During this process, we identified a large number of potential ways to connect the new electricity generation proposed in North Wales to the electricity network. These were subsea, overland, or a combination of both and are summarised below.

**The diagram below sets out of all of the different connections options we assessed:**



You can find out more about the approach National Grid takes when connecting new energy generation by reading ‘Our approach to the design and routing of new electricity transmission lines’. You can also find out more information about the different options we considered for connecting the proposed electricity generation in North Wales by reading our ‘Strategic Options Report’. Please see opposite page for details.

# REVIEW OF CONNECTION OPTIONS

Each of the strategic options we identified were then reviewed against environmental and community effects, technical feasibility and whole life costs:

## Subsea – HVDC/AC



- For subsea connections to Deeside or Pembroke, National Grid would need to use HVDC (High Voltage Direct Current) cables. For a subsea connection to Pentir, we could use either HVDC or AC (Alternating Current) cables, due to the distance being much shorter.
- There are environmental considerations when laying subsea cables. However, these can often be reduced or avoided by careful routeing.
- HVDC is an evolving technology. There are no HVDC systems of this capacity installed anywhere in the world. For both options this represents a technical and financial risk.
- For HVDC connections, new converter stations would be required at the ends of each connection. A typical converter station is the size of a large DIY warehouse.
- Capital costs are estimated at between £1.6 billion and £2 billion for HVDC, and between £2.2 and £2.5 billion for AC subsea connections. Cost is important as it is ultimately passed on to the public through energy bills.

**Taking into account these considerations, a subsea option is not our preliminary preferred connection option.**

## Overhead/Underground between Wylfa and Pentir



- The effects of a wholly underground route would be largely limited to the construction phase.
- The visual and landscape effect of an overhead line is recognised, but National Grid believes it would be possible to reduce/avoid this with options including careful routeing, planting and screening or consideration of putting sections of the connection underground.
- The total cost of the project, including 40km of underground cable, would be approximately £1.7 billion. That is £923 million more than the equivalent project based on an overhead line route.

**Taking into account these considerations, National Grid's preliminary preference is for an overhead connection.**

## Substation in West Gwynedd



For all options (aside from subsea HVDC), a new substation in West Gwynedd would be needed to maintain reliable supplies to the area.

## Overhead/Underground at the Glaslyn Estuary



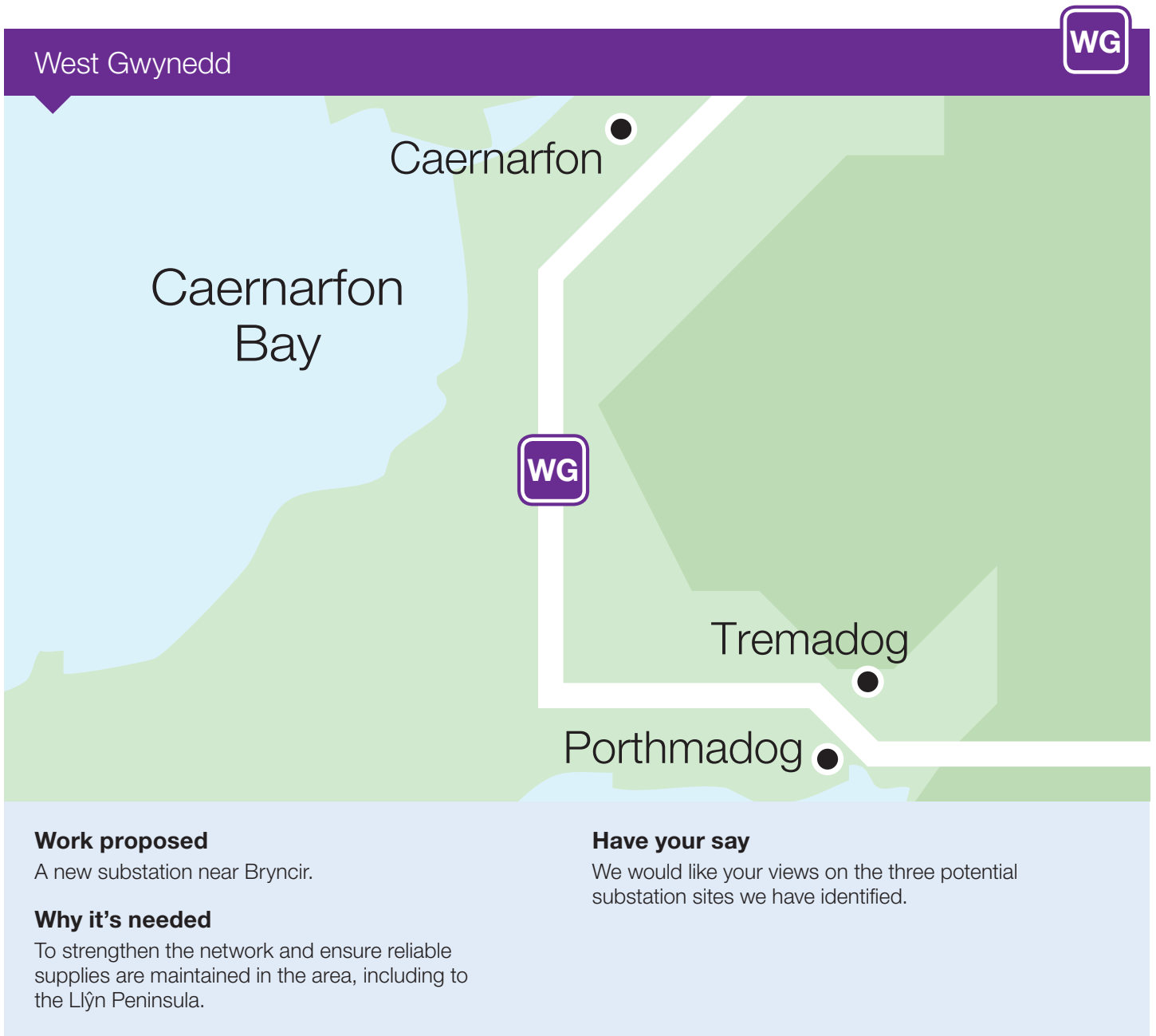
- The effects of a wholly underground route would be largely limited to the construction phase.
- The existing connection at the Glaslyn Estuary is already underground.
- A wholly overhead connection would have a high landscape and visual impact, particularly with regard to Snowdonia National Park.
- A wholly underground connection would be 6km long and would cost £132 million. That is £121 million more than an overhead connection.

**Taking into account these considerations, National Grid's preliminary preference is for an underground connection at the Glaslyn Estuary.**

## OUR PRELIMINARY PREFERRED OPTION

The information on these pages will help you answer **questions 1-2** in the **West Gwynedd Feedback Form**.

Following the strategic options process, our preliminary preferred option is for an overland connection, which consists of three key packages of work. These include an additional overhead connection between Wylfa and Pentir, a new substation in West Gwynedd, and an additional underground connection at the Glaslyn Estuary.



## OUR PRELIMINARY PREFERRED OPTION - OTHER KEY WORKS

Between Wylfa, Anglesey and Pentir, Gwynedd

WP



### Work proposed

An additional overhead connection between Wylfa and Pentir.

### Why it's needed

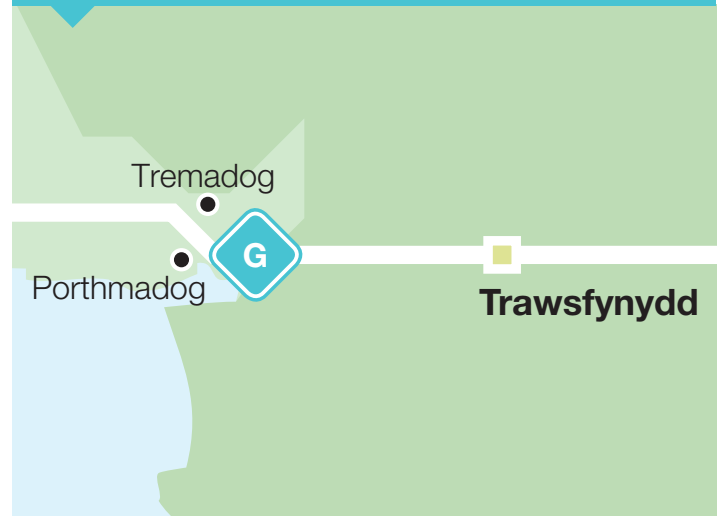
To connect new low-carbon generation sources to the existing network in North Wales.

### Have your say

We would like your views on our preliminary preference for an overhead connection. We would also like your views on the route corridors we have identified and any areas of sensitivity.

The Glaslyn Estuary

G



### Work proposed

An additional underground connection to replace and upgrade the existing underground connection.

### Why it's needed

To strengthen the network to be able to handle the increased amount of energy in the system.

### Have your say

We would like your views on our preliminary preference for an underground connection and the route corridor and possible route alignment we have identified.

A number of additional works would also be required to strengthen the electricity network. These would include work on existing overhead lines in North Wales, installation of equipment to boost transmission strength and work on existing substations at Wylfa, Pentir and Trawsfynydd. We do not yet know the full details of these works but as this becomes clearer, we are committed to keeping people fully informed.

As part of this first stage of consultation, we welcome your thoughts and views on our preliminary preferred strategic option. It was chosen as we believe it achieves the best balance between important technical, economic, amenity and environmental considerations when compared with the others we considered. However, we will keep our preferred strategic option under review throughout the consultation process to ensure that the most appropriate option is ultimately taken forward.

## FOR MORE INFORMATION

**A copy of our 'Need Case' and 'Strategic Options Report', as well as 'Our approach to the design and routing of new electricity transmission lines' and other project documents are available for download from:**

**[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)**

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).

The information on these pages will help you answer **questions 3-4** in the **West Gwynedd Feedback Form**.

**The map shows the three potential substation site options National Grid has identified near to Bryncir. If this strategic option is progressed, only one substation site will ultimately be taken forward.**

**We have identified three potential locations which are shown on the map opposite:**

### Northern site option

The Northern site option is situated to the north of Bryncir and east of the existing National Grid 400 kV overhead line. Access would be from the A487, and may use the existing access track to Derwin Bach. The site consists almost entirely of improved grasslands and is surrounded in the main by marshy grasslands.

### Key Characteristics and Designations

- No properties are located within or border the boundary of the site. There are 17 residential properties within 500 metres of the site.
- West Gwynedd Agricultural Market, Bryncir Industrial Estate and Bryncir Garage are located within 500 metres.
- There are no landscape or environmental designations on the site; Corsydd Eifionydd/ Eifionydd Fens Special Area of Conservation (SAC) is situated approximately 1.6 km to the east of the site; and the Llystyn Isaf Site of Special Scientific Interest (SSSI) is situated approximately 650m to the south; Cors Graianog SSSI is approximately 1.6km to the east.
- There is one scheduled monument, Llystyn Gwyn Inscribed Stone, 750m to the north east
- A long distance cycle route runs along the boundary of the site to the east.
- The site avoids the flood risk area.

### Central site option

The Central site option is situated directly to the west of Bryncir and east of the existing National Grid 400 kV overhead line. Access to the site would be from the A487 through the current Agricultural Market car park with a new route across the disused railway embankment being required. The site is currently used for agricultural purposes.

### Key Characteristics and Designations

- No properties are located within the site. There are 22 residential properties within 500 metres of the site and it is next to industrial units and the agricultural market.
- A long distance cycle route runs along the northern boundary of the site.

- There are no landscape or environmental designations on the site; part of Corsydd Eifionydd/ Eifionydd Fens Special Area of Conservation (SAC) is situated approximately 1.6km to the east of the site and Cors Graianog SSSI is approximately 1.6km to the east. Llystyn Isaf Site of Special Scientific Interest (SSSI) is situated approximately 75m to the south.
- Approximately 0.4 hectares of this area lies within a flood risk area.
- The site is overlooked by the Llecheiddior-Uchaf farm on the rising hillside to the west, with limited views from a group of small industrial units at the northern edge of the site.

### Southern site option

The Southern site option is situated 1.4 km to the south of Bryncir and Garndolbenmaen, and east of the existing National Grid 400 kV overhead line. Access to the site would be from the A487 with a new access track of 500 metres needing to be installed along a field boundary and existing public right of way.

### Key Characteristics and Designations

- No properties are located within the site. There are six properties within 500m of the site.
- There are no landscape or environmental designations on the site; part of Corsydd Eifionydd/ Eifionydd Fens Special Area of Conservation (SAC) is situated approximately 2.3km to the north-east of the site. Llystyn Isaf Site of Special Scientific Interest (SSSI) is situated approximately 100m to the north of the site. Cors Graianog SSSI is approximately 2.3km to the north-east. Ffriddoedd Garndolbenmaen SSSI is approximately 2 km to the east.
- None of the area lies within flood risk areas and no watercourses flow through it.
- The site is overlooked by the Bryn Efail Isaf farm to the south-west and the small cluster of houses at the junction of the A487 and the B4411, with some of the houses on the rising hillside in Garndolbenmaen likely to gain views.

For all three site options, a connection from the proposed substation to the existing 132 kV local distribution network will be needed. A connection to the existing overhead line would also be required, and this will need to be done using overhead gantries of up to 15m.

## FOR MORE INFORMATION

You can find out more information by reading our **West Gwynedd Substation Siting Study**. Please see back page for details.





## FOR MORE INFORMATION

Throughout this booklet, we have referred to a number of important documents which will help you find out more information about the North Wales Connection Project. These are summarised below:

**Need Case:**

Explains why the project is needed.

**Strategic Options Report:**

Explains our selection and appraisal of the options we considered for connecting the proposed new energy generation.

**West Gwynedd Substation Siting Study:**

Examines and identifies suitable site options for a substation in West Gwynedd.

## Other documents

There are also a number of other important documents which provide information about our proposed work in North Wales.

**FAQ:**

Answers to Frequently Asked Questions.

**Wylfa-Pentir Initial Route Corridor Report:**

Examines and identifies the preliminary potential overhead route corridors and Menai Strait crossing options between Wylfa and Pentir.

**Glaslyn Estuary Route Corridor Report:**

Examines our preliminary preference for an underground connection, and identifies a proposed route corridor and potential route alignment at the Glaslyn Estuary.

**Our approach to the design and routing of new electricity lines:**

Explains the process that National Grid follows when planning new transmission routes.

Copies of these documents can be downloaded from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available from a number of public locations or on request by contacting the National Grid team, details below.

## CONTACT US

Freephone: **0800 990 3567** Lines are open between 9:00am – 5:00pm Monday – Friday

Sending an email to: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

Writing to our freepost address at: **FREEPOST NATIONAL GRID NW CONNECTION**



# Llyfryn Esbonio'r Ffurflen Adborth

## Cysylltiad Gogledd Cymru

Hydref 2012

G

### Aber Afon Glaslyn

Mae National Grid wedi lansio ei ymgynghoriad ar gynigion i gysylltu'r trydan newydd sylweddol a fydd yn cael ei gynhyrchu yng ngogledd Cymru.

Mae eich adborth yn bwysig iawn i helpu i gyfrannu at y penderfyniadau y byddwn yn eu gwneud. Dyna pam yr ydym am annog cynifer â phosibl o bobl i gyfrannu at ein hymgyngoriad.

Diolch ichi ymlaen llaw am eich amser. Edrychwn ymlaen at glywed eich barn.

## SUT I DDEFNYDDIO'R LLYFRYN HWN

Mae'r llyfryn hwn i'w ddefnyddio ochr yn ochr â **Ffurflen Adborth Aber Afon Glaslyn** a'i fwriad yw helpu pawb i roi adborth sydd wedi'i seilio hyd y bo modd ar wybodaeth.

Rhowch amser i ddarllen y ddogfen hon, a'i chael wrth law pan fyddwch yn llenwi'ch ffurflen adborth.

Mae'r llyfryn hwn yn cynnwys crynodeb o'n **'Strategic Options Report'**, a luniwyd i nodi'r dewis rhagarweiniol yr ydym yn ei ffafrio ar gyfer cysylltu'r ynni newydd a fydd yn cael ei gynhyrchu yng Ngogledd Cymru i'n rhwydwaith. Bydd y crynodeb hwn yn eich helpu i ateb **cwestiynau 1-2** yn y ffurflen adborth.

Mae'r llyfryn hwn hefyd yn cynnwys crynodeb a map o'r opsiynau croesi a choridorau llwybr yr ydym am ymgynghori yn eu cylch a bydd y rhain yn eich helpu i ateb **cwestiwn 3** yn y ffurflen adborth.

Ar y dudalen gefn fe welwch fanylion lle gallwch gael gfael ar gopiâu o'r holl ddogfennau y cyfeirir atynt yn y llyfryn hwn, a sut y gallwch gysylltu â ni os oes gennych chi unrhyw gwestiynau.



## CYNNWYS

<b>Tudalen 2 – 5</b>	Crynodeb o'r 'Strategic Options Report'
<b>Tudalen 6 – 7</b>	Map trosolwg o'r coridor llwybr a argymhellir ar gyfer Aber Afon Glaslyn ac aliniad posibl y llwybr
<b>Tudalen 8</b>	Am ragor o wybodaeth / Cysylltu â ni

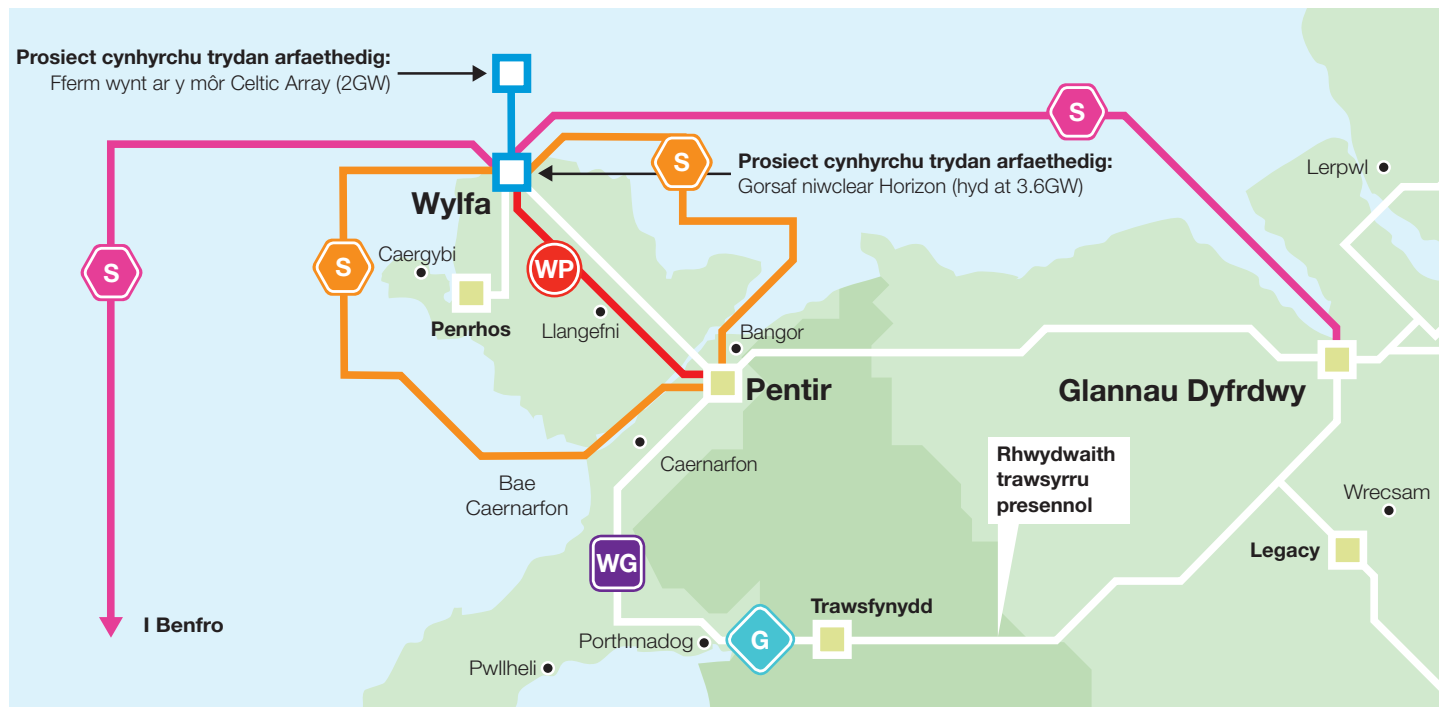
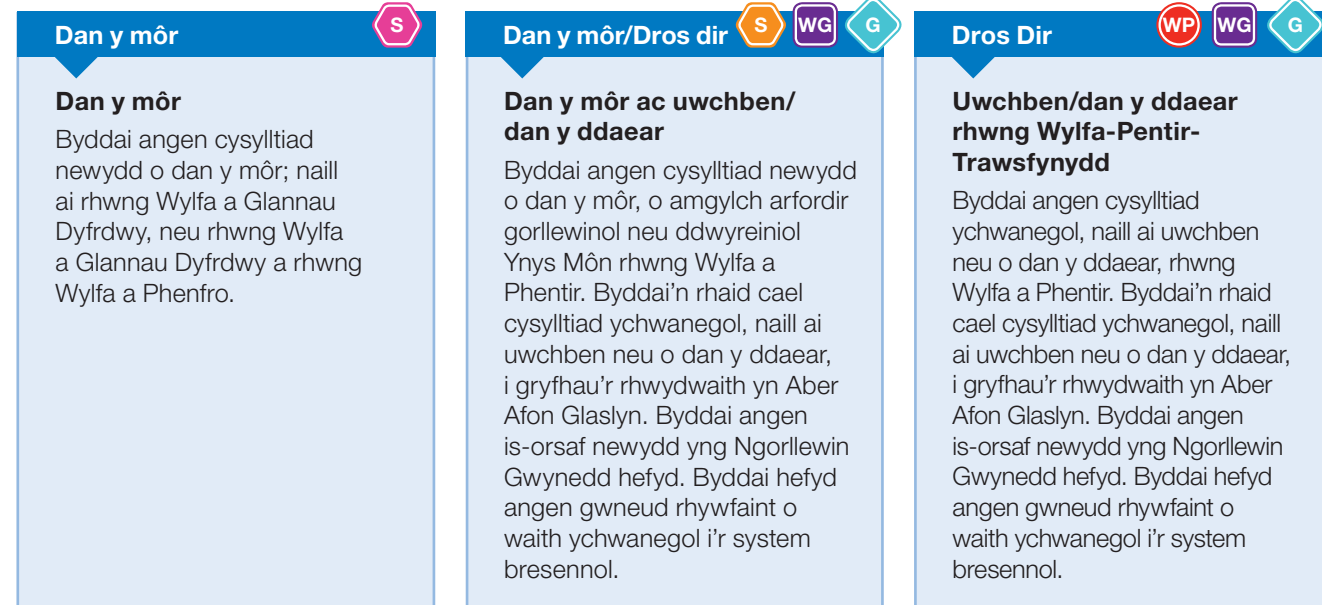
## Y DEWISIADAU CYSYLLTU A YSTYRIWYD GENNYM

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 1-2** yn **Ffurflen Adborth Aber Afon Glaslyn**.

**Er mwyn dod o hyd i'r ffordd orau o gysylltu'r trydan newydd y bwriedir ei gynhyrchu yng Ngogledd Cymru, mae National Grid yn cynnal proses i ddod o hyd i 'ddewisiadau strategol'.**

Yn ystod y broses hon, daethom o hyd i nifer fawr o fforddau posibl o gysylltu'r prosiectau cynhyrchu trydan newydd arfaethedig yng Ngogledd Cymru â'r rhwydwaith trydan. Roedd y rhain o dan y môr, dros dir neu'n gyfuniad o'r ddau. Ceir crynodeb ohonynt isod.

**Mae'r diagram isod yn nodi'r holl ddewisiadau cysylltu gwahanol a gafodd eu hasesu gennym:**



Cewch wybod mwy am y dull y mae National Grid yn ei ddefnyddio wrth gysylltu prosiectau trydan newydd drwy ddarllen 'Our approach to the design and routing of new electricity transmission lines' Hefyd, cewch ragor o wybodaeth am y gwahanol opsiynau a gafodd eu hystyried gennym ar gyfer cysylltu'r prosiectau cynhyrchu trydan arfaethedig yng Ngogledd Cymru drwy ddarllen ein 'Strategic Options Report'

## ADOLYGU'R DEWISIADAU CYSYLLTU

**Wedyn, cafodd pob un o'r dewisiadau strategol eu hadolygu yn erbyn effeithiau amgylcheddol a chymunedol, ymarferoldeb technegol a chostau oes gyfan:**

### Dan y môr – HVDC/AC

- Ar gyfer cysylltiadau o dan y môr i Lannau Dyfrdwy neu Benfro, byddai'n rhaid i National Grid ddefnyddio ceblau HVDC (Cerrynt Uniongyrchol Foltedd Uchel). Ar gyfer cysylltiad o dan y môr i Bentir, galledd ddefnyddio ceblau HVDC neu AC (Cerrynt Eiledol) gan eu bod yn nes o lawer.
- Wrth osod ceblau o dan y môr, rhaid ystyried nifer o faterion amgylcheddol. Serch hynny, yn aml mae modd lleihau neu osgoi'r rhain drwy lwybro gofalus.
- Mae HVDC yn dechnoleg sy'n esblygu. Does dim systemau HVDC o'r capasiti hwn wedi cael eu gosod yn unman arall yn y byd. Ar gyfer y ddau opsiwn, mae hyn yn peri risgiau technegol ac ariannol.
- Mae HVDC yn dechnoleg sy'n esblygu. Does dim systemau HVDC o'r capasiti hwn wedi cael eu gosod yn unman arall yn y byd. Ar gyfer y ddau opsiwn, mae hyn yn peri risgiau technegol ac ariannol.
- Amcangyfrifir bod y costau cyfalaf rhwng £1.6 biliwn a £2 biliwn ar gyfer HVDC, a rhwng £2.2 a £2.5 biliwn ar gyfer cysylltiadau AC o dan y môr. Mae'r gost yn bwysig gan ei bod yn cael ei throsglwyddo i'r cyhoedd yn y pen draw drwy filiau ynni.

**Wrth ystyried hyn i gyd, nid dewis o dan y môr yw'r cysylltiad rhagarweiniol a ffeirir gennym.**

### Uwchben/dan y ddaear rhwng Wylfa a Phentir

- Byddai effeithiau llwybr sy'n gyfan gwbl o dan y ddaear yn cael eu cyfyngu i'r cam adeiladu i raddau helaeth.
- Rydym yn cydnabod effaith weledol llinellau uwchben, ond mae National Grid yn credu y byddai'n bosibl lleihau/osgoi hyn gyda dewisiadau sy'n cynnwys llwybro gofalus, plannu a sgrinio neu ystyried rhoi rhannau o'r cysylltiad o dan y ddaear.
- Bydd cyfanswm cost y prosiect, gan gynnwys 40 km o geblau o dan y ddaear, oddeutu £1.7 biliwn. Mae hynny £923 miliwn yn fwy na'r un prosiect ar sail ceblau uwchben y ddaear.

**Wrth ystyried hyn, y dewis rhagarweiniol a ffeirir gan National Grid yw cysylltiad uwchben.**

### Is-orsaf yng Ngorllewin Gwynedd

Ar gyfer yr holl ddewisiadau (heblaw am HVDC o dan y môr), byddai angen is-orsaf newydd yng Ngorllewin Gwynedd er mwyn cynnal cyflenwadau dibynadwy i'r ardal.

### Uwchben/Dan y ddaear yn Aber Afon Glaslyn

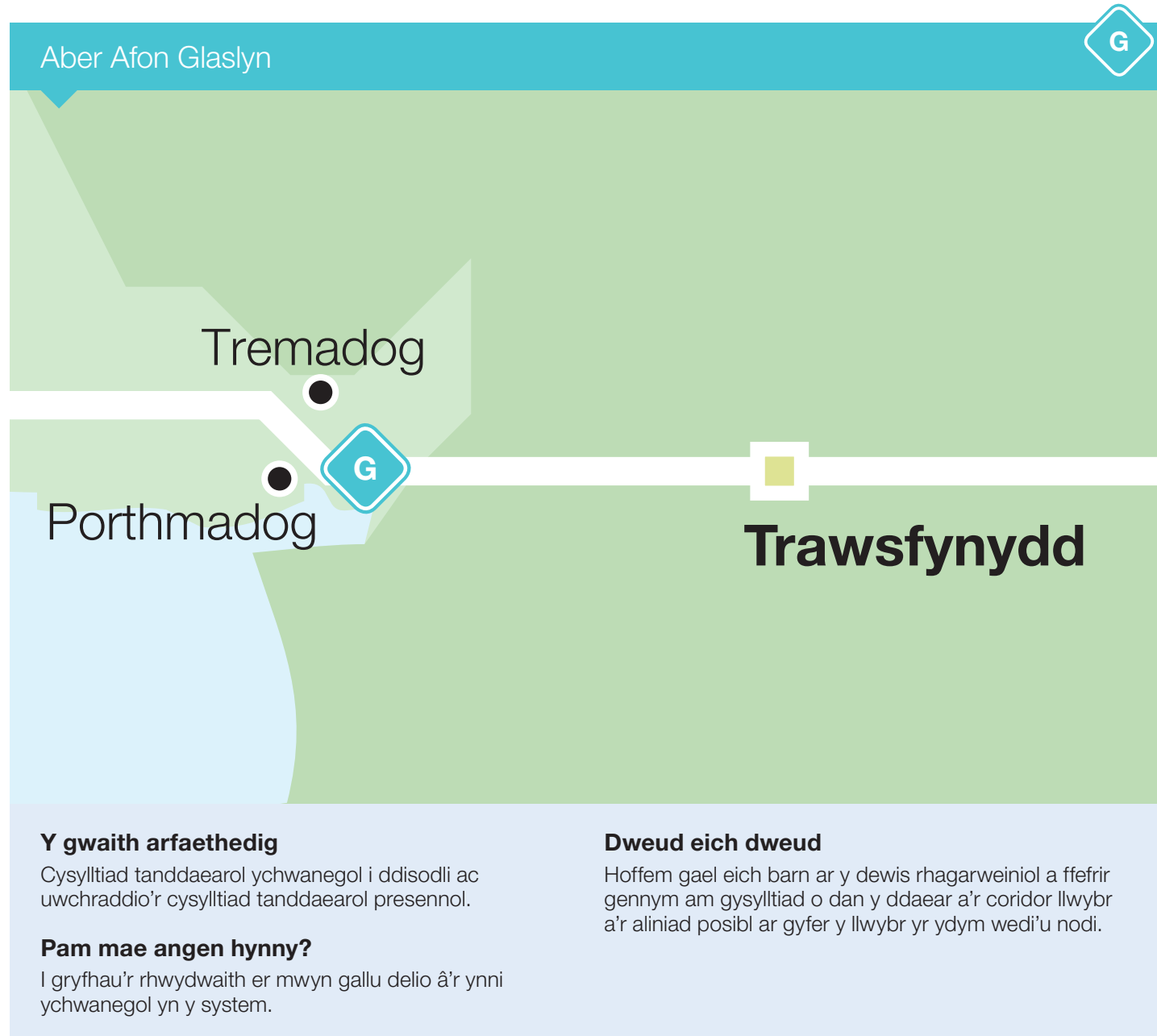
- Byddai effeithiau llwybr sy'n gyfan gwbl o dan y ddaear yn cael eu cyfyngu i'r cam adeiladu i raddau helaeth.
- Mae'r cysylltiad presennol yn Aber Afon Glaslyn eisoes o dan y ddaear.
- Byddai cysylltiad sy'n gyfan gwbl uwchben yn cael effaith weledol a thirwedd fawr, yn enwedig yng nghyswllt Parc Cenedlaethol Eryri.
- Byddai cysylltiad sy'n gyfan gwbl o dan y ddaear yn 6 km o hyd ac yn costio £132 miliwn. Mae hynny £121 miliwn yn fwy na chysylltiad uwchben.

**Wrth ystyried hyn, y dewis rhagarweiniol a ffeirir gan National Grid ar gyfer Aber Glaslyn yw cysylltiad o dan y ddaear.**

## Y DEWIS CYCHWYNNOL A FFEFRIR GENNYM

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiynau 1-2** yn **Ffurflen Adborth Aber Afon Glaslyn**.

**Yn dilyn y broses dewisiadau strategol, y dewis rhagarweiniol a ffeffir gennym yw cysylltiad dros dir, sy'n cynnwys tri pheccyn gwaith hanfodol. Mae'r rhain yn cynnwys cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir, is-orsaf newydd yng Ngorllewin Gwynedd, a chysylltiad dan y ddaear ychwanegol yn Aber Afon Glaslyn.**



## EIN DEWIS RHAGARWEINIOL A FFEFRIR - GWAITH PWYSIG ARALL

Rhwng Wylfa, Ynys Môn a Phentir, Gwynedd



### Y gwaith arfaethedig

Cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir.

### Pam mae angen hynny?

I gysylltu ffynonellau cynhyrchu carbon isel newydd â'r rhwydwaith presennol yng Ngogledd Cymru.

### Dweud eich dweud

Hoffem gael eich barn ar y dewis rhagarweiniol a ffeffir gennym ar gyfer cysylltiad uwchben. Hoffem hefyd gael eich barn ar y coridorau llwybrau yr ydym wedi'u nodi ac unrhyw feysydd sensitif.

Byddai hefyd angen gwneud gwaith ychwanegol i gryfhau'r rhwydwaith trydan. Byddai hyn yn cynnwys gweithio ar linellau uwchben presennol yng Ngogledd Cymru, gosod offer i roi hwb i gryfder trawsyrru a gweithio ar is-orsafoedd Wylfa, Pentir a Thrawsfynydd. Nid ydym yn gwybod manylion llawn y gwaith hwn ar hyn o bryd ond wrth i hyn ddod yn gliriach, rydyn ni wedi ymrwmo i roi'r wybodaeth lawn i bobl.

Gorllewin Gwynedd



### Y gwaith arfaethedig

Is-orsaf newydd yng Ngorllewin Gwynedd.

### Pam mae angen hynny?

I gryfhau'r rhwydwaith a gwneud yn siŵr bod cyflenwadau dibynadwy'n cael eu cynnal yn yr ardal gan gynnwys i Benrhyn Llŷn.

### Dweud eich dweud

Hoffem gael eich barn ar y tri safle posibl yr ydym wedi'u nodi ar gyfer is-orsaf.

Fel rhan o'r cam cyntaf hwn yn yr ymgynghori, rydym yn croesawu eich barn a'ch safbwyntiau am y dewis strategol rhagarweiniol a ffeffir gennym. Fe'i dewiswyd oherwydd credwn ei fod yn sicrhau'r cydbwysedd gorau rhwng ystyriaethau technegol, economaidd, amwynder ac amgylcheddol o'i gymharu â'r dewisiadau eraill a ystyriwyd gennym. Ond byddwn yn dal i adolygu'r dewis strategol a ffeffir gennym gydol y broses ymgynghori i sicrhau mai'r dewis mwyaf priodol sy'n cael ei ddatblygu yn y pen draw.

## AM RAGOR O WYBODAETH

**Mae modd lawrlwytho copi o'r 'Need Case' a'r 'Strategic Options Report', yn ogystal â 'Our approach to the design and routing of new electricity transmission lines' a dogfennau eraill yn ymwneud â'r prosiect oddi ar y we yn:**

[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copïau ar gael hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid (gweler y dudalen gefn am fanylion).



# MAP O'R CORIDOR LLWYBR YN ABER AFON GLASLYN

Bydd y wybodaeth ar y tudalennau hyn yn eich helpu chi i ateb **cwestiwn 3** yn Ffurflen Adborth Aber Afon Glaslyn.

**Mae'r map yn dangos y coridor llwybr eang ac aliniad posibl y llwybr (yr union lwybr y gallai'r cysylltiad ei gymryd) yr ydym yn ymgynghori yn eu cylch.**

Mae'r coridor llwybr yn dechrau yng nghompwnd selio'r Wern, lle mae llinell uwchben yn ymuno â chebl tanddaearol. Wedyn, mae fwy neu lai yn dilyn llwybr dwyreiniol y ceblau tanddaearol presennol.

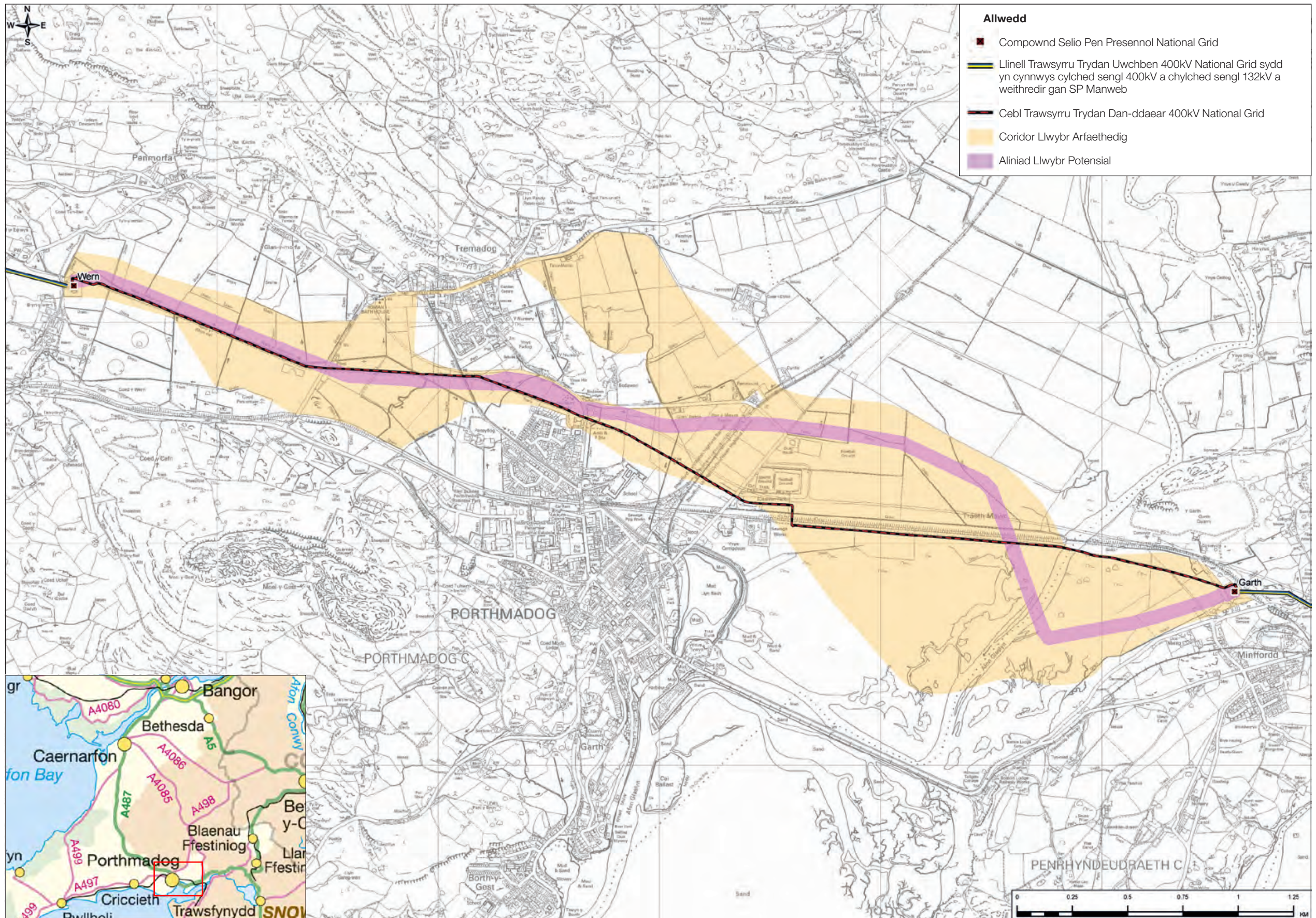
Ar gyrion Porthmadog a Thremadog, mae'r coridor llwybr yn darparu dau ddewis gwahanol ar gyfer llwybr neu aliniad y ceblau.

Nodwyd dewis yn yr Adroddiad Coridor Llwybr a fyddai'n golygu y byddai modd rhedeg rhai o'r ceblau ar hyd Stryd Dulyn a'r Stryd Fawr drwy Dremadog. Serch hynny, mae aliniad y llwybr rydym wedi'i gyflwyno yn osgoi'r angen i roi unrhyw rai o'r ceblau drwy Dremadog.

Mae'r coridor yn dod ynghyd eto i'r gogledd o Borthmadog ac i'r dwyrain o Dremadog lle mae'n croesi caeau chwarae. Wedyn mae'n croesi i'r de o'r ffordd osgoi a'r rheilffordd ac i mewn i'r Safle o Ddiddordeb Gwyddonol Arbennig dynodedig yng Nglaslyn ac yn parhau i'r dwyrain tuag at y compwnd selio presennol yn Y Garth ger Minffordd.

Cyfanswm hyd y coridor llwybr yw oddeutu 6 km (yn dibynnu ar gyfeiriad terfynol y llwybr). Ceir un Ardal Gadwraeth Arbennig yn y coridor (Coedydd Derw a Safleoedd Ystlumod Meirionydd). Mae'r coridor yn croesi Ardal Tirwedd Hanesyddol ac mae'n cynnwys nifer fach o adeiladau rhestredig. Ar y pen gorllewinol mae'n ffinio â Gardd a Pharc Cofrestredig y Wern.

Bydd yr aliniad posibl a ddangosir yn cael ei adolygu ar ôl cael adborth o'r ymgynghoriad, yn dilyn arolwg safle a dyluniad peirianyddol mwy manwl.



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrfa Ei Mawrhydi ©Hawfrant y Goron. Mae atgynhychu heb ganiatâd yn torri hawfrant y Goron a gallech gael eich erlyn neu gallai achos sifil gael ei ddwyn yn eich erbyn. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



## AM RAGOR O WYBODAETH

Drwy gydol y llyfryn hwn rydym wedi cyfeirio at nifer o ddogfennau pwysig a fydd yn eich helpu i ddod o hyd i ragor o wybodaeth am brosiect Cysylltiad Gogledd Cymru. Ceir crynodeb ohonynt isod:

### **Need Case (Saesneg yn unig):**

Mae'n egluro pam mae angen y prosiect.

### **Strategic Options Report (Saesneg yn unig):**

Mae'n egluro sut rydym wedi dewis a gwerthuso'r dewisiadau roeddem wedi'u hystyried ar gyfer cysylltu'r prosiectau cynhyrchu ynni newydd arfaethedig.

### **Glaslyn Estuary Route Corridor Report (Saesneg yn unig):**

Mae'n archwilio ein dewis rhagarweiniol ar gyfer cysylltiad tanddaearol, ac mae'n nodi'r coridor llwybr arfaethedig ac aliniad posibl y llwybr yn Aber Afon Glaslyn.

## Dogfennau eraill

Ceir hefyd nifer o ddogfennau pwysig eraill sy'n darparu gwybodaeth am ein gwaith arfaethedig yng Ngogledd Cymru.

### **Cwestiynau Cyffredin:**

Atebion i gwestiynau a ofynnir yn aml.

### **Wylfa-Pentir Initial Route Corridor Report (Saesneg yn unig):**

Mae'n trin ac yn trafod ac yn nodi'r coridorau llwybr uwchben rhagarweiniol posibl a'r dewisiadau ar gyfer croesi Afon Menai rhwng Wylfa a Phentir.

### **West Gwynedd Substation Siting Study (Saesneg yn unig):**

Mae'n trin ac yn trafod ac yn nodi dewisiadau safle addas ar gyfer is-orsaf yng Ngorllewin Gwynedd.

### **Our approach to the design and routing of new electricity transmission lines (Saesneg yn unig):**

Gellir lawrlwytho copiâu o'r dogfennau hyn o'n gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Gellir lawrlwytho copiâu o'r dogfennau hyn o'n gwefan [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae copiâu ar gael hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid, y mae eu manylion isod.

## CYSYLLTU Â NI

Rhadffôn: **0800 990 3567** Mae'r llinellau ar agor rhwng 9:00am a 5:00pm o ddydd Llun i ddydd Gwener

Anfon e-bost at: [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)

Ysgrifennu at ein cyfeiriad rhadbost yn: **FREEPOST NATIONAL GRID NW CONNECTION**

# Feedback Form Explanation Booklet

## North Wales Connection

Autumn 2012

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### The Glaslyn Estuary

National Grid has launched its consultation on proposals to connect significant new electricity generation in North Wales.

Your feedback is extremely important to help inform the decisions we make. That is why we want to encourage as many people as possible to take part in our consultation.

Thank you in advance for your time, we look forward to hearing your views.

## HOW TO USE THIS BOOKLET

This booklet is designed to be used alongside the **Glaslyn Estuary Feedback Form** and is intended to help everyone give feedback that is as informed as possible.

Please take some time to read this document, and then have it to hand when you complete your feedback form.

This booklet contains a summary of our **Strategic Options Report**, which has been undertaken to identify our preliminary preferred option for connecting the proposed new energy generation in North Wales to our network. This summary will help you answer **questions 1-2** in the feedback form.

This booklet also contains a summary and a map of the route corridor and crossing options we have brought forward for consultation and these will help you answer **question 3** in the feedback form.

On the back page you can find details of where you can obtain copies of all of the documents referred to in this booklet, and how you can contact us with any questions you may have.



## CONTENTS

<b>Page 2 – 5</b>	Summary of Strategic Options Report
<b>Page 6 – 7</b>	Overview map of the Glaslyn Estuary proposed route corridor and possible route alignment
<b>Page 8</b>	For more information / Contact us

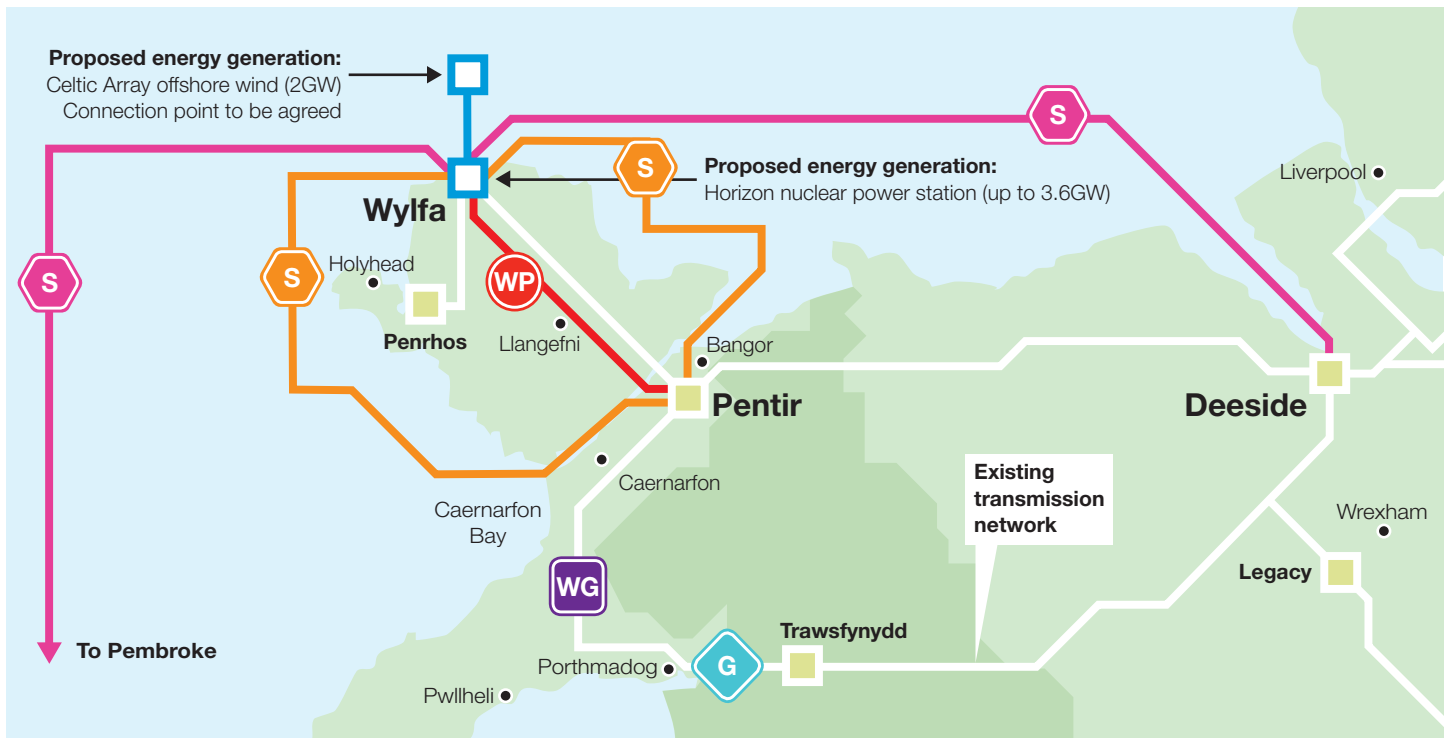
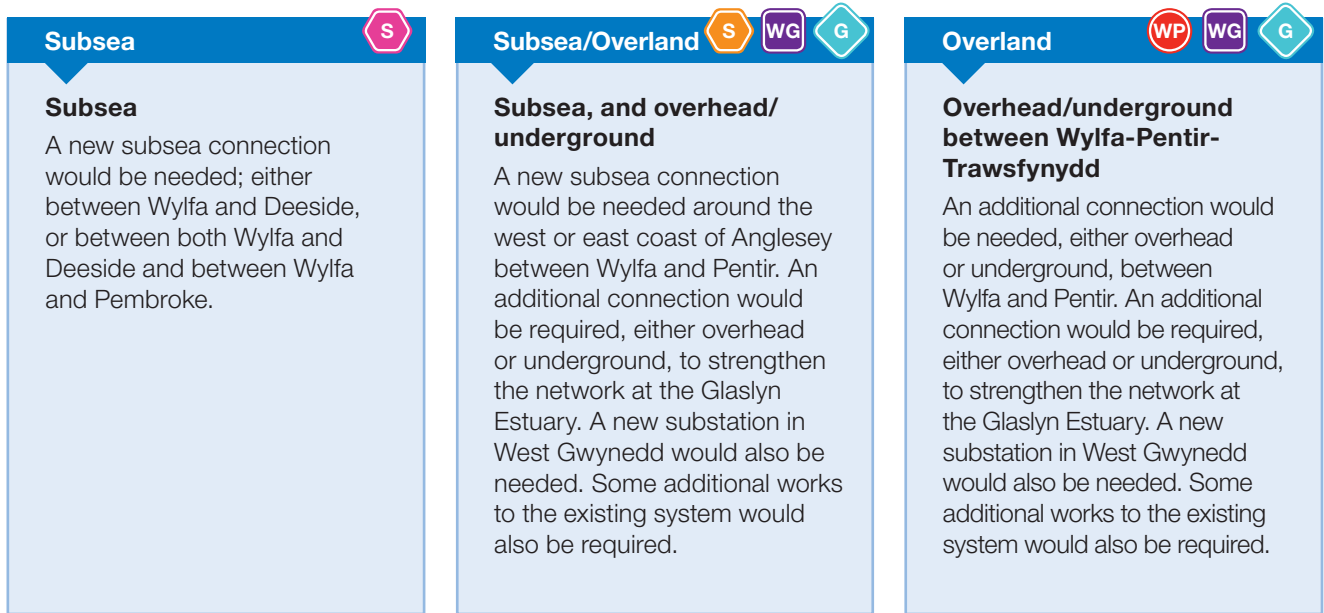
# THE CONNECTION OPTIONS WE CONSIDERED

The information on these pages will help you answer **questions 1-2** in the **Glaslyn Estuary Feedback Form**.

**To identify the best way to connect the proposed new energy generation in North Wales, National Grid undertakes a process to identify ‘strategic options’.**

During this process, we identified a large number of potential ways to connect the new electricity generation proposed in North Wales to the electricity network. These were subsea, overland, or a combination of both and are summarised below.

**The diagram below sets out of all of the different connections options we assessed:**



You can find out more about the approach National Grid takes when connecting new energy generation by reading ‘Our approach to the design and routing of new electricity transmission lines’. You can also find out more information about the different options we considered for connecting the proposed electricity generation in North Wales by reading our ‘Strategic Options Report’.

# REVIEW OF CONNECTION OPTIONS

Each of the strategic options we identified were then reviewed against environmental and community effects, technical feasibility and whole life costs:

## Subsea – HVDC/AC



- For subsea connections to Deeside or Pembroke, National Grid would need to use HVDC (High Voltage Direct Current) cables. For a subsea connection to Pentir, we could use either HVDC or AC (Alternating Current) cables, due to the distance being much shorter.
- There are environmental considerations when laying subsea cables. However, these can often be reduced or avoided by careful routeing.
- HVDC is an evolving technology. There are no HVDC systems of this capacity installed anywhere in the world. For both options this represents a technical and financial risk.
- For HVDC connections, new converter stations would be required at the ends of each connection. A typical converter station is the size of a large DIY warehouse.
- Capital costs are estimated at between £1.6 billion and £2 billion for HVDC, and between £2.2 and £2.5 billion for AC subsea connections. Cost is important as it is ultimately passed on to the public through energy bills.

**Taking into account these considerations, a subsea option is not our preliminary preferred connection option.**

## Overhead/Underground between Wylfa and Pentir



- The effects of a wholly underground route would be largely limited to the construction phase.
- The visual and landscape effect of an overhead line is recognised, but National Grid believes it would be possible to reduce/avoid this with options including careful routeing, planting and screening or consideration of putting sections of the connection underground.
- The total cost of the project, including 40 km of underground cable, would be approximately £1.7 billion. That is £923 million more than the equivalent project based on an overhead line route.

**Taking into account these considerations, National Grid's preliminary preference is for an overhead connection.**

## Substation in West Gwynedd



For all options (aside from subsea HVDC), a new substation in West Gwynedd would be needed to maintain reliable supplies to the area.

## Overhead/Underground at the Glaslyn Estuary



- The effects of a wholly underground route would be largely limited to the construction phase.
- The existing connection at the Glaslyn Estuary is already underground.
- A wholly overhead connection would have a high landscape and visual impact, particularly with regard to Snowdonia National Park.
- A wholly underground connection would be 6 km long and would cost £132 million. That is £121 million more than an overhead connection.

**Taking into account these considerations, National Grid's preliminary preference is for an underground connection at the Glaslyn Estuary.**

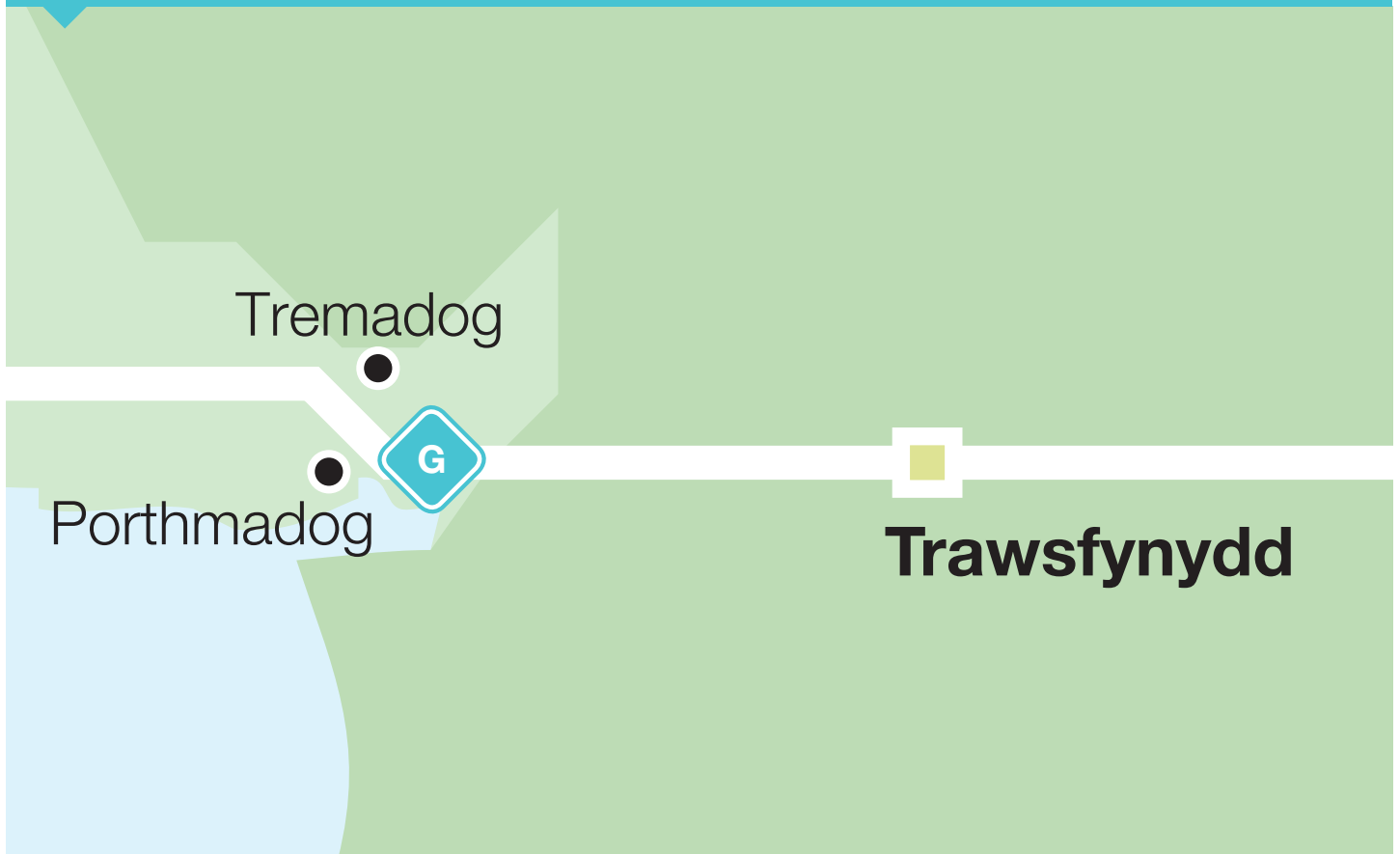
## OUR PRELIMINARY PREFERRED OPTION

The information on these pages will help you answer **questions 1-2** in the **Glaslyn Estuary Feedback Form**.

Following the strategic options process, our preliminary preferred option is for an overland connection, which consists of three key packages of work. These are an additional overhead connection between Wylfa and Pentir, a new substation in West Gwynedd, and an additional underground connection at the Glaslyn Estuary.

### The Glaslyn Estuary

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#### Work proposed

An additional underground connection to replace and upgrade the existing underground connection.

#### Why it's needed

To strengthen the network to be able to handle the increased amount of energy in the system.

#### Have your say

We would like your views on our preliminary preference for an underground connection and the route corridor and possible route alignment we have identified.



## OUR PRELIMINARY PREFERRED OPTION - OTHER KEY WORKS

Between Wylfa, Anglesey and Pentir, Gwynedd



### Work proposed

An additional overhead connection between Wylfa and Pentir.

### Why it's needed

To connect new low-carbon generation sources to the existing network in North Wales.

### Have your say

We would like your views on our preliminary preference for an overhead connection. We would also like your views on the route corridors we have identified and any areas of sensitivity.

West Gwynedd



### Work proposed

A new substation in West Gwynedd.

### Why it's needed

To strengthen the network and ensure reliable supplies are maintained in the area, including to the Llŷn Peninsula.

### Have your say

We would like your views on the three potential substation sites we have identified.

A number of additional works would also be required to strengthen the electricity network. These would include work on existing overhead lines in North Wales, installation of equipment to boost transmission strength and work on existing substations at Wylfa, Pentir and Trawsfynydd. We do not yet know the full details of these works but as this becomes clearer, we are committed to keeping people fully informed.

As part of this first stage of consultation, we welcome your thoughts and views on our preliminary preferred strategic option. It was chosen as we believe it achieves the best balance between important technical, economic, amenity and environmental considerations when compared with the others we considered. However, we will keep our preferred strategic option under review throughout the consultation process to ensure that the most appropriate option is ultimately taken forward.

## FOR MORE INFORMATION

**A copy of our 'Need Case' and 'Strategic Options Report', as well as 'Our approach to the design and routing of new electricity transmission lines' and other project documents are available for download from:**

[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team (see back page for details).

# ROUTE CORRIDOR MAP AT THE GLASLYN ESTUARY

The information on these pages will help you answer **question 3** in the **Glaslyn Estuary Feedback Form**.

**The map shows the broad route corridor and possible route alignment (the actual path the connection could take) we are consulting on.**

The route corridor starts at the existing Wern sealing end compound, where an overhead line joins onto an underground cable. It then broadly follows the easterly route of the existing underground cables.

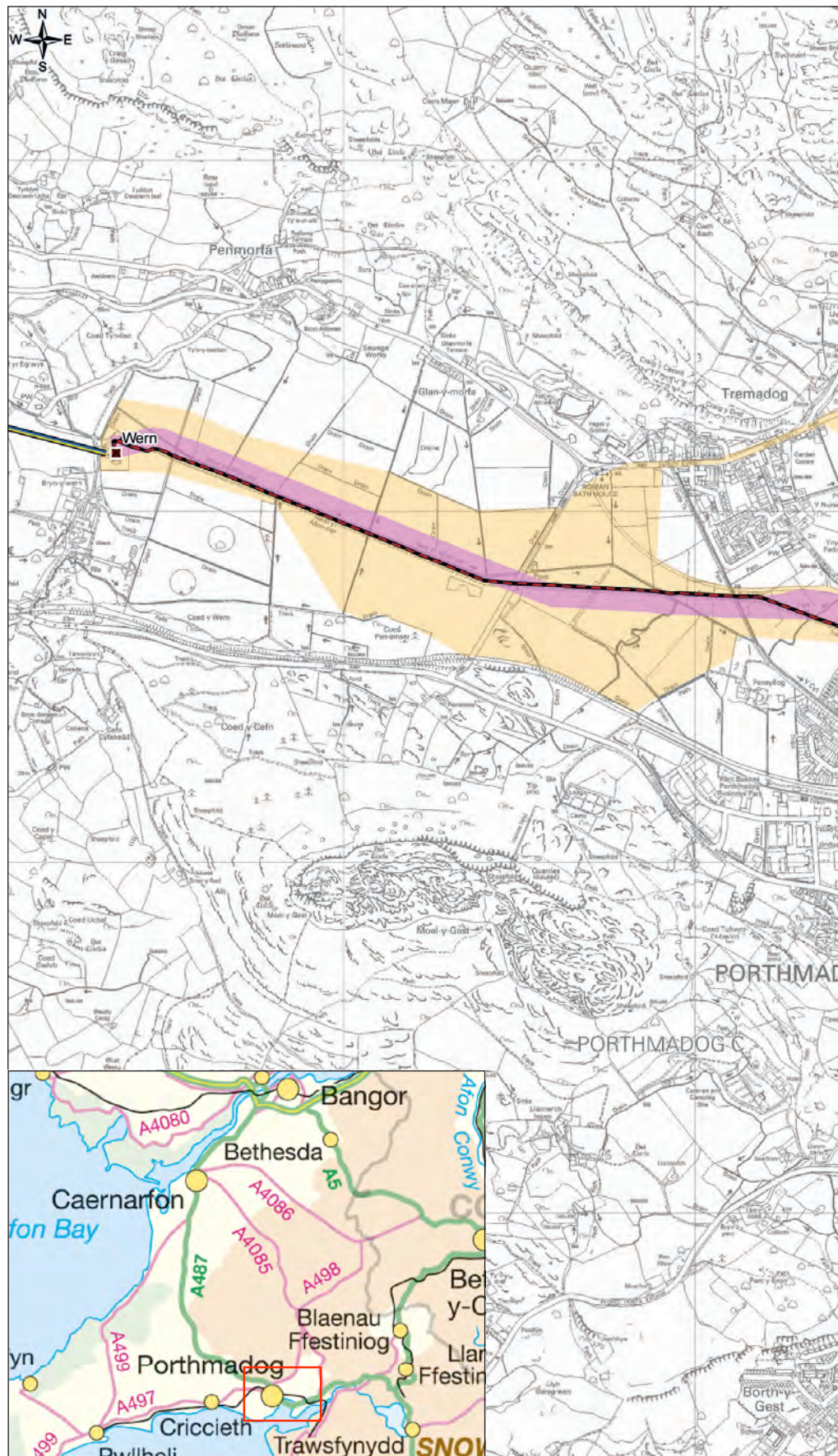
At the outskirts of Porthmadog and Tremadog, the route corridor provides two alternative cable alignment options.

An option was identified in the Route Corridor Report which would mean some of the cables could be put along Dublin Street and High Street through Tremadog. However, the route alignment we have brought forward avoids the need to put any of the cables through Tremadog.

The corridor comes together again north of Porthmadog and east of Tremadog where it crosses existing sports pitches. It then crosses south of the bypass and railway into the designated Site of Special Scientific Interest at Glaslyn and continues eastwards toward the existing sealing end compound at Y Garth near Minffordd.

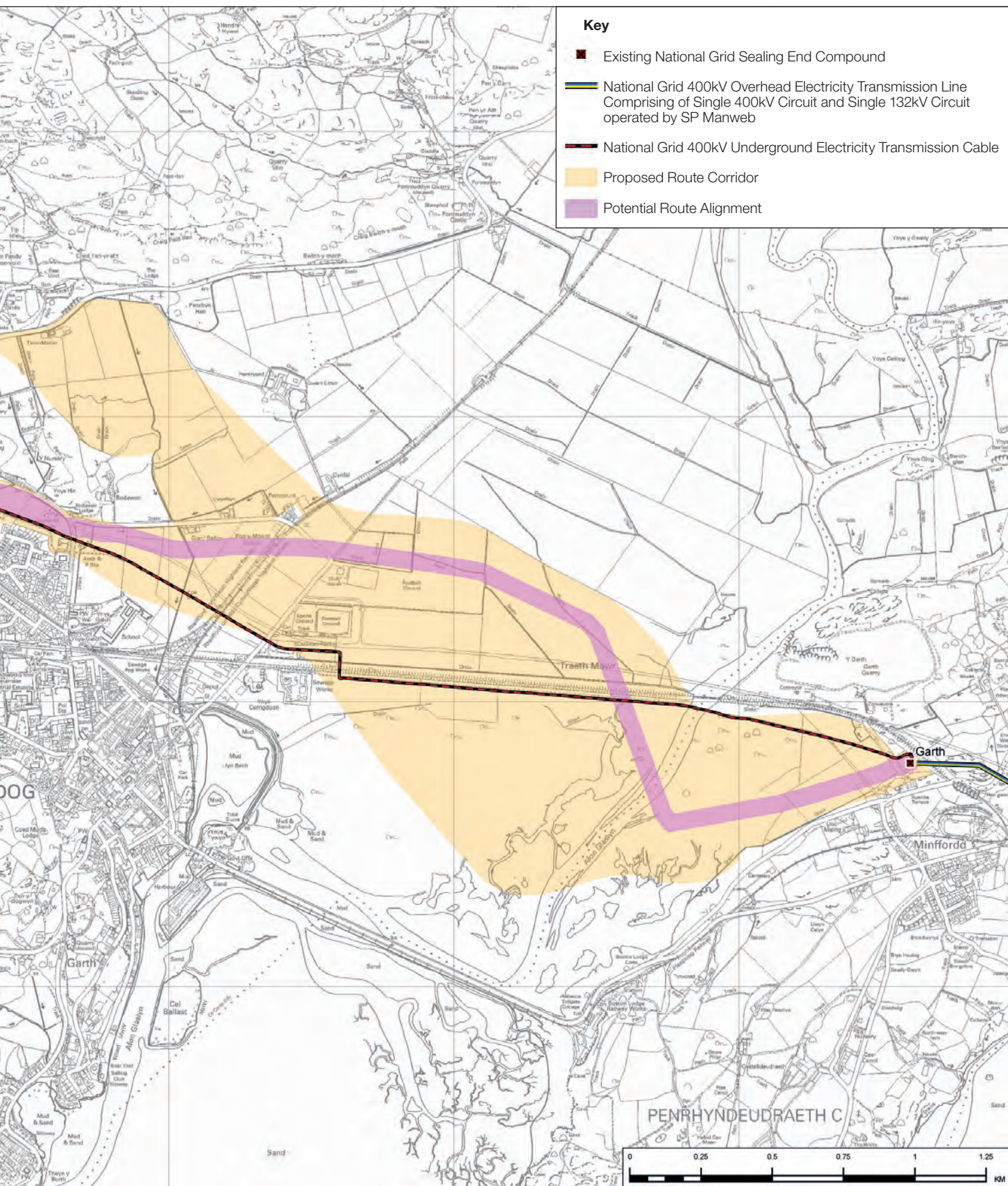
The total length of the route corridor is approximately 6 km (dependent upon the final route alignment). There is one Special Area of Conservation within the corridor (Meirionnydd Oakwoods and Bat Sites). The corridor crosses a Historic Landscape Area and includes a small number of listed buildings. At the western end it borders the Wern Registered Park & Garden.

The potential alignment shown will be reviewed following consultation feedback, site survey and more detailed engineering design.



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## FOR MORE INFORMATION

Throughout this booklet, we have referred to a number of important documents which will help you find out more information about the North Wales Connection Project. These are summarised below:

**Need Case:**

Explains why the project is needed.

**Strategic Options Report:**

Explains our selection and appraisal of the options we considered for connecting the proposed new energy generation.

**Glaslyn Estuary Route Corridor Report:**

Examines our preliminary preference for an underground connection, and identifies a proposed route corridor and potential route alignment at the Glaslyn Estuary.

## Other documents

There are also a number of other important documents which provide information about our proposed work in North Wales.

**FAQ:**

Answers to Frequently Asked Questions.

**Wylfa-Pentir Initial Route Corridor Report:**

Examines and identifies the preliminary potential overhead route corridors and Menai Strait crossing options between Wylfa and Pentir.

**West Gwynedd Substation Siting Study:**

Examines and identifies suitable site options for a substation in West Gwynedd.

**Our approach to the design and routeing of new electricity lines:**

Explains the process that National Grid follows when planning new transmission routes.

Copies of these documents can be downloaded from our website [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available from a number of public locations or on request by contacting the National Grid team, details below.

## CONTACT US

Freephone: **0800 990 3567** Lines are open between 9:00am – 5:00pm Monday – Friday

Sending an email to: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

Writing to our freepost address at: **FREEPOST NATIONAL GRID NW CONNECTION**

## Appendix K: Public exhibition attendance



**APPENDIX K****Public exhibition attendance**

<b>Event</b>	<b>Location</b>	<b>Time and Date</b>	<b>Number of attendees</b>
Wylfa – Pentir event	Bull Hotel Llangefni	10am – 4pm 20 October	<b>47</b>
Wylfa – Pentir event	Memorial Hall, Llanfairpwll, Anglesey	1.30pm – 7.30pm 23 October	<b>71</b>
Wylfa – Pentir event	Community & Ex-servicemen's Hall, Benllech	1.30pm – 7.30pm 31 October	<b>27</b>
Wylfa – Pentir event	(MOBILE), Primary School, Bodorgan	11am – 4pm 1 November	<b>42</b>
Wylfa – Pentir event	Village Hall, Llanfachraeth	1.30pm – 7.30pm 2 November	<b>28</b>
Wylfa – Pentir event	(MOBILE), Primary School, Rhosybol	11am - 4pm 3 November	<b>10</b>
Wylfa – Pentir event	Village Hall, Cemaes	1.30pm – 7.30pm 5 November	<b>48</b>
Wylfa – Pentir event	(MOBILE), Vaynol Arms, Pentir	11am – 4pm 5 November	<b>19</b>
Wylfa – Pentir event	Celtic Royal Hotel, Caernarfon	1.30pm – 7.30pm 6 November	<b>34</b>
Wylfa – Pentir event	(MOBILE), Gaerwen Business Park, Gaerwen	11am – 4pm 8 November	<b>22</b>
Wylfa – Pentir event	Village Hall, Rhosneigr	1.30pm – 7.30pm 9 November	<b>21</b>
Wylfa – Pentir event	(MOBILE), Gwalchmai Hotel, Gwalchmai	11 am – 4pm 9 November	<b>3</b>
Wylfa – Pentir event	Community School, Llanerchymedd	10am - 4pm 10 November	<b>3</b>
Wylfa – Pentir event	Iorwerth Rowlands Centre, Steeple Lane, Beaumaris	1.30pm - 7.30pm 12 November	<b>24</b>
Wylfa – Pentir event	Penrhyn Hall, Tan-Y-Fynwent, Bangor	1.30pm - 7.30pm 13 November	<b>20</b>
Wylfa – Pentir event	(MOBILE), Neuadd Griffith Reade Hall, Llanfaethlu	11am – 4pm 13 November	<b>3</b>
Wylfa – Pentir event	(MOBILE) Arvonias Coaches, Llanrug	11am – 4pm 14 November	<b>4</b>
Wylfa – Pentir event	(MOBILE), Llys Llewelyn Heritage Centre, Aberffraw	11am – 4pm 15 November	<b>14</b>
Wylfa – Pentir event	Community Centre, Brynsiencyn	1:30pm – 7:30pm 16 November	<b>33</b>
Wylfa – Pentir event	(MOBILE), Village Hall, Bodedern	11am – 4pm 16 November	<b>4</b>
Wylfa – Pentir event	Wylfa Sports and Social Centre, Cemaes Bay	1:30pm – 7:30pm 19 November	<b>7</b>
Wylfa – Pentir event	Bull Hotel, Llangefni	1.30pm – 7.30pm 21 November	<b>35</b>
Wylfa – Pentir event	Thomas Telford Centre, Menai Bridge	1.30pm – 7.30pm 22 November	<b>56</b>

Wylfa – Pentir event	Memorial Hall, Amlwch	1.30pm – 7.30pm 23 November	<b>21</b>
Wylfa – Pentir event	Memorial Hall, Y Felinheli	10am – 4pm 24 November	<b>39</b>
Wylfa – Pentir event	Town Hall, Holyhead	1.30pm – 7.30pm 27 November	<b>6</b>
Wylfa – Pentir event	(MOBILE), Hotel Cymyran, Llanfair-yn-Neubwll	11am – 4pm 28 November	<b>7</b>
West Gwynedd event	(MOBILE), Tile Stop, Bryncir	11am – 4pm 2 November	<b>13</b>
West Gwynedd event	Primary School, Garndolbenmaen	10am – 4pm 17 November	<b>9</b>
West Gwynedd event	Goat Inn, Glandwyfach, Bryncir	10am – 4pm 1 December	<b>13</b>
Glaslyn Estuary event	Glaslyn Leisure Centre, Porthmadog	1.30pm – 7.30pm 26 October	<b>20</b>
Glaslyn Estuary event	Glaslyn Leisure Centre, Porthmadog	10am – 4pm 10 November	<b>9</b>
Glaslyn Estuary event	Memorial Hall, Penrhyndeudraeth	10am – 4pm 17 November	<b>9</b>
Glaslyn Estuary event	Memorial Institute, Tremadog	1.30pm – 7.30pm 26 November	<b>11</b>
Glaslyn Estuary event	(MOBILE), Galw Gwynedd, Unit 2, Snowdonia Business Park, Minffordd	11am – 4pm 29 November	<b>4</b>
<b>Total:</b>			<b>736</b>

## Appendix L: Public awareness survey study areas

# Appendix L:

# Public awareness survey study areas 2011



Census Population (2001) by ST Ward

## Appendix M: Schedule of 'hard to reach groups'



## APPENDIX M

## Schedule of hard to reach groups

### Anglesey

#### **Young people:**

Anglesey Children and Young People's Partnership  
IoACC Education Department  
Llwyddo'n Lleol Project Officer  
Children's Services  
Ynys Mon County Federation of Young Farmers  
Digartref Ynys Mon  
David Hughes Secondary School  
Llangefni Secondary School  
Syr Thomas Jones Secondary School  
Bodedern Secondary School  
Holyhead Secondary School

#### **Older people:**

Isle of Anglesey's Council's Older People's Strategy Officer  
Age Cymru Gwynedd a Mon  
Anglesey Agewell

#### **Unemployed:**

JobCentre Plus (North Wales)  
Citizens' Advice Bureau

#### **Disadvantaged communities:**

Anglesey Communities First  
Cymdeithas Tai Eryri  
Tai Gogledd Cymru

#### **Holiday makers/Tourism operators:**

Tourism Section, IoACC

#### **Voluntary sector:**

Medrwn Mon  
Taran Disability Forum

#### **Minority ethnic groups:**

IoACC Policy and Strategy Officer

#### **Caravan parks:**

Capel Elen Caravan Park  
Rhos Caravan Park  
Ty Newydd Leisure Park and Country Club  
Glan Gors Holiday Park  
Nant Newydd Caravan Park  
Pen Parc Caravan Park  
Plas Coch Holiday Homes  
Talacre Beach  
Penrhyn Point Holiday Site  
Tyddyn Isaf Caravan & Camping Site  
Plas Uchaf Touring & Camping Park  
Lee Caravan Park  
Shoreside Caravan & Camp Park  
Bagnol Caravan Park  
Pigeon House Caravan Park  
Penrhyn Bay Caravan Park  
Golden Sunset Holidays

### Gwynedd

#### **Young people:**

Gwynedd Children and Young People's Partnership  
Eryri County Federation of Young Farmers  
Llwyddo'n Lleol Project Officer  
Gisda  
Ysgol Brynrefail  
Ysgol Syr Hugh Owen  
Ysgol Dyffryn Ogwen  
Ysgol Friars  
Ysgol Dyffryn Nantlle

Ysgol Tryfan  
Ysgol Glan y Mor  
Ysgol Eifionydd  
Ysgol Botwnnog  
Ysgol y Moelwyn  
Ysgol Ardudwy  
Ysgol y Gader  
Ysgol y Berwyn  
Ysgol Uwchradd Tywyn

**Older people:**

Age Cymru Gwynedd a Mon  
Gwynedd Agewell  
Gwynedd Older People  
Strategy Officer

**Unemployed:**

JobCentre Plus  
Citizens' Advice Bureau

**Disadvantaged  
communities:**

Communities First Officer  
Cymdeithas Tai Eryri  
Tai Gogledd Cymru

**Holiday makers/Tourism  
operators:**

Gwynedd Council Tourism  
Section

**Voluntary sector:**

Mantell Gwynedd

## Appendix N: Stakeholders consulted in Stage One Consultation

## APPENDIX N Stakeholders consulted in Stage One Consultation

<b>Prescribed statutory stakeholders</b>
Isle of Anglesey County Council
Gwynedd Council
Snowdonia National Park
Welsh Government Energy and Environment Sector Panel
Welsh Government Head of Planning
Ofgem - Wales
The Health and Safety Executive
North Wales Fire and Rescue Authority
North Wales Police Authority
The Environment Agency Wales
Equality and Human Rights Commission
Royal Commission on Ancient and Historical Monuments of Wales
Countryside Council for Wales (CCW)
The Joint Nature Conservation Committee
Maritime and Coastguard Agency
Civil Aviation Authority
AONB Management Partnership
Forestry Commission Wales
Network Rail
North Wales Taith (Integrated Transport Authority)
North Wales Trunk Road Agency
Disabled Persons Transport Advisory Committee (DPTAC)
Office of Rail Regulation
Ofwat (Water Services Regulation Authority)
Trinity House
Wales Resilience Forum
The Crown Estate Commissioners
Existing generators in each site
Magnox North (Wylfa)
Canal River Trust (formally British Waterways) - North Wales and Borders Waterways
<b>Non-prescribed statutory stakeholders</b>
National Trust Wales
Cadw
Transport Division
Defence Land Services
<b>Community Councils – Anglesey</b>
Abberffraw Community
Amlwch Town Council
Beaumaris Town Council
Bodedern Community Council
Bodffordd Community Council
Bodorgan Community Council
Bryngwran Community Council
Cwm Cadnant Community Council
Cylch-y-Garn Community Council
Holyhead Town Council

Llanbadrig Community Council
Llanddaniel Fab Community Council
Llanddona Community Council
Llanddyfan Community Council
Llaneilian Community Council
Llaneugrad Community Council
Llanfachraeth Community Council
Llanfaelog Community Council
Llanfaethlu Community Council
Llanfair Mathafarn Eithaf Community Council
Llanfairpwll Community Council
Llanfair yn Neubwll Community Council
Llanfihangesceifiog Community Council
Llangefni Town Council
Llangoed and Penmon Community Council
Llangristiolus Community Council
Llanidan Community Council
Llannerchymedd Community Council
Mechell Community Council
Menai Bridge Town Council
Moelfre Community Council
Penmynydd and Star Community Council
Pentraeth Community Council
Rhoscolyn Community Council
Rhosybol Community Council
Rhosyr Community Council
Trearddur Community Council
Tref Alaw Community Council
Trewalchmai Community Council
Valley Community Council
<b>Community Councils – Gwynedd</b>
Caernarfon Community Council
Pentir Community Council
Bangor Community Council
Llandygai Community Council
Llanddeiniolen Community Council
Y Felinheli Community Council
Llanrug Community Council
<b>Non-statutory stakeholders</b>
<b>Business</b>
CBI Wales
North Wales Chamber of Commerce
Federation of Small Businesses
<b>Cultural heritage</b>
Anglesey Antiquarian Society and Field Club
Bangor Civic Society
Council for British Archaeology in Wales
Gwynedd Archaeological Trust



<b>Ecology and biodiversity</b>
Cefas
Gwynedd Bat Group
North Wales Wildlife Trust
The Woodland Trust Wales (Coed Cadw)
Wildfowl and Wetland Trust (WWT)
National Sheep Organisation
National Beef Association
RSPB Cymru
<b>Environment</b>
Campaign for National Parks
Campaign for the Protection of Rural Wales (CPRW) – Anglesey
Campaign for the Protection of Rural Wales (CPRW) - Meirionnydd
Country Land and Business Association (CLA)
Farmers Union Wales
Friends of AONBs Societies
Friends of National Park Societies
WWF Cymru
Friends of the Earth Cymru
Bangor Greenpeace
NFU Cymru
The Open Spaces Society
Snowdonia Society
Wales Young Farmers Association
Cynnal Cymru – Sustain Wales
<b>Energy</b>
Anglesey Aluminium Metals Ltd
Centrica
Greenwire
Horizon Nuclear Power
Chair of PLG
Renewable UK Cymru
<b>Industry</b>
Business on Anglesey
Gwynedd Business Network
Passenger Focus
<b>Tourism and Recreation</b>
Bangor Bethesda Ramblers
British Mountaineering Council (BMC)
Caernarfon/Dwyfor Ramblers Group
Eyri 20.30 group
Glaslyn Angling Association
North Wales Tourism
North West Venturers' Yacht Club
Plas Menai National Watersports Centre
Port Dinorwic Sailing Club
Ramblers Association Cymru

Sport Wales
Sustrans Cymru
Tourism Partnership Wales
Welsh Highland Railway Ltd
Wygyr Fishing Association
Ynys Môn Ramblers
<b>Unions</b>
Wales TUC
<b>Anglesey Energy Island</b>
Anglesey Energy Island
<b>Health</b>
Public Health Wales
<b>Political groups</b>
Labour
Plaid Cymru
Welsh Conservatives
Welsh Liberal Democrats
<b>Hard to reach groups: Gwynedd</b>
<b>Young people</b>
Gwynedd Children and Young People's Partnership
Eryri County Federation of Young Farmers
Llwyddo'n Lleol Project Officer - Gwynedd
Gisda (charity for homeless young people)
Ysgol Brynrefail
Ysgol Syr Hugh Owen
Ysgol Dyffryn Ogwen
Ysgol Friars
Ysgol Dyffryn Nantlle
Ysgol Tryfan
Ysgol Glan y Môr
Ysgol Eifionydd
Ysgol Botwnnog
Ysgol y Moelwyn
Ysgol Ardudwy
Ysgol y Gader
Ysgol y Berwyn
Ysgol Uwchradd Tywyn
<b>Older people</b>
Age Cymru Gwynedd a Môn
Gwynedd Agewell
Gwynedd Older People Strategy Officer
<b>Unemployed</b>
JobCentre Plus (North Wales) Citizens'
Advice Bureau (Gwynedd)

<b>Disadvantaged Communities</b>
Communities First Officer (Gwynedd)
Cymdeithas Tai Eryri (housing association)
Tai Gogledd Cymru/North Wales Housing
<b>Holidaymakers/Tourism operators</b>
Tourism Section, Gwynedd Council
<b>Voluntary sector (inc. disability &amp; disadvantaged groups)</b>
Mantell Gwynedd (County Voluntary Council for Gwynedd)
<b>Minority ethnic groups</b>
Gwynedd Council's Equalities and Diversity Officer
<b>Hard to reach groups: Anglesey</b>
<b>Young people</b>
Anglesey Children and Young People's Partnership
IoACC Education Dept (responsible for youth clubs x38 across island)
Llwyddo'n Lleol Project Officer – Anglesey Children's services
Ynys Môn County Federation of Young Farmers
Digartref Ynys Môn (homeless charity working with young people)
David Hughes Secondary School
Llangefni Secondary School
Syr Thomas Jones Secondary School
Bodedern Secondary School
Holyhead Secondary School
<b>Older people</b>
Isle of Anglesey Council's Older People's Strategy Officer
Age Cymru Gwynedd a Môn
Anglesey Agewell
<b>Unemployed</b>
JobCentre Plus (North Wales)
Citizens' Advice Bureau (Anglesey)
<b>Disadvantaged communities</b>
Cluster Manager, Anglesey Communities First
Cymdeithas Tai Eryri (housing association)
Tai Gogledd Cymru/North Wales Housing
<b>Holidaymakers/Tourism operators</b>
Tourism Section, IoACC
<b>Voluntary sector (inc. disability &amp; disadvantaged groups)</b>
Medrwn Môn (Voluntary Council for Anglesey)
Taran Disability Forum
<b>Minority ethnic groups</b>
IoACC Policy and Strategy Officer (resp. for equalities)
<b>Anglesey caravan park owners</b>
Capel Elen Caravan Park

Rhos Caravan Park
Ty Newydd Leisure Park and Country Club
Glan Gors Holiday Park
Nant Newydd Caravan Park
Pen Parc Caravan Park
Plas Coch Holiday Homes Talacre Beach
Penrhyn Point Holiday Site
Tyddyn Isaf Caravan & Camping Site
Plas Uchaf Touring & Camping Park
Lee Caravan Park
Shoreside Caravan & Camp Park
Bagnol Caravan Park
Pigeon House Caravan Park
Penrhyn Bay Caravan Park
Golden Sunset Holiday

## Appendix O: Stage One Consultation – Consultation Zones





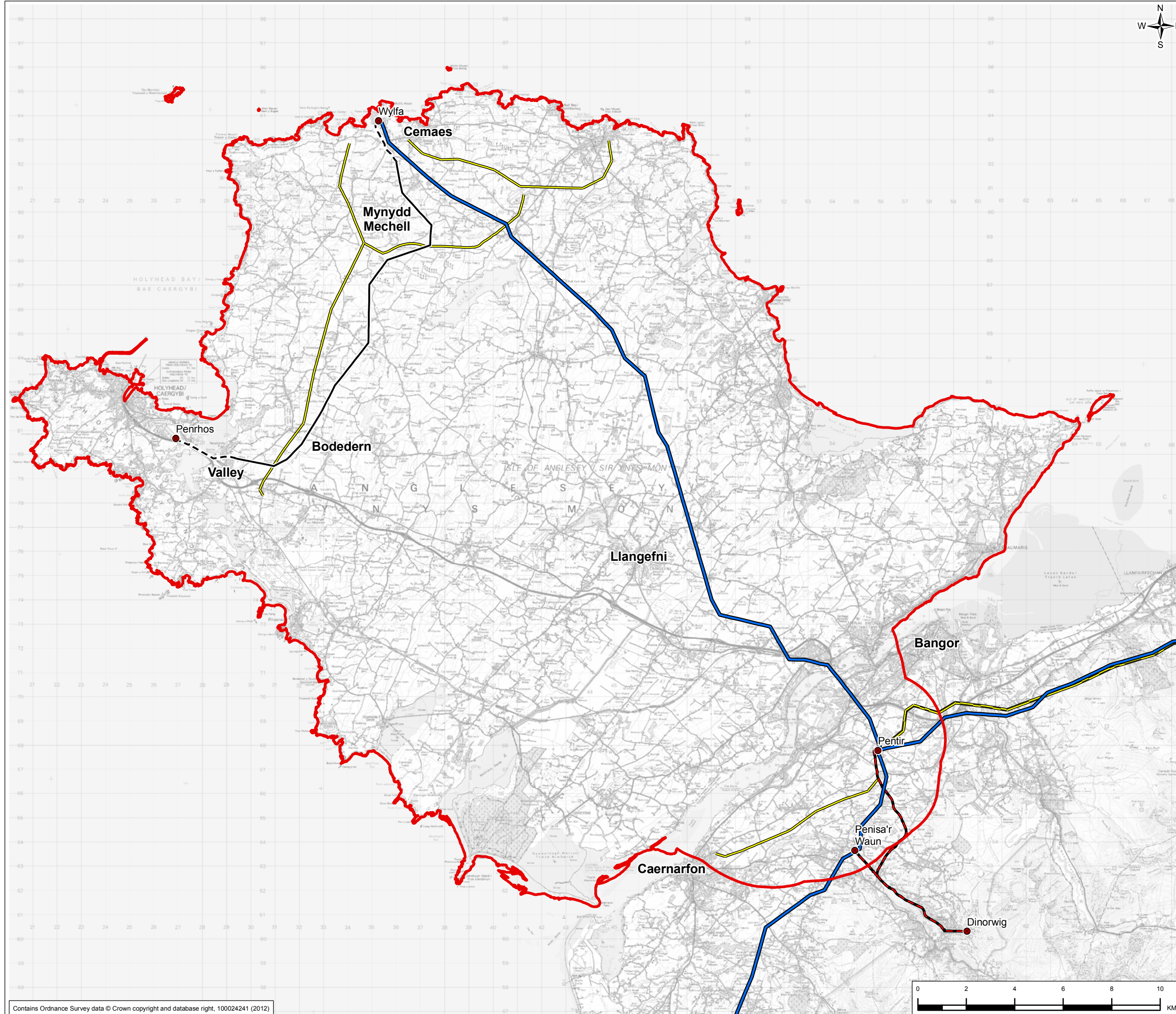
**B2200000-WP-CZ-01**



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**Legend**

- Existing National Grid Substation
- National Grid 400kV Overhead Electricity Transmission Line
- National Grid 132kV Overhead Electricity Transmission Line
- National Grid 400kV Underground Electricity Transmission Cable
- - National Grid 132kV Underground Electricity Transmission Cable
- SP Manweb 132kV Overhead Electricity Distribution Line
- Wylfa Pentir Primary Consultation Zone



0	APR 13	Initial Issue	AD	MR	AMc	SM
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd

**JACOBS**  
 1180 Eskdale Road, Winnersh, Wokingham, RG41 5TU  
 Tel: +44(0)118 946 7000 Fax: +44(0)118 946 7001  
 www.jacobs.com

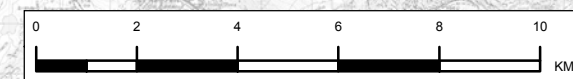
Client  
**nationalgrid**

Project  
 NORTH WALES CONNECTION PROJECT  
 WYLFA TO PENTIR OVERHEAD ELECTRICITY TRANSMISSION LINE

Drawing Title  
 WYLFA TO PENTIR PRIMARY CONSULTATION ZONE

Drawing Status

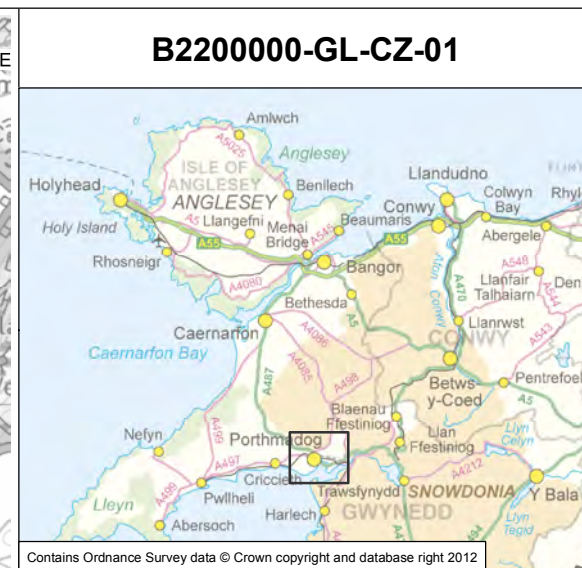
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Jacobs No.	B2200000	
Client No.		
Drawing No.	B2200000-WP-CZ-01	



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- Legend**
- Existing National Grid Sealing End Compound
  - National Grid 400kV Overhead Electricity Transmission Line  
Comprising of Single 400kV Circuit and Single 132kV Circuit  
Operated by SP Manweb
  - National Grid 400kV Underground Electricity Transmission Cable
  - Glaslyn Primary Consultation Zone

0	APR 13	Initial Issue	AD	VC	AMc	SM
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd

**JACOBS**  
 1180 Eskdale Road, Womersley, Wokingham, RG41 5TU  
 Tel: +44(0)118 946 7000 Fax: +44(0)118 946 7001  
 www.jacobs.com

Client  
**nationalgrid**

Project  
 NORTH WALES CONNECTION PROJECT  
 GLASLYN ESTUARY NETWORK REINFORCEMENT

Drawing Title  
 GLASLYN PRIMARY CONSULTATION ZONE

Drawing Status  
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 Jacobs No. B2200000  
 Client No.  
 Drawing No. B2200000-GL-CZ-01

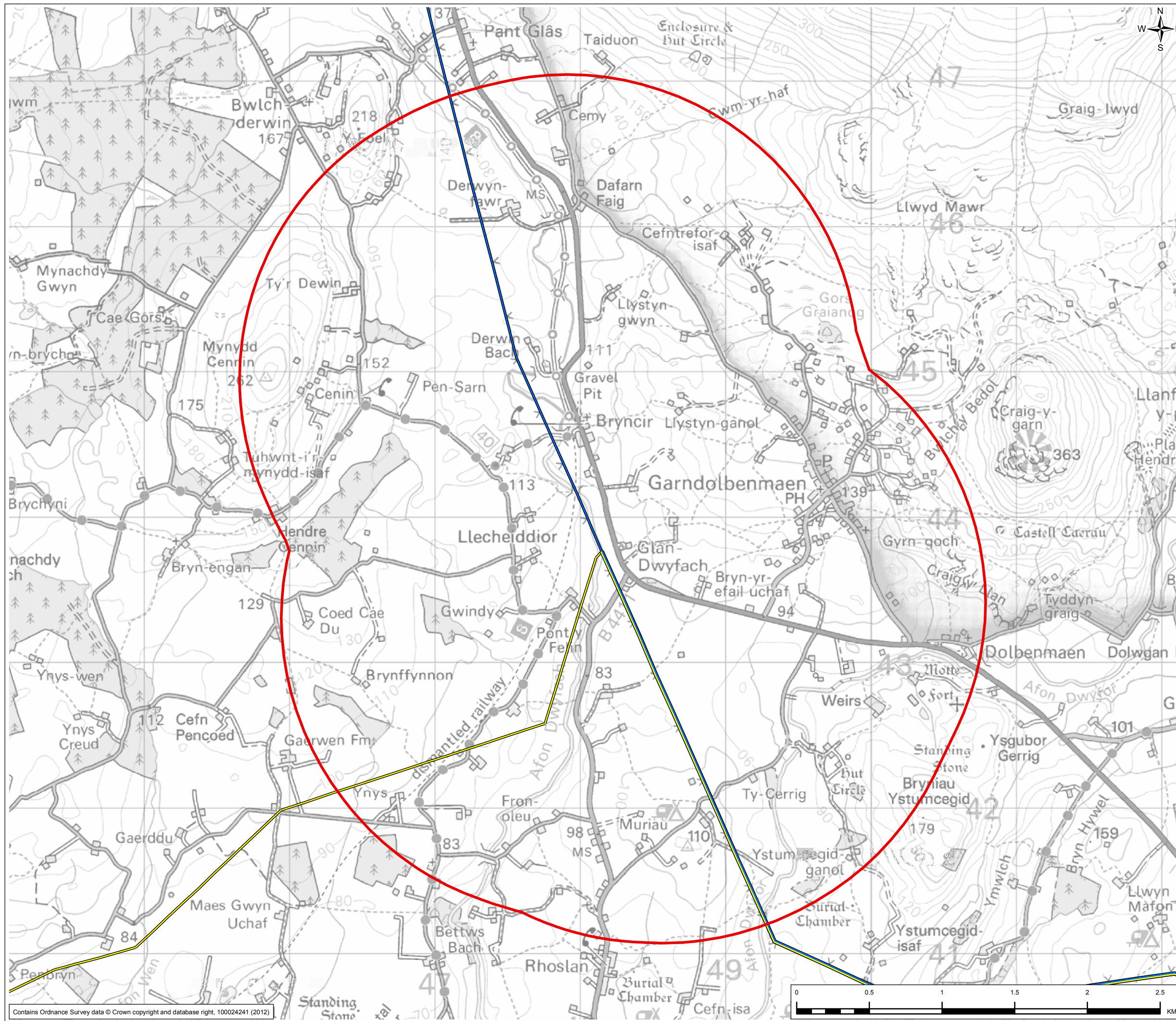
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WARNING  
 Public Rights of Way to Ynys Gifftan  
 can be dangerous under tidal conditions









B2200000-WG-CZ-01



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Legend

-  National Grid 400kV Overhead Electricity Transmission Line
-  National Grid 400kV Overhead Electricity Transmission Line Comprising of Single 400kV Circuit and Single 132kV Circuit Operated by SP Manweb
-  SP Manweb 132kV Overhead Electricity Line
-  West Gwynedd Primary Consultation Zone

0	APR 13	Initial Issue	AD	VC	AMc	SM
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd

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 www.jacobs.com

Client  


Project  
 NORTH WALES CONNECTION PROJECT  
 WEST GWYNEDD SUBSTATION

Drawing Title  
 WEST GWYNEDD PRIMARY CONSULTATION ZONE

Drawing Status  
 Scale @ A3: 1:25,000      Scale @ A1: 1:12,500

Jacobs No. B2200000  
 Client No.  
 Drawing No. B2200000-WG-CZ-01



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Appendix P: Schedule of public locations for viewing key project documents

## **APPENDIX P     Consultation material inspection copy locations**

### ***Anglesey locations***

- Amlwch library
- Beaumaris library
- Cemaes library
- Holyhead library
- Llangefni library
- Menai Bridge library
- Moelfre library
- Newborough library
- Rhosneigr library
- Anglesey County Council
- Anglesey Business Centre
- Benllech library

### ***Gwynedd locations***

- Bangor library
- Caernarfon library
- Bethesda library
- Llanberis library
- Penygroes library
- Blaenau Ffestiniog library
- Porthmadog library
- Gwynedd Council
- Gwynedd County Council Planning Department

### ***Other***

- Colwyn Bay library
- Conwy library
- Llandudno library
- Llandudno Junction library
- Deganwy library
- Conwy County Borough Council



## Appendix Q: Advertisements (dual-language)

## Prosiect Cysylltiad Gogledd Cymru North Wales Connection Project

### Dweud eich dweud

Diolch eto i bawb sydd wedi dod i'n digwyddiadau ymgynghori hyd yma gan gynnig sylwadau gwerthfawr i ni am yr opsiwn cychwynnol a ffeifir gennym ar gyfer cysylltu atomfa newydd arfaethedig yn yr Wylfa a fferm wynt ym Môr Iwerddon. Bydd eich sylwadau a'ch syniadau yn help i ni wrth baratoi ein cynlluniau ar ddechrau'r prosiect fel hyn.

### Have your say

Thank you again to everyone who has attended our consultation events so far and given us valuable feedback on our preliminary preferred option to connect a proposed new nuclear power station at Wylfa and an offshore wind farm in the Irish Sea. Your views and insights will help inform our plans at this early stage.



Mae gennych tan **21 Rhagfyr 2012** i nodi'ch barn am ein cynlluniau fel rhan o'r broses ymgynghori. Dyna pryd y bydd y cyfnod ymgynghori cyntaf yn cau. Mae sawl ffordd o nodi'ch sylwadau a byddem yn annog pawb i gymryd rhan gan fod eich barn yn bwysig iawn i ni wrth i ni wneud ein penderfyniadau.

**Gallwch nodi'ch barn trwy:**

- Lenwi ffurflen adborth ar-lein
- Cysylltu â ni i ofyn am ffurflen adborth ac amlen rhabdost
- Anfon neges ebost atom, neu
- Ysgrifennu llythyr atom neu
- Lenwi ffurflen adborth yn un o'r digwyddiadau sydd ar ôl (gweler isod)

You have until **21 December 2012** to register your views on our proposals as part of the consultation process, when our first stage of consultation will close. There are a number of ways you can do this and we would encourage everyone to take part as your views are extremely important in informing the decisions we make.

**You can register your views by:**

- Completing a feedback form online
- Contacting us to request a feedback form and freepost envelope
- Sending us an email
- Writing us a letter, or
- Completing a feedback form at one of our remaining events (see below)

#### Digwyddiadau yr Wylfa - Pentir

**Dydd Mercher 28 Tachwedd, 11am-4pm**  
(Arddangosfa Symudol) Gwesty'r Cymyran,  
Llanfair yn Neubwll, LL65 3LD

#### Digwyddiadau Gorllewin Gwynedd

**Dydd Sadwrn 1 Rhagfyr, 10am-4pm**  
Tafarn yr Afr, Glandwyfach, Bryncir, LL51 9LJ

#### Digwyddiadau Aber Afon Glaslyn

**Dydd Iau 29 Tachwedd, 11am-4pm**  
(Arddangosfa Symudol) Galw Gwynedd, Uned 2,  
Parc Busnes Eryri, Minffordd, LL48 6LD

#### Er diogelwch y cyhoedd, bydd ein holl arddangosfeydd sefydlog a symudol yn dibynnu ar y tywydd. Bydd ein harddangosfeydd symudol yn cael eu cynnal rhwng 11am a 4pm. Fodd bynnag, byddwn yn cadw'r cerbyd symudol ar agor yn hwyrach os bydd hi'n dal i fod yn olau dydd.

Cysylltwch â ni ar ein rhif rhadffôn os hoffech chi gadarnhau a yw'r digwyddiad yr ydych yn bwriadu mynd iddo'n dal i fynd rhagddo. Byddwn yn rhoi gwybod am unrhyw ddigwyddiadau a fydd yn cael eu canslo ar wefan y prosiect.

#### Wylfa - Pentir events

**Wednesday 28 November, 11am-4pm**  
(MOBILE), Hotel Cymyran,  
Llanfair-yn-Neubwll, LL65 3LD

#### West Gwynedd events

**Saturday 1 December, 10am-4pm**  
Goat Inn, Glandwyfach, Bryncir, LL51 9LJ

#### The Glaslyn Estuary events

**Thursday 29 November, 11am-4pm**  
(MOBILE), Galw Gwynedd, Unit 2, Snowdonia  
Business Park, Minffordd, LL48 6LD

For the safety of the public, all our static and mobile exhibitions will be held subject to weather conditions. All our mobile exhibitions are scheduled to run from 11am until 4pm. However, we will keep the mobile vehicle open later if there is still daylight.

Please contact our freephone number if you would like confirmation that the event you are planning to come along to is going ahead. Details of any cancellations will also be posted on the project website.

### Cysylltu â ni: Contact us:

Gallwch gysylltu â ni mewn nifer o ffyrdd i gael rhagor o wybodaeth:  
There are lots of ways that you can find out more information, by:



Ewch i wefan y prosiect yn:  
[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)  
Visiting our project website at:  
[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)



Ffoniwch ein rhif rhadffôn:  
**0800 990 3567.** Mae'r llinellau ar agor rhwng 9:00am a 5:00pm Dydd Llun - Dydd Gwener  
Calling our freephone number:  
**0800 990 3567.** Lines are open between 9:00am - 5:00pm Monday - Friday



Anfonwch e-bost i:  
[nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)  
Sending an email to:  
[nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)



Ysgrifennwch atom yn ein cyfeiriad rhabdost:  
**FREEPOST NATIONAL GRID NW CONNECTION**  
Writing to our freepost address at:  
**FREEPOST NATIONAL GRID NW CONNECTION**



# Hysbysiad Cyhoeddus Public Notice

**nationalgrid**

## Prosiect Cysylltiad Gogledd Cymru / North Wales Connection Project

### Arddangosfeydd cyhoeddus ar Ynys Môn ac yng Ngwynedd – 20 Hydref i 1 Rhagfyr 2012

Mae National Grid yn cynnal cyfres o arddangosfeydd cyhoeddus ynglŷn â chynigion i gysylltu gorsaf bŵer niwclear newydd yn Wylfa a fferm wynt ar y môr ym Môr Iwerddon i'r rhwydwaith trawsyrru trydan presennol.

Cynhelir digwyddiadau mewn lleoliadau ledled Ynys Môn a Gwynedd a byddwn hefyd yn defnyddio ein cerbyd arddangosfa symudol – gweler isod am fanylion llawn.

### Public exhibitions across Anglesey and Gwynedd – 20 October to 1 December 2012

National Grid is holding a series of public exhibitions about proposals to connect a new nuclear power station at Wylfa and an offshore wind farm in the Irish Sea to the national electricity transmission system.

There are events at locations across Anglesey and Gwynedd and we will also be using our mobile exhibition vehicle - please see below for full details.

**Rydym yn awyddus i glywed eich barn am ein cynigion. Mae gan eich adborth rôl bwysig i'w chwarae fel sail i'r penderfyniadau a wnawn a gobeithiwn gwrrdd â chymaint â phosibl ohonoch yn yr arddangosfeydd.**

**We are keen to listen to your views on our proposals. Your feedback has an important role to play in informing the decisions we make and we hope to meet as many of you as possible at our exhibitions.**

#### Digwyddiadau Wylfa-Pentir

##### Dydd Sadwrn 20 Hydref, 10am-4pm

Gwesty'r Bull, Llangefni, LL77 7LR

##### Dydd Mawrth 23 Hydref, 1.30pm-7.30pm

Y Neuadd Goffa, Llanfairpwll, LL61 5JB

##### Dydd Mercher 31 Hydref, 1.30pm-7.30pm

Neuadd Gymunedol a'r Cyn-filwry, Benllech, LL74 8SN

##### Dydd Iau 1 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Ysgol Gynradd Bodorgan, LL62 5AB

##### Dydd Gwener 2 Tachwedd, 1.30pm-7.30pm

Neuadd y Pentref, Llanfachraeth, LL65 4UW

##### Dydd Sadwrn 3 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Ysgol Gynradd Rhosybol, LL68 9PP

##### Dydd Llun 5 Tachwedd, 1.30pm-7.30pm

Neuadd y Pentref, Cemaes, LL67 0HL

##### Dydd Llun 5 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Tafarn y Faenol, Pentir, LL57 4EA

##### Dydd Mawrth 6 Tachwedd, 1.30pm-7.30pm

Gwesty'r Celt, Caernarfon, LL55 1AY

##### Dydd Iau 8 Tachwedd, 11am-4pm

(Arddangosfa Symudol), Parc Busnes Gaerwen, Gaerwen, LL60 6DN

##### Dydd Gwener 9 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Gwesty Gwalchmai, Gwalchmai, LL65 4PU

##### Dydd Gwener 9 Tachwedd, 1.30pm-7.30pm

Neuadd y Pentref, Rhosneigr, LL64 5UX

##### Dydd Sadwrn 10 Tachwedd, 10am-4pm

Ysgol Gymunedol Llanerchymedd, LL71 8DP

##### Dydd Llun 12 Tachwedd, 1.30pm-7.30pm

Canolfan Iorwerth Rowlands, Steeple Lane, Bivmares, LL58 8AE

##### Dydd Mawrth 13 Tachwedd, 1.30pm-7.30pm

Neuadd y Penrhyn, Tan-Y-Fynwent, Bangor, LL57 1NW

##### Dydd Mawrth 13 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Neuadd Griffith Reade, Llanfaethlu, LL65 4NP

##### Dydd Mercher 14 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Bysus Arvonnia, Llanrug, LL55 4AA

##### Dydd Iau 15 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Canolfan Dreftadaeth Llys Llewelyn, Aberffraw, LL63 5BQ

##### Dydd Gwener 16 Tachwedd, 1.30pm-7.30pm

Y Ganolfan, Brynsiencyn, LL61 6HZ

##### Dydd Gwener 16 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Neuadd y Pentref, Bodedern, LL65 3TZ

##### Dydd Llun 19 Tachwedd, 1.30pm-7.30pm

Ciwb Cymdeithasol a Chwaraeon Wylfa, Bae Cemaes, LL67 0DE

##### Dydd Mercher 21 Tachwedd, 1.30pm-7.30pm

Gwesty'r Bull, Llangefni, LL77 7LR

##### Dydd Iau 22 Tachwedd, 1.30pm-7.30pm

Canolfan Thomas Telford, Porthaethwy, LL59 5EA

##### Dydd Gwener 23 Tachwedd, 1.30pm-7.30pm

Y Neuadd Goffa, 18 Stryd y Farchnad, Amlwch, LL68 9ET

##### Dydd Sadwrn 24 Tachwedd, 10am-4pm

Y Neuadd Goffa, Lôn Emyr, Y Felinheli, LL56 4JB

##### Dydd Mawrth 27 Tachwedd, 1.30pm-7.30pm

Neuadd y Dref, Stryd Newry, Caerdybi, LL65 1HN

##### Dydd Mercher 28 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Gwesty'r Cymyran, Llanfair yn Neubwll, LL65 3LD

#### Digwyddiadau yng Ngorllewin Gwynedd

##### Dydd Gwener 2 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Tile Stop, Bryncir, LL51 9LX

##### Dydd Sadwrn 17 Tachwedd, 10am-4pm

Ysgol Gynradd Garndolbenmaen, LL51 9SZ

##### Dydd Sadwrn 1 Rhagfyr, 10am-4pm

Tafarn yr Afr, Glandwyfach, Bryncir, LL51 9LJ

#### Digwyddiadau yn ardal Aber Glaslyn

##### Dydd Gwener 26 Hydref, 1.30pm-7.30pm

Canolfan Hamdden Glaslyn, Porthmadog, LL49 9HW

##### Dydd Sadwrn 10 Tachwedd, 10am-4pm

Canolfan Hamdden Glaslyn, Porthmadog, LL49 9HW

##### Dydd Sadwrn 17 Tachwedd, 10am-4pm

Neuadd Goffa Penrhyndeudraeth, LL48 6LS

##### Dydd Llun 26 Tachwedd, 1.30pm-7.30pm

Institiwt (Neuadd Goffa) Tremadog, LL49 9RB

##### Dydd Iau 29 Tachwedd, 11am-4pm

(Arddangosfa Symudol) Galw Gwynedd, Uned 2, Parc Busnes Eryri, Minfordd, LL48 6LD

**Er diogelwch y cyhoedd, bydd ein holl arddangosfeydd sefydlog a symudol yn dibynnu ar y tywydd. Bydd ein harddangosfeydd symudol yn cael eu cynnal rhwng 11am a 4pm. Fodd bynnag, byddwn yn cadw'r cerbyd symudol ar agor yn hwyrach os bydd hi'n dal i fod yn olau dydd.**

**Cysylltwch â ni ar ein rhif rhadffôn os hoffech chi gadarnhau a yw'r digwyddiad yr ydych yn bwriadu mynd iddo'n dal i fynd rhagddo. Byddwn yn rhoi gwybod am unrhyw ddiwyddiadau a fydd yn cael eu canslo ar wefan y prosiect.**

#### Wylfa – Pentir events:

##### Saturday 20 October, 10am-4pm

Bull Hotel, Llangefni, LL77 7LR

##### Tuesday 23 October, 1.30pm-7.30pm

Memorial Hall, Llanfairpwll, Anglesey, LL61 5JB

##### Wednesday 31 October, 1.30pm-7.30pm

Community & Ex-servicemen's Hall, Benllech, LL74 8SN

##### Thursday 1 November, 11am-4pm

(MOBILE), Primary School, Bodorgan, LL62 5AB

##### Friday 2 November, 1.30pm-7.30pm

Village Hall, Llanfachraeth, LL65 4UW

##### Saturday 3 November, 11am-4pm

(MOBILE), Primary School, Rhosybol, LL68 9PP

##### Monday 5 November, 1.30pm-7.30pm

Village Hall, Cemaes, LL67 0HL

##### Monday 5 November, 11am-4pm

(MOBILE), Vaynol Arms, Pentir, LL57 4EA

##### Tuesday 6 November, 1.30pm-7.30pm

Celtic Royal Hotel, Caernarfon, LL55 1AY

##### Thursday 8 November, 11am-4pm

(MOBILE), Gaerwen Business Park, Gaerwen, LL60 6DN

##### Friday 9 November, 1.30pm-7.30pm

Village Hall, Rhosneigr, LL64 5UX

##### Friday 9 November, 11am-4pm

(MOBILE), Gwalchmai Hotel, Gwalchmai, LL65 4PU

##### Saturday 10 November, 10am-4pm

Community School, Llanerchymedd, LL71 8DP

##### Monday 12 November, 1.30pm-7.30pm

Iorwerth Rowlands Centre, Steeple Lane, Beaumaris, LL58 8AE

##### Tuesday 13 November, 1.30pm-7.30pm

Penrhyn Hall, Tan-Y-Fynwent, Bangor, LL57 1NW

##### Tuesday 13 November, 11am-4pm

(MOBILE), Neuadd Griffith Reade Hall, Llanfaethlu, LL65 4NP

##### Wednesday 14 November, 11am-4pm

(MOBILE) Arvonnia Coaches, Llanrug, LL55 4AA

##### Thursday 15 November, 11am-4pm

(MOBILE), Llys Llewelyn Heritage Centre, Aberffraw, LL63 5BQ

##### Friday 16 November, 1.30pm-7.30pm

Community Centre, Brynsiencyn, LL61 6HZ

##### Friday 16 November, 11am-4pm

(MOBILE), Village Hall, Bodedern, LL65 3TZ

##### Monday 19 November, 1.30pm-7.30pm

Wylfa Sports and Social Centre, Cemaes Bay, LL67 0DE

##### Wednesday 21 November, 1.30pm-7.30pm

Bull Hotel, Llangefni, LL77 7LR

##### Thursday 22 November, 1.30pm-7.30pm

Thomas Telford Centre, Menai Bridge, LL59 5EA

##### Friday 23 November, 1.30pm-7.30pm

Memorial Hall, Amlwch, LL68 9ET

##### Saturday 24 November, 10am-4pm

Memorial Hall, Y Felinheli, LL56 4JB

##### Tuesday 27 November, 1.30pm-7.30pm

Town Hall, Holyhead, LL65 1HN

##### Wednesday 28 November, 11am-4pm

(MOBILE), Hotel Cymyran, Llanfair-yn-Neubwll, LL65 3LD

#### West Gwynedd events:

##### Friday 2 November, 11am-4pm

(MOBILE), Tile Stop, Bryncir, LL51 9LX

##### Saturday 17 November, 10am-4pm

Primary School, Garndolbenmaen, LL51 9SZ

##### Saturday 1 December, 10am-4pm

Goat Inn, Glandwyfach, Bryncir, LL51 9LJ

#### The Glaslyn Estuary events:

##### Friday 26 October, 1.30pm-7.30pm

Glaslyn Leisure Centre, Porthmadog, LL49 9HW

##### Saturday 10 November, 10am-4pm

Glaslyn Leisure Centre, Porthmadog, LL49 9HW

##### Saturday 17 November, 10am-4pm

Memorial Hall, Penrhyndeudraeth, LL48 6LS

##### Monday 26 November, 1.30pm-7.30pm

Memorial Institute, Tremadog, LL49 9RB

##### Thursday 29 November, 11am-4pm

(MOBILE), Galw Gwynedd, Unit 2, Snowdonia Business Park, Minfordd, LL48 6LD

**For the safety of the public, all our static and mobile exhibitions will be held subject to weather conditions. All our mobile exhibitions are scheduled to run from 11am until 4pm. However, we will keep the mobile vehicle open later if there is still daylight.**

**Please contact our freephone number if you would like confirmation that the event you are planning to come along to is going ahead. Details of any cancellations will also be posted on the project website.**

## Cysylltu â ni: Contact us:

Gallwch gysylltu â ni mewn nifer o ffyrdd i gael rhagor o wybodaeth:

There are lots of ways that you can find out more information, by:



Ewch i wefan y prosiect yn:  
[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)  
Visiting our project website at:  
[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)



Anfonwch e-bost i:  
[nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)  
Sending an email to:  
[nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)



Ffoniwch ein rhif rhadffôn:  
**0800 990 3567.** Mae'r llinellau ar agor rhwng 9:00am - 5:00pm Dydd Llun - Dydd Gwener  
Calling our freephone number:  
**0800 990 3567.** Lines are open between 9:00am - 5:00pm Monday - Friday



Ysgrifennwch atom yn ein cyfeiriad rhadpost:  
**FREEPOST NATIONAL GRID NW CONNECTION**  
Writing to our freepost address at:  
**FREEPOST NATIONAL GRID NW CONNECTION**

Appendix R: Holford 'Rules'

# The Holford Rules



Guidelines on overhead line routing were first formulated in 1959 by Sir William later Lord, Holford, who was a part-time member of the CEGB. National Grid has reviewed these guidelines, known as the 'Holford Rules', and concluded that they have stood the test of time. National Grid therefore intends to continue to employ them as a basis of the company's approach to overhead line routing.

Since the formulation of the original Rules, formal requirements for environmental assessment have been introduced. Whilst environmental assessment for overhead lines addresses wider topics than the visual amenity issue on which the Rules concentrate, they remain a valuable tool in the selecting and assessing potential route options as part of the environmental assessment process. The original Rules and their added notes of clarification are set out below.

## GUIDELINES FOR THE ROUTING OF NEW HIGH VOLTAGE OVERHEAD TRANSMISSION LINES

### Rule 1:

Avoid altogether, if possible, the major areas of highest amenity value, by so planning the general route of the first line in the first place, even if the total mileage is somewhat increased in consequence.

### Note on Rule 1

Investigate the possibility of alternative routes, avoiding if possible the areas of the highest amenity value. The consideration of alternative routes must be an integral feature of environmental statements.

Areas of highest amenity value are:

Areas of Outstanding Natural Beauty  
National Parks  
Heritage Coasts  
World Heritage Sites

### Rule 2:

Avoid smaller areas of high amenity value, or scientific interests by deviation; provided that this can be done without using too many angle towers, ie the more massive structures which are used when lines change direction.

### Note on Rule 2

Some areas (e.g. Site of Special Scientific Interest) may require special consideration for potential effects on ecology (e.g. to their flora and fauna).

Where possible choose routes which minimise the effects on the setting of areas of architectural, historic and archaeological interest including Conservation Areas, Listed Buildings, Listed Parks and Gardens and Ancient Monuments.

#### Rule 3:

Other things being equal, choose the most direct line, with no sharp changes of direction and thus with fewer angle towers.

#### Note of Rule 3

Where possible choose inconspicuous locations for angle towers, terminal towers and sealing end compounds.

#### Rule 4:

Choose tree and hill backgrounds in preference to sky backgrounds wherever possible; and when the line has to cross a ridge, secure this opaque background as long as possible and cross obliquely when a dip in the ridge provides an opportunity. Where it does not, cross directly, preferably between belts of trees.

#### Rule 5:

Prefer moderately open valleys with woods where the apparent height of towers will be reduced, and views of the line will be broken by trees.

#### Note on Rules 4 & 5

Utilise background and foreground features to reduce the apparent height and domination of towers from pan viewpoints.

Minimise the exposure of numbers of towers on prominent ridges and skylines.

Where possible avoiding cutting extensive swathes through woodland blocks and consider opportunities for skirting edges of copses and woods.

Protecting existing vegetation, including woodland and hedgerows, and safeguard visual and ecological links with the surrounding landscape.

#### Rule 6:

In country which is flat and sparsely planted, keep the high voltage lines as far as possible independent of smaller lines, converging routes, distribution poles and other masts, wires and cables, so as to avoid a concentration or 'wirescape'.

Note on Rule 6:

In all locations minimise confusing appearance.

Arrange wherever practicable that parallel or closely related routes are planned with tower types, spans and conductors forming a coherent appearance; where routes need to diverge, allow where practicable sufficient separation to limit the effects on properties and features between the lines.

Rule 7:

Approach urban area through industrial zones, where they exist; and when pleasant residential and recreational land intervenes between the approach line and the substation, go carefully into the comparative costs of the undergrounding, for lines other than those of the highest voltage.

Note on Rule 7

When a line needs to pass through a development area, route it so as to minimise as far as possible the effect on development.

Alignments should be chosen after consideration of effects on the amenity of existing development and on proposals for new development.

When siting substations take account of the effects of the terminal towers and line connections that will need to be made and take advantage of screening features such as ground form and vegetation.

## SUPPLEMENTARY NOTES

### Residential Areas

Avoid routing close to residential areas as far as possible on grounds of general amenity.

### Designations of County, District and Local Value

Where possible choose routes which minimise the effect on Special Landscape Areas, areas of Great Landscape Value and other similar designations of County, District or Local value.

## Alternative Tower Designs

In addition to adopting appropriate routeing, evaluate where appropriate the use of alternative tower designs now available where these would be advantageous visually, and where the extra cost can be justified.

## Appendix S: Horlock 'Rules'



# THE NATIONAL GRID COMPANY plc

## NGC SUBSTATIONS AND THE ENVIRONMENT: GUIDELINES ON SITING AND DESIGN

### Section 1 INTRODUCTION

- 1 The National Grid Company plc's (NGC's) policy statement on the environment recognises the importance of giving due regard to protecting and enhancing the environment and taking into account the environmental effects of the Company's actions. The Company has statutory duties in relation to preservation of amenity under Schedule 9 of the Electricity Act 1989, and has published a Schedule 9 Statement setting out the manner in which it proposes to meet these duties.
- 2 NGC has a statutory duty under the Act to develop and maintain an efficient, co-ordinated and economical transmission system of electricity for England and Wales. New transmission lines, new substations, sealing end compounds, line entries, additions and extensions to existing substations may be required to provide new connections for customers or reinforcement of the national grid system arising from changes in the demand for and generation of electricity.
- 3 This document explains the approach NGC takes towards such developments (Section II) and contains Guidelines (Section III) to assist those responsible for siting and designing substations to mitigate the environmental effects of such developments and so meet the Company's policy. The document complements the Company's Holford Rules guidelines on the routeing of high voltage transmission lines and when appropriate should be used in conjunction with them.
- 4 The guidelines are to be used by NGC staff, their consultants, and contractors in the siting and design of new substations and extensions to substations. They reflect the criteria the company requires its staff, consultants and contractors to satisfy.
- 5 As recognised in its Schedule 9 Statement NGC places importance on consultation with statutory planning and amenity bodies over its proposals for new developments. NGC believes that the availability of these guidelines will assist in such discussions by referring to the main considerations relevant to substation siting, and will thereby assist in achieving the most appropriate siting and design solutions.

## **Section II      NGC'S APPROACH TO DESIGN AND SITING OF SUBSTATIONS**

### **Approach to the Environment**

- 6      NGC's environmental policy recognises the importance of giving due regard to protecting and enhancing the environment and taking into account the effect on the environment of all the Company's actions. Following the principle of integrating environmental considerations into all its activities, NGC seeks to keep known adverse effects on the environment to a reasonably practicable minimum and, in accordance with its duties under Schedule 9 of the Electricity Act, the Company gives due regard to the preservation of amenity and takes reasonable steps to mitigate the effects of its relevant proposals. To achieve these aims the Company therefore has to balance technical, economic and environmental considerations to reach reasonably practicable development proposals.
  
- 7      The guidelines (Section III) deal with the amenity issues associated with the siting and design of new substations and major extensions or major modifications to existing substations. They cover a range of key issues from the time options are initially considered to final design, including form, silhouette and colour of the entire development in relation to the surrounding area, and also related issues such as overhead line entries, since these are dominant features in any substation.

### **Environmental Report**

- 8      In order to achieve these objectives, the environmental effects of new substations and extensions or modifications to existing substations will be assessed and where appropriate an environmental report prepared describing the effects and mitigative measures. Items to be considered are summarised in Appendix A.

### **Integrating Environmental Considerations into Power System Planning**

- 9      The nature of transmission system planning is such that scheme proposals and options may go through various stages before it is finally decided to proceed with construction.
  
- 10     The purpose of each proposal for substation, sealing end compound or line entry development should be set out in a brief, and a range of system and siting options should be evaluated and documented as part of the selection of the preferred solution. In each case the effects of the overall development on the environment should be assessed, prior to a commitment to a particular site or design.
  
- 11     When it is clear a project is likely to proceed, an assessment should be made of any additional skills required to deal effectively with the range of environmental, land use, planning and design issues. Consideration should also be given to consultation as soon as reasonably possible with appropriate statutory planning and amenity bodies.

### **Liaison with other Electricity Companies**

- 12     NGC will encourage and recommend other parties such as power generators or regional electricity companies to adopt these guidelines when

working with NGC on proposals for substations, sealing end compounds or line entries.

### **Post Construction Review**

- 13 Following completion of the project, a review should be undertaken to check that the necessary measures identified in the environmental report have been implemented.

## **Section III GUIDELINES**

### **Overall System Options and Site Selection**

- 1 In the development of system options including new substations, consideration must be given to environmental issues from the earliest stage to balance the technical benefits and capital cost requirements for new developments against the consequential environmental effects in order to keep adverse effects to a reasonably practicable minimum.

### **Amenity, Cultural or Scientific Value of Sites**

- 2 The siting of new NGC substations, sealing end compounds and line entries should as far as reasonably practicable seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections.

- **Notes:**

- 1 *Internationally and nationally designated areas of highest amenity, cultural or scientific value are:*

*National Parks;  
Areas of Outstanding Natural Beauty;  
Heritage Coasts;  
World Heritage Sites;  
Ramsar Sites;  
Sites of Special Scientific Interest;  
National Nature Reserves;  
Special Protection Areas;  
Special Areas of Conservation.*

- 2 *Care should be taken in relation to all historic sites with statutory protection eg Ancient Monuments, Battlefields and Listed Buildings.*

- 3 *Account should be taken of Government Planning Policy Guidance and established codes of practice.*

- 4 *Account should be taken of any development plan policies relevant to the siting or design of substations.*

- 3 **Areas of local amenity value, important existing habitats and landscape features including ancient woodland, historic hedgerows, surface and ground water sources and nature conservation areas**

should be protected as far as reasonably practicable.

### **Local Context, Land Use and Site Planning**

- 4 The siting of substations, extensions and associated proposals should take advantage of the screening provided by land form and existing features and the potential use of site layout and levels to keep intrusion into surrounding areas to a reasonably practicable minimum.**

- **Notes:**

- 1 A preliminary study should be undertaken to identify the extent of land required to meet both operational and environmental needs.*
- 2 In some instances it may be possible to site a substation partially or fully enclosed by existing woodlands.*
- 3 Topographical information should be obtained at an early stage. In some cases a geotechnical survey may be required.*

- 5 The proposals should keep the visual, noise and other environmental effects to a reasonably practicable minimum.**

- **Notes:**

- 1 Allow sufficient space for screening of views by mounding or planting.*
- 2 Consider appropriate noise attenuation measures where necessary.*
- 3 Use security measures which minimise visual intrusion from lighting.*
- 4 Consider appropriate on-site water pollution prevention measures.*
- 5 Consider adjoining uses and the amenity of local inhabitants.*

- 6 The land use effects of the proposal should be considered when planning the siting of substations or extensions.**

- **Notes:**

- 1 Issues for consideration include potential sterilisation of nationally important land, eg Grade 1 agricultural land and sites of nationally scarce minerals.*
- 2 Effects on land drainage.*

### **Design**

- 7 In the design of new substations or line entries, early consideration should be given to the options available for terminal towers, equipment, buildings and ancillary development appropriate to individual locations, seeking to keep effects to a reasonably practicable minimum.**

- **Notes:**

- 1 With outdoor equipment, a preference should be given normally to a low profile design with low height structures and silhouettes*

- appropriate to the background.*
- 2 *Use lightweight narrow section materials for taller structures especially for gantries over about 6 metres in height.*
  - 3 *Commission exterior design and colours appropriate to the surroundings.*
  - 4 *Materials and colours for buildings, equipment and fencing should be chosen to harmonise with local surroundings.*
  - 5 *Where possible avoid the use of prominent insulators by consideration of available colours appropriate to the background.*
  - 6 *Where possible site buildings to act as visual screens for switchgear.*
  - 7 *Ensure that the design of high voltage and low voltage substations is co-ordinated by early consultation between NGC and its customers.*
  - 8 *Where there are particular technical or environmental constraints, it may be appropriate to consider the use of Gas Insulated Switchgear (GIS) equipment which occupies less space and is usually enclosed within a building.*
  - 9 *Early consideration should be given to the routing of utility service connections.*

- 8 Space should be used effectively to limit the area required for development consistent with appropriate mitigation measures and to minimise the adverse effects on existing land use and rights of way, whilst also having regard to future extension of the substation.**

• **Notes:**

- 1 *Assess the benefit of removing redundant substation equipment from existing sites where this would improve their appearance.*

- 9 The design of access roads, perimeter fencing, earthshaping, planting and ancillary development should form an integral part of the site layout and design to fit in with the surroundings.**

**Line Entries**

- 10 In open landscape especially, high voltage line entries should be kept, as far as possible, visually separate from low voltage lines and other overhead lines so as to avoid a confusing appearance.**
- 11 The inter-relationship between towers and substation structures and background and foreground features should be studied to reduce the prominence of structures from main viewpoints. Where practicable the exposure of terminal towers on prominent ridges should be minimised by siting towers against a background of trees rather than open skylines.**

**END**



## NGC SUBSTATIONS – ENVIRONMENTAL REPORT

### Introduction

All proposals for significant extensions of existing substations or for new substations and associated development should be the subject of an environmental appraisal and an environmental report should be produced. The project manager will be responsible for ensuring that an appropriate appraisal is undertaken and report prepared, with due regard to expert advice available to the team.

For a major development a scoping exercise should be undertaken with the contribution of appropriate skills to establish the range and depth of the appraisal. It will generally be appropriate at this stage to consider consultation with the local planning authority.

A clear distinction should be drawn between the preparation of an environmental report which will be undertaken in most cases and a full environmental statement (ES) which may on occasion be required under UK environmental assessment legislation, for example where the substation forms part of a major new power station for which an ES may be needed.

### Recommended Content of Environmental Reports for Substations

#### Section 1

Information describing the project during construction, when operational and on de-commissioning including:-

- 1.1 Purpose and physical characteristics of the project, including details of access and transport arrangements and employment.
- 1.2 Land use requirements and other physical features of the project.
- 1.3 Operational features of the project and relevant measurements of emissions such as noise, vibration, light, heat and electric and magnetic fields.
- 1.4 Main alternative sites considered and reasons for final choice.

#### Section 2

Information describing the site and its environment including:-

- 2.1 Physical features such as
  - Flora and fauna
  - Soil: agricultural quality, geology
  - Water courses including land drainage generally
  - Climatic factors

- Historic heritage and archaeological sites
- Landscape and topography
- Local recreational uses
- Proximity of population and any other relevant environmental features.

## 2.2 The policy framework

The policy framework including all relevant statutory designations such as national nature reserves, sites of special scientific interest, national parks, areas of outstanding natural beauty, heritage coasts, special protection areas, special areas of conservation, regional parks, country parks, national forest parks, local nature reserves, areas affected by tree preservation orders, water protection zones, minerals protection zones, nitrate sensitive areas, conservation areas, listed buildings, scheduled ancient monuments, and designated areas of archaeological importance. It should also include references to Structure, Unitary and Local plan policies applying to the site and the surrounding area which are relevant to the proposed development as well as to any international designations.

## Section 3

Assessment of effects on the surrounding area and landscape including:-

- 3.1 Visual effects, emissions during normal operation, noise, light, impact on local roads and transport.
- 3.2 Effects of the development on buildings, the architectural and historic heritage and archaeological features.
- 3.3 Loss of, and damage to flora, fauna and geology.
- 3.4 Land use/resource effects such as
  - quality and quantity of agricultural land to be taken
  - sterilisation of mineral resources and alternative uses of the site.
- 3.5 Changes to hydrographic characteristics.
- 3.6 Air and Climate
- 3.7 Indirect matters such as
  - traffic (road, rail, air, water) related to the development,
  - development associated with the project, eg new roads, sewers, power lines, pipelines, telecommunications etc.

## Section 4

Mitigation measures

- 4.1 Where significant adverse effects are identified, a description of the measures to be taken to avoid, reduce or remedy those effects, eg
  - a) site planning;

- b) technical measures eg equipment selection, recycling of waste or redundant parts, pollution control and treatment, containment (eg shielding of transformers and bunding)
- c) aesthetic and ecological measures eg
  - mounding, design, colour, landscaping, tree planting
  - measures to preserve particular habitats or create alternative habitats
  - recording of archaeological sites
  - measures to safeguard historic buildings or sites.

**END**

Appendix T: Sensitive locations map and Sensitive locations postcode response map

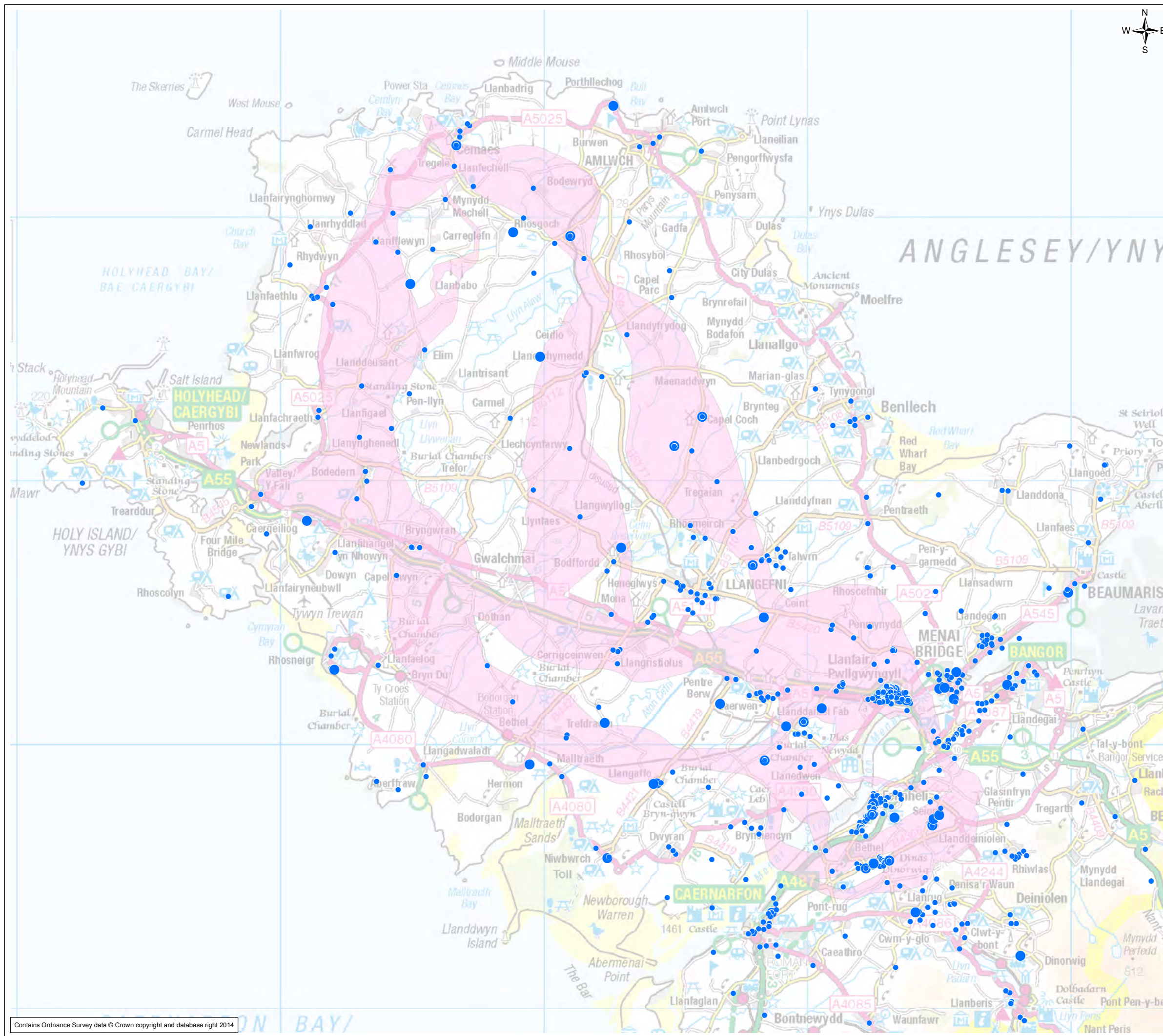
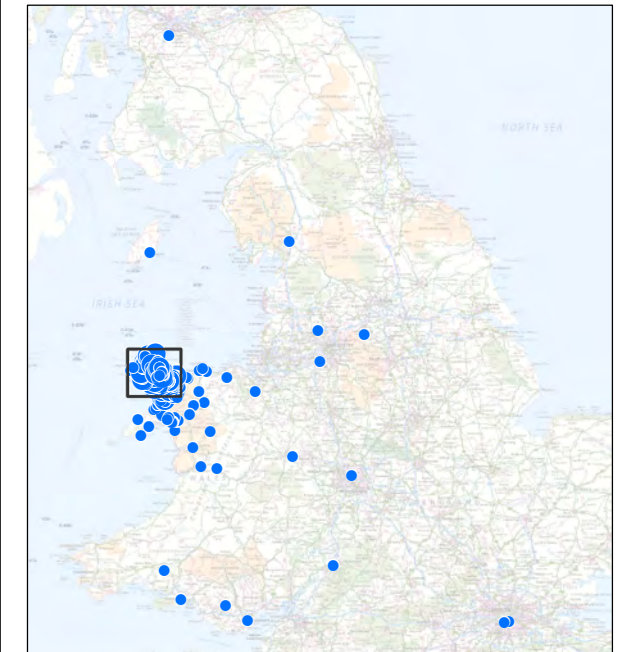




Legend

- Wylfa-Pentir corridors and crossing options
  - Consultee Postcode - No Q7 comments (1437)
  - Consultee Postcode - With Q7 comments (62)
- Consultees who answered Question Q7 and expressed opinion on locations which should be avoided by transmission line proposals (see Figure 02).

Inset map shows full extent of consultee postcodes. Of the 1549 responses captured, 1390 (90%) had a valid postcode which was matched to XY coordinates using OS AddressBase. 109 (7%) records were located using other address information (e.g. house, street, town). 50 (3%) records did not provide sufficient information to generate an XY coordinate and are not represented by a location on this map.



0	JUN 14	Initial Issue	AD	PG	MR	CR
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
<p>1 City Walk, Leeds, LS11 9DX, UK. Tel: +44(0)113 242 6771 Fax: +44(0)113 389 1389 www.jacobs.com</p>						
Client						
Project						
NORTH WALES CONNECTION PROJECT WYLFA TO PENTIR OVERHEAD ELECTRICITY TRANSMISSION LINE						
Drawing Title						
WYLFA-PENTIR CONSULTEE POSTCODE ORIGINS						
Drawing Status						
FINAL						
Scale @A3	1:140,000		DO NOT SCALE			
Jacobs No.	B2200000					
Client No.						
Drawing No.	B2200000-WP-CPC-01					
This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.						





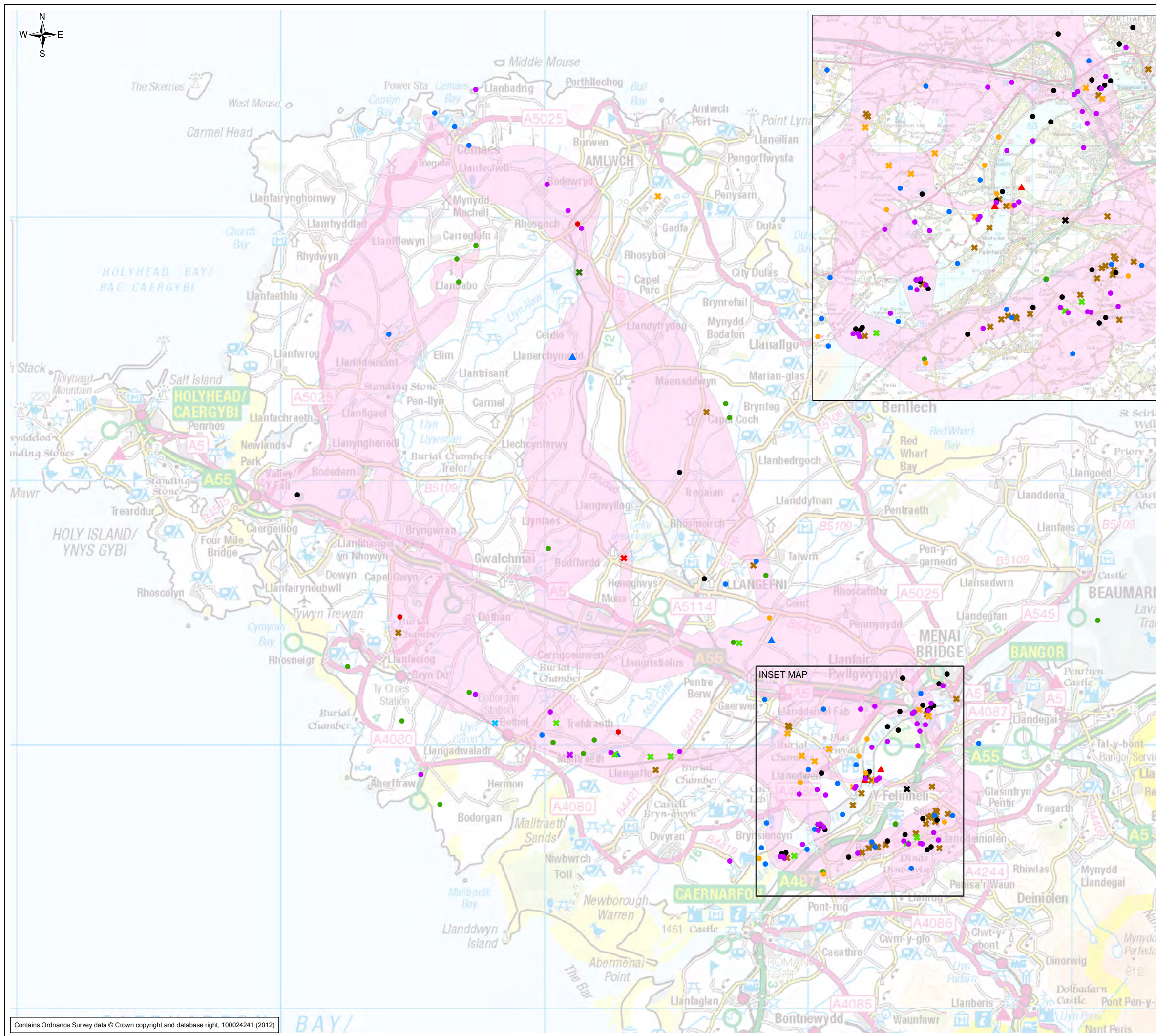
Legend

Wylfa-Pentir corridors and crossing options

Public or stakeholder suggestions for areas to be avoided. Locations captured from paper and web site forms to express areas that consultees thought were sensitive

- Cultural Heritage
- Ecology
- Landscape
- Socio-Economic
- Aviation
- ✕ Ecology and Socio-Economic
- ✕ Ecology and Aviation
- ✕ Socio-Economic and Aviation
- ✕ Cultural Heritage and Socio-Economic
- ✕ Landscape and Aviation
- ✕ Landscape and Cultural Heritage
- ✕ Landscape and Ecology
- ✕ Landscape and Socio-Economic
- ▲ Landscape, Cultural Heritage and Socio-Economic
- ▲ Landscape, Ecology and Socio-Economic
- Other / Non-Specific

Inset map shows further detail on concentrated responses around Menai Straits. 165 points were captured from 62 consultation responses (146 from paper forms and 19 from the web site). An additional 23 points were interpreted from other sections of feedback forms, letters and emails.



2	JUN 14	Final Issue	AD	MR	MR	CR
1	JUN 13	Revised with Categories	PW	AD	MR	SM
0	MAR 13	Initial Issue	PW	AD	PG	MR
Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd

**JACOBS**

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Tel: +44(0)118 946 7000 Fax: +44(0)118 946 7001  
www.jacobs.com

Client  
**nationalgrid**

Project  
NORTH WALES CONNECTION PROJECT  
WYLFA TO PENTIR OVERHEAD ELECTRICITY TRANSMISSION LINE

Drawing Title  
PUBLIC AND STAKEHOLDER  
SUGGESTIONS FOR SENSITIVE LOCATIONS

Drawing Status  
FINAL

Scale @A3  
1:140,000 DO NOT SCALE

Jacobs No.  
B2200000

Drawing No.  
B2200000-WP-BP#2-01-rev2

This drawing is not to be used in whole or in part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions.



## Appendix U: Anglesey Energy Island Programme advertorial

## MAE RHAGLEN YNYS YNNI MÔN YN SBARDUN ALLWEDDOL AR GYFER TWF CYFLOGAETH NEWYDD A CHYFLEOEDD DATBLYGU -

Ei nod yw harneisio cymysgedd cyfoethog o ffrydiau ynni - gan gynnwys niwclear, gwynt, llanw, biomas, solar; a phrosiectau gwasanaethu cysylltiedig - i ddod â manteision economaidd, cymdeithasol ac amgylcheddol mawr i Ynys Môn.

Mae chyfleoedd a gynnig gan ddatblygiadau ynni carbon isel yn hanfodol bwysig i ddatblygiad economaidd ac adfywiad ehangach Gogledd Cymru a'i chymunedau lleol.

Mae gan y rhaglen yn ddi-os y potensial i gyffwrdd â phob agwedd o fywyd yr Ynys a gallai hefyd ddarparu cyfleoedd ar gyfer cysylltiadau trafniadaeth a thai gwell; cyfleusterau twristiaeth a hamdden.

### Ymgynghoriadau Allweddol yn ystod 2012 -

Mae gweithio mewn partneriaeth rhwng cydranddeiliaid cyhoeddus a phreifat yn hanfodol i lwyddiant y rhaglen.

Mae Rhaglen Ynys Ynni felly yn awyddus i hysbysu preswylwyr am nifer o ymgynghoriadau cyhoeddus allweddol a gynlluniwyd gan ei bartneriaid yn ystod 2012.

**Y Comisiwn Cynllunio Seilwaith (IPC)** - Yr IPC yw'r corff annibynnol sy'n archwilio ceisiadau ar gyfer prosiectau seilwaith o bwys cenedlaethol, gan gynnwys gorsafedd ynni a ffermydd gwynt mawr. <http://infrastructure.independent.gov.uk/projects>

Mae Rhaglen Prosiectau IPC yn manylu ar y cynigion sy'n disgwyl cael eu cyflwyno i'r IPC fel ceisiadau yn y misoedd nesaf. Gellir ei gweld ar [www.independent.gov.uk/isadeilledd](http://www.independent.gov.uk/isadeilledd)

Mae'r IPC yn cefnogi'r broses hon drwy ddarparu cyngor ac arweiniad, tîm prosiect ymroddedig a sesiynau allgymorth. Bydd yr IPC yn cynnal sesiynau allgymorth lleol wedi eu cydlynu â, ond ar wahân i, broses ymgynghoriad Horizon Nuclear Power.

Gellir cyfeirio ymholiadau i:  
Comisiwn Cynllunio Seilwaith (IPC)  
Temple Quay House, Temple Quay, Bryste, BS1 6PN  
0303 444 5000  
[ipcenquiries@infrastructure.gsi.gov.uk](mailto:ipcenquiries@infrastructure.gsi.gov.uk)

## ANGLESEY'S ENERGY ISLAND PROGRAMME IS A KEY DRIVER FOR NEW EMPLOYMENT GROWTH AND DEVELOPMENT OPPORTUNITIES -

It aims to harness a rich mix of energy streams - including nuclear, wind, tidal, biomass, solar; and associated servicing projects - to bring huge economic, social and environmental benefits to Anglesey.

Opportunities offered by low carbon energy developments are of critical importance to the wider economic development and regeneration of North Wales and its local communities.

The programme undoubtedly has the potential to touch every aspect of Island life and could also provide opportunities for improved transport links and housing; tourism and leisure facilities.

**Key consultations during 2012** - Partnership working between public and private stakeholders is vital to the programme's success.

The Energy Island Programme therefore wishes to notify residents about a number of key public consultations planned by its partners during 2012.

**Infrastructure Planning Commission (IPC)** - The IPC is the independent body that examines applications for nationally significant infrastructure projects, including power stations and large wind farms. <http://infrastructure.independent.gov.uk/projects>

The IPC Programme of Projects details the proposals which are anticipated to be submitted to the IPC as applications in the coming months. It can be viewed at [www.independent.gov.uk/infrastructure](http://www.independent.gov.uk/infrastructure)

IPC supports this process by providing advice and guidance, a dedicated project team and outreach sessions. The IPC will undertake local outreach sessions co-ordinated with, but separate to, Horizon Nuclear Power's own consultation process.

Enquiries can be made to:  
Infrastructure Planning Commission (IPC)  
Temple Quay House, Temple Quay, Bristol, BS1 6PN  
0303 444 5000  
[ipcenquiries@infrastructure.gsi.gov.uk](mailto:ipcenquiries@infrastructure.gsi.gov.uk)

**Centrica Energy Renewable Investments Limited** - Ym mis Chwefror, bydd Centrica Energy Renewable Investments Limited (CERI) - rhan o grŵp Centrica - yn cynnal cyfres o ddyddiau gwytodaeth i'r cyhoedd am ei gynigion i ddatblygu ffermydd gwynt ar y môr ym Môr Iwerddon.

Mae Parth Môr Iwerddon yn cwmpasu ardal o 2,200 km<sup>2</sup>, ac mae ei bwynt deheuol agosaf 15km o arfordir gogledd Ynys Môn. Mae CERI eisoes wedi cynnal ymgynghoriadau anffurfiol ac arolygon i gael gwell dealltwriaeth o'r ardaloedd hynny ar y môr a all fod yn addas ar gyfer datblygiad. Cyn gynted ag y bydd y ffermydd prosiectau gwynt yn cael eu nodi, bydd CERI'n ymgynghori'n ffurfiol.

Bydd CERI cyn bo hir yn cynnal pum niwrnod gwytodaeth gyhoeddus i esbonio'r gwaith a wnaed hyd yn hyn, ateb unrhyw gwestiynau a derbyn unrhyw sylwadau adeiladol ar ei gynigion. Dewch draw, edrychwch ar yr arddangosfa ac achubwch ar y cyfle i ddweud eich dweud.

13 Chwefror - Llyfrgell Bangor (1:00-7:00pm)  
14 Chwefror - Neuadd y Dref, Caergybi (2:00-8:00pm)  
15 Chwefror - Venue Cymru, Y Promenâd, Llandudno (2:00-8:00pm)  
16 Chwefror - Gwesty'r Bull, Llangefni (2:00-8:00pm)  
17 Chwefror - Neuadd Goffa Rhyfel Amlwch (2:00-8:00pm)

Bydd cylchlythyr am Barth Môr Iwerddon ar gael mewn llyfrgelloedd lleol a gellir ei lawrlwytho o [www.centrica.com/renewables](http://www.centrica.com/renewables)

**Horizon Nuclear Power** - Yn fuan, bydd Horizon Nuclear Power yn lansio ei gyfnod pwysig cyntaf o ymgynghoriad cyhoeddus. Hwn fydd y cyfle cyntaf i bobl Ynys Môn a Gogledd Cymru weld cynlluniau manylach ar gyfer gorsaf bŵer niwclear newydd - a helpu i lunio y cynigion hyn drwy roi eu barn.

Mae Datganiad Ymgynghoriad Cymunedol (SOCC) Horizon a gyhoeddwyd yn ddiweddar yn esbonio sut y gallwch gael at y wybodaeth am y prosiect a rhoi sylwadau ar ei agweddau amrywiol. Gallwch lawrlwytho'r SOCC o <http://www.horizonnuclearpower.com/hafan>

Os oes gennych unrhyw gwestiynau neu adborth ar brosiect Wylfa, ffoniwch 0800 954 9516 os gwelwch yn dda neu anfonwch e-bost i: [ymholiadauwylfa@horizonnuclearpower.com](mailto:ymholiadauwylfa@horizonnuclearpower.com)

### Centrica Energy Renewable Investments Limited -

In February, Centrica Energy Renewable Investments Limited (CERI) - part of the Centrica group - will be holding a series of public information days on its proposals to developing offshore wind farms in the Irish Sea.

The Irish Sea Zone covers an area of 2,200km<sup>2</sup>, and its closest southerly point is 15km from Anglesey's north coastline. CERI has already carried out informal consultations and surveys to gain a better understanding of which offshore areas might be suitable for development. As soon as wind farms projects are identified, CERI will consult formally.

CERI will soon be holding five public information days to explain the work done so far, answer any questions and hear any constructive comment on its proposals. Come along, look at the exhibition, and have your say.

February 13 - Bangor Library (1:00-7:00pm)  
February 14 - Holyhead Town Hall (2:00-8:00pm)  
February 15 - Venue Cymru, The Promenade, Llandudno (2:00-8:00pm)  
February 16 - Bull Hotel, Llangefni (2:00-8:00pm)  
February 17 - Amlwch War Memorial Hall (2:00-8:00pm)

A newsletter about the Irish Sea Zone is being made available in local libraries and can also be downloaded from [www.centrica.com/renewables](http://www.centrica.com/renewables)

**Horizon Nuclear Power** - Horizon Nuclear Power will soon launch its important first period of public consultation. This will give the people from Anglesey and North Wales their first chance to see plans for a new nuclear power station in more detail - and help shape these proposals by providing their views.

Horizon's recently published Statement of Community Consultation (SOCC) explains how you can access the information about the project and comment on its various aspects. The SOCC can be downloaded from [www.horizonnuclearpower.com](http://www.horizonnuclearpower.com)

If you have any questions or feedback on the Wylfa project, please contact 0800 954 9516 or e-mail: [wylfaenquiries@horizonnuclearpower.com](mailto:wylfaenquiries@horizonnuclearpower.com)

**Y Grid Cenedlaethol** - Mae'r Grid Cenedlaethol yn ganolog i'r diwydiant ynni, mae ganddynt gyfrifoldeb i gysylltu pobl â'r ynni y maent yn ei ddefnyddio.

Bydd angen cysylltu'r prosiectau sylweddol o ran ynni carbon isel sy'n cael eu cynnig gan Horizon Nuclear Power a Centrica Energy Renewable Investments Limited i'r rhwydwaith trawsyrru cenedlaethol ac mae'r Grid Cenedlaethol wrthi ar hyn o bryd yn edrych ar yr holl opsiynau ar gyfer gwneud y cyswllt hwn.

Mae'r Grid Cenedlaethol wedi ymrwymo i gynnwys cymunedau lleol yn y broses o wneud penderfyniadau ac, yn ddiweddarach eleni, bydd yn cychwyn y rhan gyntaf o'r ymgynghoriad cyhoeddus a bydd y broses hon yn cael cyhoedusrwydd eang.

Yn y cyfamser, am fwy o wybodaeth ewch i:  
[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)  
Gallwch hefyd gysylltu â ni fel a ganlyn:  
Ffôn: 0800 990 3567  
E-bost: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)

### Trwyddedau yn cynnig rheolaeth amgylcheddol gadarn -

Bydd llawer o'r prosiectau angen rheolaeth amgylcheddol lem cyn y gallant fynd ymlaen.

Bydd caniatadau Asiantaeth yr Amgylchedd Cymru yn gosod safonau llym o ran gollyngiadau i'r aer; y tir a dŵr. Byddant hefyd yn lleihau'r perygl o lifogydd ac yn gwarchod anifeiliaid a'u cynefinoedd.

Bydd y caniatadau hyn yn pennu amodau caeth i reoli sut y bydd safleoedd arfaethedig yn cael eu datblygu a'u gweithredu - gan sicrhau nad ydynt yn peri unrhyw risg sylweddol i iechyd pobl neu'r amgylchedd.

Bydd safleoedd â chaniatâd amgylcheddol yn cael eu rheoleiddio ar gyfer eu hoes i wneud yn siŵr eu bod yn cydymffurfio'n llawn. Am fwy o wybodaeth am rôl Asiantaeth yr Amgylchedd Cymru ewch i <http://www.environment-agency.gov.uk/cy/default.aspx>

**Am fwy o wybodaeth am y Rhaglen Ynys Ynni Môn (RhYY) neu unrhyw un o'r ymgynghoriadau cyhoeddus hyn sydd ar y gweill, cysylltwch â Linda Wyn Jones Cyd-lynydd Swyddfa RhYY ar 01248 752462**

**National Grid** - National Grid sits at the heart of the energy industry; they have responsibility to connect people to the energy they use.

The significant low carbon energy generation being proposed by Horizon Nuclear Power and Centrica Energy Renewable Investments Limited will need connecting to the national transmission network and National Grid is currently looking into all the options for making this connection.

National Grid is committed to involving local communities in the decision making process and later this year will begin its first stage of public consultation which will be widely publicised.

In the meantime, for more information please visit: [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

You can also contact us via:  
Phone: 0800 990 3567  
E-mail: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)  
Freepost: FREEPOST NATIONAL GRID, NW CONNECTION

**Permits provide strict environmental controls** - Many of the projects will require strict environmental control before they can proceed.

Environment Agency Wales permits will set tough standards for emissions to air, land and water. They will also minimise flood risk and protect animals and their habitats.

These permits will set strict conditions to control how proposed sites are developed and operated - ensuring they pose no significant risk to human health or the environment.

Sites granted an environmental permit will be regulated for their lifetime to make sure they fully comply. For more information about the role of Environment Agency Wales visit [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

**For more information about the Anglesey Energy Island Programme (EIP) or any of these forthcoming public consultations, please contact Linda Wyn Jones EIP Office Co-ordinator on 01248 752462**

## Appendix V: Abbreviations

## APPENDIX V

## Abbreviations

AM	Assembly Member
AONB	Area of Outstanding Natural Beauty
CCW	Countryside Council for Wales
CPRW	The Campaign for the Protection of Rural Wales
CWS	County Wildlife Sites
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EMF	Electric and Magnetic Fields
GW	Gigawatts
HVDC	High-Voltage Direct Current
kV	Kilovolts
IPC	Infrastructure Planning Commission
MoD	Ministry of Defence
MP	Member of Parliament
MWe	Megawatt Electrical
NFU	National Farmers Union
NG	National Grid
NPS	National Policy Statement
NID	National Infrastructure Directorate
NSIP	Nationally Significant Infrastructure Project
RAF	Royal Air Force
RSGB	Radio Society of Great Britain
SAC	Special Area of Conservation
SOR	Strategic Options Report
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
The Act	The Planning Act 2008
UNESCO	United Nations Educational, Scientific and Cultural Organisation



national**grid**

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**6.2.4**

**Appendix 4**

**Stage One Consultation Exhibition Panels All**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

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Mae eich safbwyntiau'n bwysig dros ben i ni a byddan nhw'n ein helpu i wneud ein penderfyniadau. Your views are extremely important to us and will help inform the decisions we make.



## Croeso i'n harddangosfa

Croeso i'r arddangosfa heddiw am gynlluniau National Grid i gysylltu'r prosiectau cynhyrchu trydan newydd arfaethedig yng Ngogledd Cymru â'n system drydan.

Mae'r DU yn wynebu her ynni enfawr a fydd yn effeithio ar bob un ohonom ni. Mae angen ton newydd o gynhyrchu ynni carbon isel er mwyn cyrraedd targedau newid hinsawdd a disodli gorsafoedd pŵer sy'n mynd yn hŷn.

Heddiw, gallwch chi ddysgu am swyddogaeth bwysig National Grid yn cysylltu'r prosiectau cynhyrchu trydan newydd hyn â'r rhwydwaith trawsyrru.

Ar ôl cyfnod helaeth o asesu a gwerthuso, rydym nawr yn awyddus i glywed eich safbwyntiau a'ch barn am ein cynigion. Mae aelodau o'r tîm yma heddiw i wrando ar beth sydd gennych chi i'w ddweud ac i helpu i ateb eich cwestiynau. Mae gennym ni lawer o wybodaeth am y gwaith rydym wedi bod yn ei wneud, a fydd yn eich helpu i gyflwyno sylwadau a rhoi adborth fel rhan o'r ymgynghoriad hwn.

Mae eich safbwyntiau'n bwysig dros ben i ni a byddan nhw'n ein helpu i wneud ein penderfyniadau.

**Martin Kinsey**  
Uwch Reolwr y Prosiect



### Dweud eich dweud

Mae gennych chi ran bwysig i'w chwarae drwy ein helpu i ddatblygu ein cynigion.

Gallwch gofrestru eich safbwyntiau drwy lenwi ffurflen adborth, sydd ar gael yn yr arddangosfa heddiw. I gael gwybod mwy, siaradwch ag aelod o'r tîm a fydd yn fodlon ateb eich cwestiynau.

## Welcome to our exhibition

Welcome to today's exhibition about National Grid's plans to connect proposed new electricity generation in North Wales to our electricity system.

The UK is facing a major energy challenge which will affect all of us. To meet climate change targets and replace ageing power stations, a new wave of low carbon energy generation is needed.

Today, you can find out about National Grid's important role in connecting this new electricity generation to the transmission network.

Following an extensive period of assessment and evaluation, we are now keen to hear your thoughts and views on our proposals. Members of the team are here today to listen to what you have to say and help answer your questions. We also have lots of information about the work we have been doing, which will help you comment and provide feedback as part of this consultation.

Your views are extremely important to us and will help inform the decisions we make.

**Martin Kinsey**  
Senior Project Manager



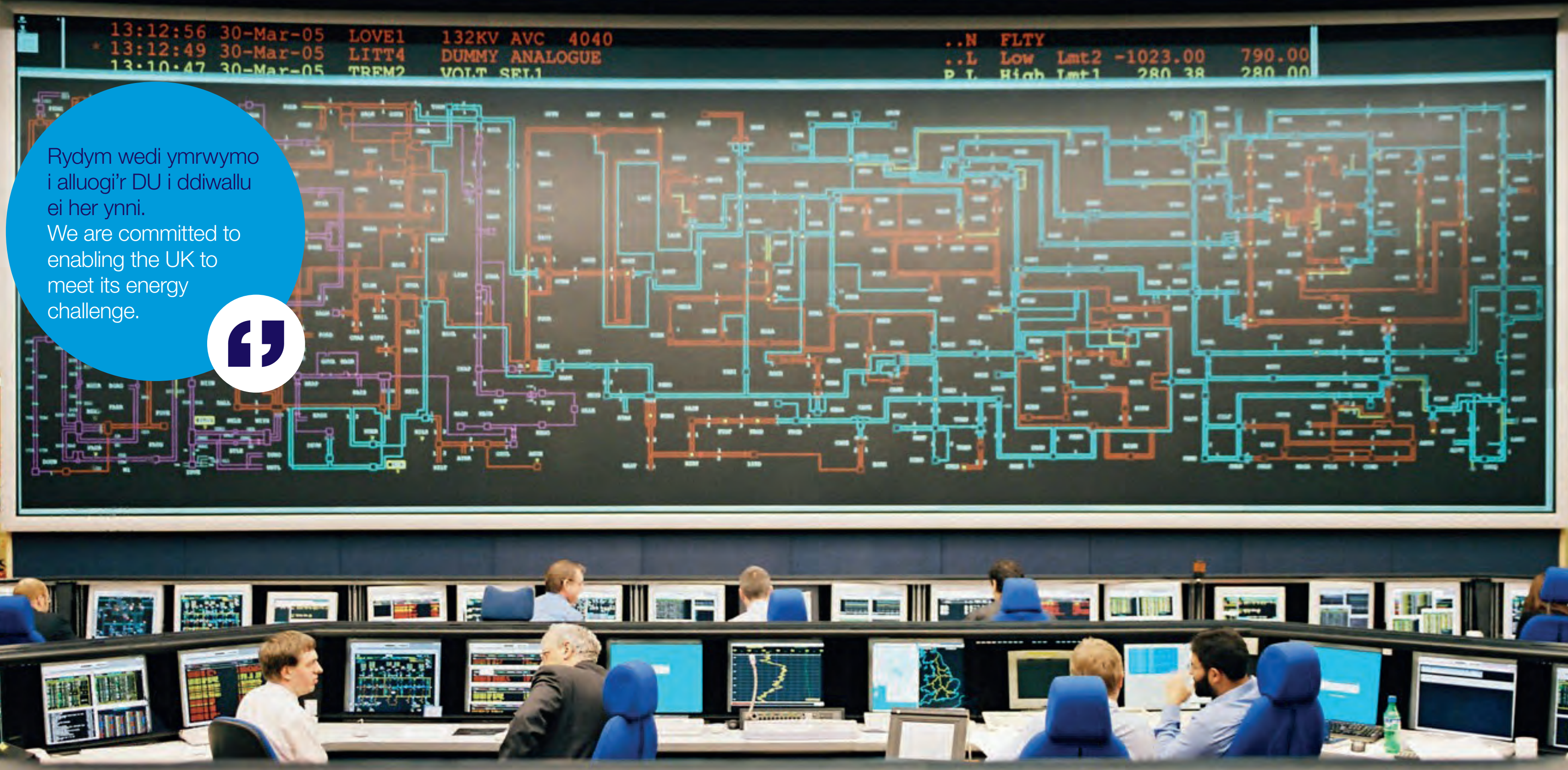
### Have your say

You have an important role to play in helping us to develop our proposals.

You can register your views by completing a feedback form, which is available at today's exhibition. For more information, please talk to a member of the team who will be happy to answer your questions.







Rydym wedi ymrwymo i alluogi'r DU i ddiwallu ei her ynni. We are committed to enabling the UK to meet its energy challenge.



## National Grid a'r Her Ynni

Gwaith National Grid yw cysylltu pobl â'r ynni maen nhw'n ei ddefnyddio; yr ynni maen nhw'n ei ddefnyddio i gynhesu a goleuo eu cartrefi, y pŵer sy'n cadw ein ffatrïoedd a'n swyddfeydd i fynd, a'r seilwaith sy'n hanfodol i'n ffordd fodern o fyw.

Mae hyn yn golygu bod National Grid wrth galon un o'r heriau mwyaf sy'n wynebu ein cymdeithas; yr angen i symud at don newydd o gynhyrchu ynni carbon isel.

Amcangyfrifir y bydd angen disodli tua chwarter y trydan sy'n cael ei gynhyrchu yn y DU dros y 10-15 mlynedd nesaf. Mae hyn yn peri her wrth i fathau presennol o gynhyrchu, fel gorsafoedd pŵer olew a glo, gael eu disodli â thanwydd ffosil 'glanach' fel nwy, yn ogystal â niwclear ac ynni adnewyddadwy fel pŵer gwynt.

Yn National Grid rydym wedi ymrwymo i alluogi'r DU i ddiwallu ei her ynni ac rydym yn bwriadu buddsoddi £31 biliwn i wella rhwydweithiau trydan a nwy y DU erbyn 2021. Bydd y gwaith hwn yn cysylltu prosiectau cynhyrchu ynni newydd ar draws y wlad mewn ffordd ddiogel, effeithlon a chost effeithiol, gan ystyried ein hamgylchedd.



### Rhagor o wybodaeth

Gallwch ddysgu mwy am yr her ynni a'r angen i'r DU symud tuag at ffynonellau newydd o gynhyrchu carbon isel yn: [www.ofgem.gov.uk/sustainability](http://www.ofgem.gov.uk/sustainability)

## National Grid and the Energy Challenge

National Grid's job is to connect people to the energy they use; the energy they use to warm and light their homes, the power which keeps our factories and offices going, and the infrastructure essential to our modern lifestyle.

This puts National Grid at the heart of one of the greatest challenges facing our society; the need to move towards a new wave of low carbon energy generation.

It is estimated that around a quarter of the UK's existing electricity generation will need replacing over the next 10-15 years. This presents a challenge as existing forms of generation, such as oil and coal fired power stations, are replaced with new 'cleaner' fossil fuels, such as gas, as well as nuclear and renewables such as wind power.

At National Grid, we are committed to enabling the UK to meet its energy challenge and our level of investment in improving the UK's gas and electricity networks is planned to reach £31 billion through to 2021. This work will connect new energy generation projects across the country in a safe, efficient and cost effective way, and with regard to the environment in which we live.



### For more information

You can find out more about the energy challenge and the UK's need to move toward new sources of low carbon energy generation from: [www.ofgem.gov.uk/sustainability](http://www.ofgem.gov.uk/sustainability)

C  
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M  
A





## Y rhwydwaith yng Ngogledd Cymru ar hyn o bryd

Yng Ngogledd Cymru, mae nifer o brosiectau ynni carbon isel ar y gweill a bydd angen eu cysylltu â'r rhwydwaith trawsyrru.

Mae gan Horizon Nuclear Power gontract gyda National Grid i gysylltu gorsaf bŵer niwclear newydd hyd at 3.6 gigawat (GW) yn Wylfa. Mae gennym hefyd gontract i gysylltu 2 GW o ynni gwynt ar y môr sy'n cael ei gynnig gan Celtic Array ym Môr Iwerddon, a fydd hefyd yn cysylltu ar Ynys Môn.

Mae'r llinell uwchben 400 kV ar Ynys Môn yn rhedeg rhwng is-orsaf National Grid yn Wylfa a'r un ym Mhentir, Gwynedd. Hyd yn oed pan fydd gorsaf bŵer niwclear 1 GW bresennol Magnox wedi cael ei datgomisiynu, ni fyddai'r llinell uwchben bresennol yn ddigon i ddelio â'r holl ynni newydd y bwriedir ei gynhyrchu.

Er nad yw cyfranddalwyr Horizon, RWE npower ac E.ON, yn bwrw ymlaen â'r cynlluniau ar gyfer cynhyrchu pŵer niwclear yn y DU, mae Horizon yn hyderus y byddan nhw'n dod o hyd i brynwr newydd, ac wedi cadw eu contract â National Grid. Rydyn ni'n bwrw ymlaen â'n hymgynghoriad i sicrhau bod y prosiect mawr a thechnegol gymhleth hwn felly'n aros ar y trywydd iawn.



### Rhagor o wybodaeth

Mae prosiectau cynhyrchu ynni carbon isel sylweddol yn cael eu cynnig yng Ngogledd Cymru. Yn ogystal â siarad â National Grid, mae rhagor o wybodaeth ar gael gan:

#### Rhaglen Ynys Ynni Ynys Môn

Mae'r fenter hon wedi'i harwain gan Gyngor Sir Ynys Môn ac mae wedi'i hanelu at wneud Ynys Môn yn ganolfan ar gyfer cynhyrchu ynni newydd.

Ffôn: 01248 752431

Gwefan: [www.ynysmon.gov.uk/busnes/ynys-ynni](http://www.ynysmon.gov.uk/busnes/ynys-ynni)

#### Horizon Nuclear Power

Maen nhw'n cynnig adeiladu gorsaf bŵer niwclear newydd ar Ynys Môn

Ffôn: 0800 954 9516

Gwefan: [www.horizonnuclearpower.com](http://www.horizonnuclearpower.com)

#### Celtic Array

Maen nhw'n cynnig fferm wynt ar y môr ym Môr Iwerddon

Ffôn: 0330 1000 051

Gwefan: [www.celticarray.com](http://www.celticarray.com)

## The existing network in North Wales

In North Wales, a number of low carbon energy projects are being proposed and will need connecting to the transmission network.

Horizon Nuclear Power has a contract with National Grid to connect a new nuclear power station of up to 3.6 gigawatts (GW) at Wylfa. We also have a contract to connect 2 GW of offshore wind energy being proposed by Celtic Array in the Irish Sea, which will also connect on Anglesey.

The existing 400 kV overhead line on Anglesey runs between a National Grid substation at Wylfa and one at Pentir, Gwynedd. Even when the existing 1 GW Magnox nuclear power station has been decommissioned, the existing overhead line would not be able to accommodate all of the new generation that is being planned.

While Horizon's shareholders, RWE npower and E.ON, are not proceeding with plans for nuclear power generation in the UK, Horizon is optimistic a new buyer will be found, and have kept their contract with National Grid in place. We are continuing with our consultation to ensure what is a large and therefore technically complex project remains on track.



### For more information

Significant new low carbon energy generation is being proposed in North Wales. As well as talking to National Grid, you can find out more information from:

#### Anglesey Energy Island Programme

Led by the Isle of Anglesey County Council, this initiative is aiming to make Anglesey a hub for new energy generation.

Tel: 01248 752431

Website: [www.anglesey.gov.uk/business/energy-island](http://www.anglesey.gov.uk/business/energy-island)

#### Horizon Nuclear Power

Proposing a new nuclear power station on Anglesey

Tel: 0800 954 9516

Website: [www.horizonnuclearpower.com](http://www.horizonnuclearpower.com)

#### Celtic Array

Proposing a new offshore wind farm in the Irish Sea

Tel: 0330 1000 051

Web: [www.celticarray.com](http://www.celticarray.com)





Y DEWISIADAU CYSYLLTU A YSTYRIWYD GENNYM:

Dan y môr S

**Dan y môr**

- Byddai angen cysylltiad newydd o dan y môr; naill ai rhwng Wylfa a Glannau Dyfrdwy a rhwng Wylfa a Phenfro.

Dan y môr/Dros dir S WG GP

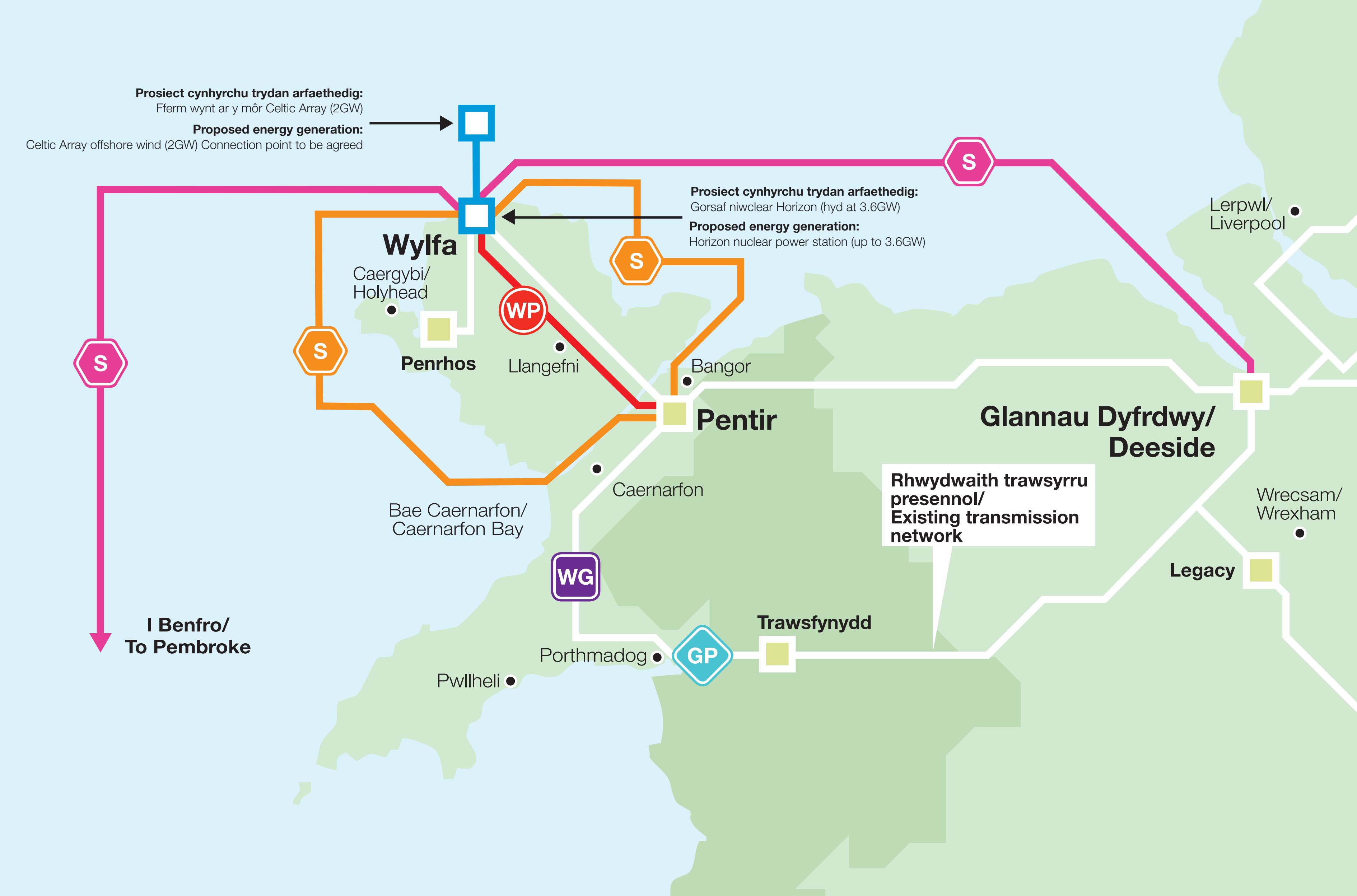
**Dan y môr ac uwchben/dan y ddaear**

- Byddai angen cysylltiad newydd o dan y môr, o amgylch arfordir gorllewinol neu ddwyreiniol yr ynys rhwng Wylfa a Phenfro.
- Byddai'n rhaid cael cysylltiad ychwanegol, naill ai uwchben neu o dan y ddaear, i gryfhau'r rhwydwaith yn Aber Afon Glaslyn.
- Byddai angen is-orsaf newydd yng Ngorllewin Gwynedd hefyd.
- Byddai hefyd angen gwneud rhywfaint o waith ychwanegol i'r system bresennol.

Dros dir WP WG GP

**Uwchben/dan y ddaear rhwng Wylfa-Pentir-Trawsfynydd**

- Byddai angen cysylltiad ychwanegol, naill ai uwchben neu o dan y ddaear, rhwng Wylfa a Phenfro.
- Byddai'n rhaid cael cysylltiad ychwanegol, naill ai uwchben neu o dan y ddaear, i gryfhau'r rhwydwaith yn Aber Afon Glaslyn.
- Byddai angen is-orsaf newydd yng Ngorllewin Gwynedd hefyd.
- Byddai hefyd angen gwneud rhywfaint o waith ychwanegol i'r system bresennol.



THE CONNECTION OPTIONS WE CONSIDERED:

Subsea S

**Subsea**

- A new subsea connection would be needed; either between Wylfa and Deeside and between Wylfa and Pembroke.

Subsea/Overland S WG GP

**Subsea, and overhead/underground**

- A new subsea connection would be needed around the west or east coast of the island between Wylfa and Pentir.
- An additional connection would be required, either overhead or underground, to strengthen the network at the Glaslyn Estuary.
- A new substation in West Gwynedd would also be needed.
- Some additional works to the existing system would also be required.

Overland WP WG GP

**Overhead/underground between Wylfa-Pentir-Trawsfynydd**

- An additional connection would be needed, either overhead or underground, between Wylfa and Pentir.
- An additional connection would be required, either overhead or underground, to strengthen the network at the Glaslyn Estuary.
- A new substation in West Gwynedd would also be needed.
- Some additional works to the existing system would also be required.

## Y rhwydwaith yng Ngogledd Cymru ar hyn o bryd

Er mwyn dod o hyd i'r ffordd orau o gysylltu'r trydan newydd y bwriedir ei gynhyrchu yng Ngogledd Cymru, mae National Grid yn cynnal proses i ddod o hyd i 'ddewisiadau strategol'.

Yn ystod y broses hon, daethom o hyd i nifer fawr o ffyrdd posibl o gysylltu'r prosiectau cynhyrchu trydan newydd a fwriedir yng Ngogledd Cymru â'r rhwydwaith trydan. Roedd y dewisiadau hyn yn cynnwys o dan y môr, dros dir neu gyfuniad o'r ddau.

Roeddem wedi asesu pob un o'r dewisiadau hyn yn erbyn effeithiau amgylcheddol a chymunedol, ymarferoldeb technegol a chostau oes gyfan. Roeddem hefyd wedi'u trafod â nifer o sefydliadau i gyfrannu'n well at ein hasesiad.

Ar ôl y broses werthuso faith hon, y dewis rhagarweiniol a ffefrir gan National Grid yw cysylltiad dros dir. Rydym yn credu bod hyn yn cyflawni'r cydbwysedd gorau rhwng yr holl ystyriaethau pwysig mae'n rhaid i ni eu gwneud.

i Rhagor o wybodaeth

Mae modd i chi gael gwybod am ein proses opsiynau strategol a sut y cafodd pob un o'r opsiynau eu hasesu gennym ni trwy ddarllen ein 'Strategic Options Report', sydd ar gael yn yr arddangosfa hon.

Gellir lawr lwytho copiau o [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) ac maent ar gael i'w gweld mewn nifer o leoliadau cyhoeddus.

**Siaradwch ag aelod o'r tîm i gael gwybod mwy.**

## The existing network in North Wales

To identify the best way to connect the proposed new energy generation in North Wales, National Grid undertakes a process to identify 'strategic options'.

During this process, we identified a large number of potential ways to connect the new electricity generation proposed in North Wales to the electricity network. These were subsea, overland, or a combination of both.

We assessed each of these options against environmental and community effects, technical feasibility, and capital and whole life costs. We also discussed them with a number of organisations to better inform our assessment.

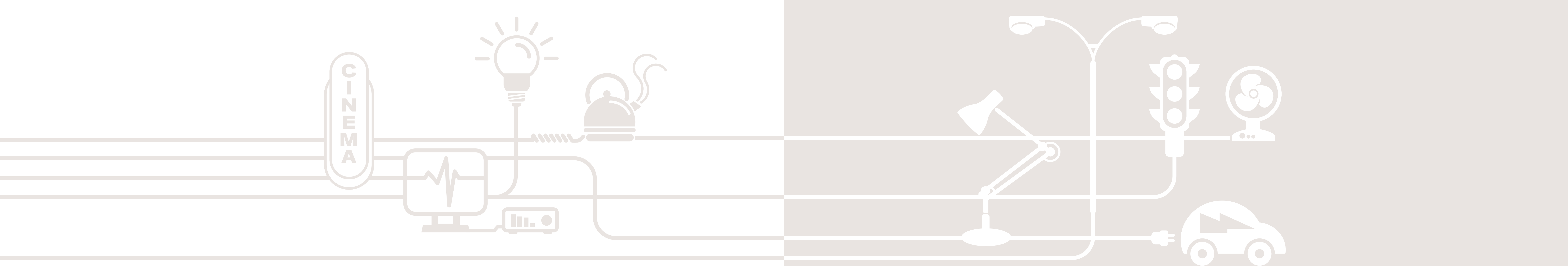
Following this extensive process of evaluation, National Grid's preliminary preference is for an overland connection. We believe this achieves the best balance between all of the important considerations we have to make.

i For more information

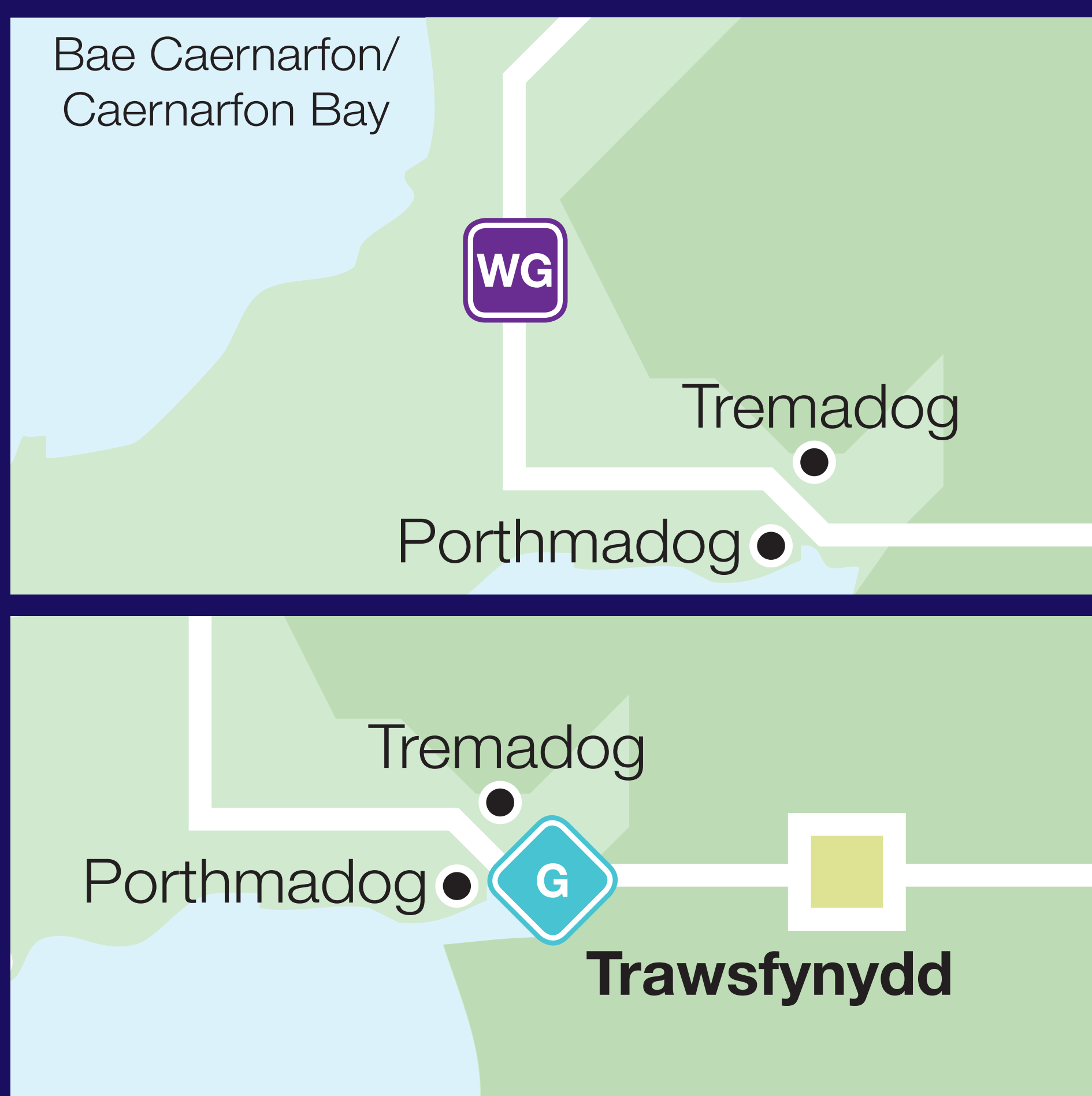
You can find out more about our strategic options process and how we assessed each of the options by reading our 'Strategic Options Report', available at this exhibition.

Copies can also be downloaded from [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and are available for viewing at a number of public locations.

**Please speak to a member of the team for more information.**







## Y dewis rhagarweiniol sy'n cael ei ffafrio gennym

## Our preliminary preferred option

Yn dilyn y broses dewisiadau strategol, y dewis cychwynnol a ffeirir gennym yw cysylltiad dros dir, sy'n cynnwys tri phecyn gwaith hanfodol.

### Dyma'r tri phecyn gwaith arfaethedig:

- WP** Cysylltiad uwchben ychwanegol rhwng Wylfa a Phentir i gysylltu ffynonellau cynhyrchu carbon isel newydd â'r rhwydwaith sy'n bodoli yng Ngogledd Cymru.
- WG** Is-orsaf newydd yng Ngorllewin Gwynedd i gryfhau'r rhwydwaith a gwneud yn siŵr bod cyflenwadau dibynadwy'n cael eu cynnal yn yr ardal, gan gynnwys i Benrhyn Llŷn.
- G** Cysylltiad tanddaearol ychwanegol i ddisodli ac uwchraddio'r cysylltiad tanddaearol presennol yn Aber Afon Glaslyn. Mae hyn i gryfhau'r rhwydwaith er mwyn gallu delio â'r ynni ychwanegol yn y system.

Cafodd hwn ei ddewis gan ein bod yn credu mai dyma fydd yn sicrhau'r cydbwysedd gorau rhwng ystyriaethau technegol, economaidd, amwynderau cymdeithasol ac amgylcheddol, o'i gymharu â'r dewisiadau eraill a ystyriwyd gennym.

Rydym hefyd wedi cynnal trafodaethau cychwynnol gyda rhanddeiliaid gan gynnwys awdurdodau lleol i gasglu eu safbwyntiau.

Byddwn yn adolygu'r dewis rydym yn ei ffafrio'n rheolaidd i sicrhau mai'r dewis mwyaf priodol sy'n mynd rhagddo yn y pen draw, ac ni fyddwn yn adeiladu dim oni bai ein bod yn hollol siŵr ei fod yn angenrheidiol.

### Gwaith ychwanegol

Os datblygir y dewis strategol hwn, byddai angen gwneud gwaith ychwanegol i gryfhau'r rhwydwaith trydan. Byddai hyn yn cynnwys gweithio ar linellau uwchben presennol yng Ngogledd Cymru, a gweithio ar is-orsafedd Wylfa, Pentir a Thrawsfynydd.

Nid ydym yn gwybod manylion llawn y gwaith hwn ar hyn o bryd ond wrth i hyn ddod yn gliriach, rydym ni wedi ymrwymo i sicrhau bod pobl yn cael yr holl wybodaeth sydd ar gael.



### Rhagor o wybodaeth

Cewch wybod mwy am y dull a'r broses y mae National Grid yn eu dilyn wrth gysylltu prosiectau trydan newydd â'r rhwydwaith drwy ddarllen 'Our approach to the design and routing of new high voltage electricity transmission lines' sydd ar gael yn yr arddangosfa hon.

Gellir hefyd llwytho copïau i lawr o [www.nationalgrid.com/undergrounding](http://www.nationalgrid.com/undergrounding) ac maen nhw ar gael i'w gweld mewn nifer o leoliadau cyhoeddus hefyd.

**Siaradwch ag aelod o'r tîm i gael gwybod mwy.**

Following the strategic options process, our preliminary preferred option is for an overland connection, which consists of three key packages of work.

### The proposed three key packages of work are:

- WP** An additional overhead connection between Wylfa and Pentir, to connect new low-carbon generation sources to the existing network in North Wales.
- WG** A new substation in West Gwynedd to strengthen the network and ensure reliable supplies are maintained in the area, including to the Llŷn Peninsula.
- G** An additional underground connection at the Glaslyn Estuary to replace and upgrade the existing underground connection. This is to strengthen the network to be able to handle the increased amount of energy in the system.

This option was chosen because we believe it achieves the best balance between important technical, economic, social amenity and environmental considerations when compared with the others we assessed.

We have also held initial discussions with stakeholders including local authorities to get their views.

We will regularly review our preferred option to ensure the most appropriate option is ultimately taken forward, and we will not build anything unless we are absolutely certain it's needed.

### Additional works

If this strategic option is taken forward, a number of additional works would also be required to strengthen the electricity network. These would include work on existing overhead lines in North Wales, and work on existing substations at Wylfa, Pentir and Trawsfynydd.

We do not yet know the full details of these works but as this becomes clearer, we are committed to keeping people fully informed.



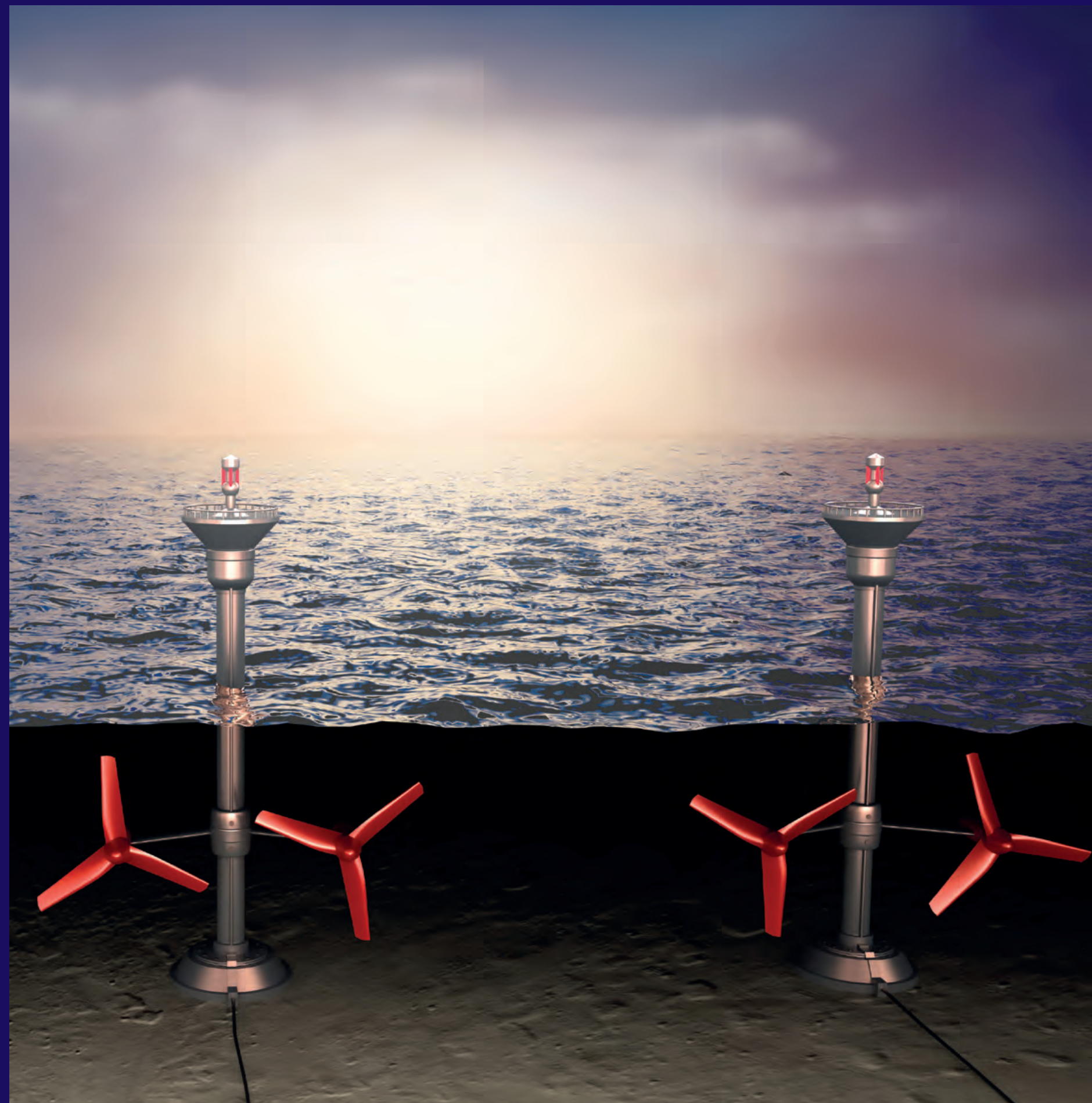
### For more information

You can find out more about the approach and process National Grid follows when connecting new energy generation to the network by reading 'Our approach to the design and routing of new electricity transmission lines', available at this exhibition.

Copies can also be downloaded from [www.nationalgrid.com/undergrounding](http://www.nationalgrid.com/undergrounding) and are available for viewing at a number of public locations.

**Please speak to a member of the team for more information.**





## Ffynonellau ynni ychwanegol

Mae prosiectau cynhyrchu ynni newydd yn cael eu cynnig yn gyson i ddiwallu ein hangen am ffynonellau newydd o drydan carbon isel.

Llofnodwyd cytundeb ym mis Gorffennaf 2012 gyda Greenwire i gysylltu 1 GW o ynni gwynt ar y tir o lwerddon â Phentir. Mae National Grid nawr yn ystyried y ffordd orau o wneud hyn. Mae hefyd yn bosibl y bydd angen i National Grid gysylltu ffynonellau cynhyrchu ynni newydd arfaethedig eraill â'r rhwydwaith trydan yng Ngogledd Cymru yn y dyfodol.

Wrth i'r gwaith hwn fynd rhagddo, bydd National Grid yn rhoi gwybodaeth lawn i bobl, ac rydyn ni wedi ymrwymo i adolygu'r dewis a ffefrir gennym yn rheolaidd i wneud yn siŵr mai'r dewis mwyaf priodol fydd yn cael ei roi ar waith yn y pen draw.

Serch hynny, mae National Grid yn credu bod ei ddewis strategol a ffefrir ar gyfer gorsaf bŵer niwclear newydd Horizon a'r ynni gwynt ar y môr sy'n cael ei gynnig gan Celtic Array yn cynrychioli'r cysylltiad gorau ar gyfer y pŵer hwn. Ni waeth pa brosiectau cynhyrchu ychwanegol y bydd angen eu cysylltu yng Ngogledd Cymru yn y dyfodol, byddai'r gwaith sy'n cael ei gynnig fel rhan o'r dewis a ffefrir gennym yn dal yn ofynnol.

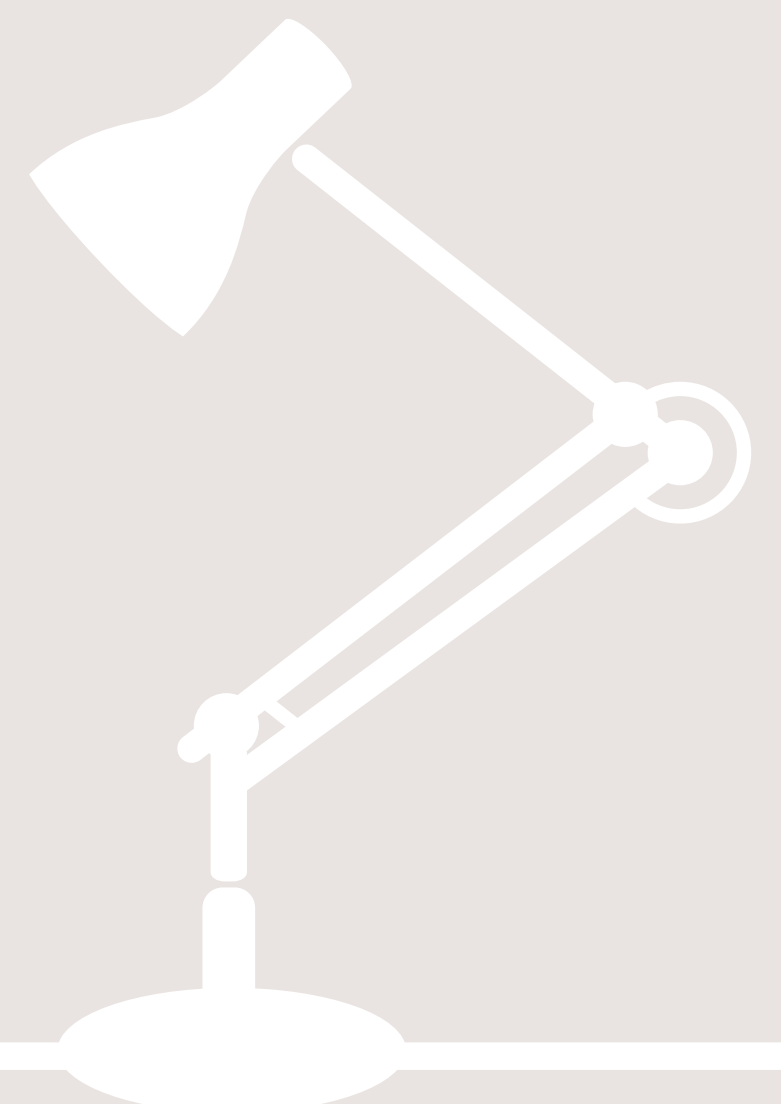
## Additional energy sources

New energy generation is continually being proposed to meet our need for new, low carbon sources of electricity.

An agreement was signed in July 2012 with Greenwire to connect 1 GW of Irish onshore wind energy to Pentir. National Grid is now considering the best way to make this connection. It is also possible that National Grid may need to connect other proposed new energy generation sources to the electricity network in North Wales in the future.

As this work progresses, National Grid will keep people fully informed and is committed to regularly reviewing our preferred option to ensure the most appropriate option is ultimately taken forward.

However, National Grid believes that the preferred strategic option it has brought forward for Horizon's new nuclear power station and the offshore wind energy being proposed by Celtic Array represents the best connection option for this power. Regardless of what additional generation needs to be connected in North Wales in the future, the works proposed as part of our preferred option would still be required.





# Amserlen y Prosiect

# Project Timeline

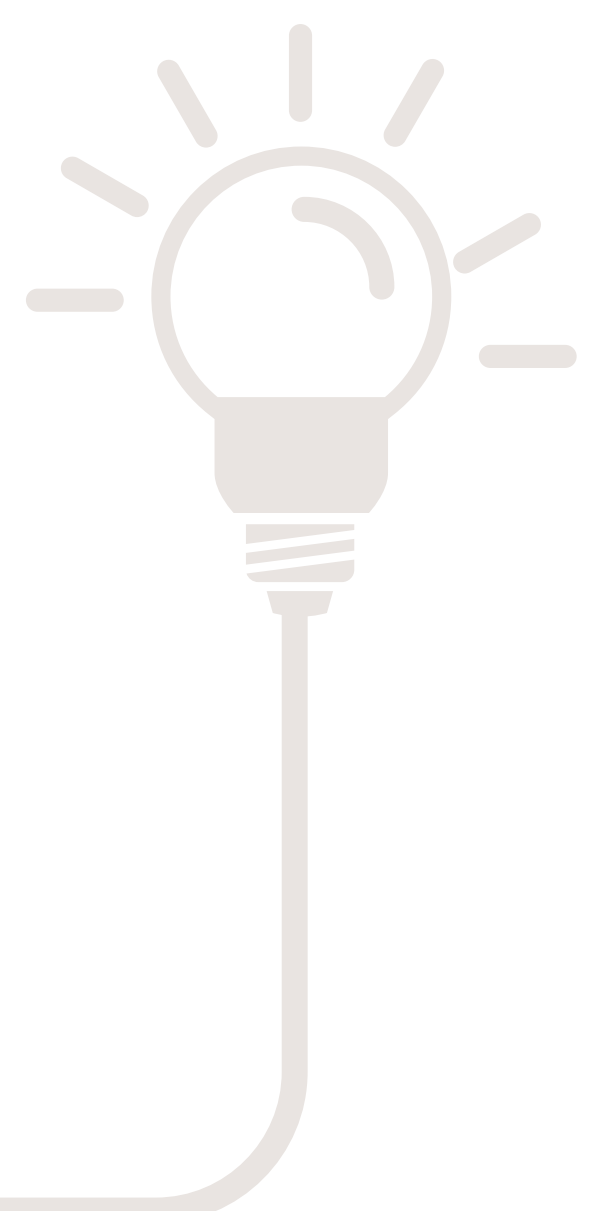
Fe welch o'r amserlenni isod fod hwn yn brosiect hir a chymhleth a bydd yn cynnwys sawl cam ymgynghori.

This is a long and complicated project and as you can see from the timelines below will include several stages of consultation.

Fel y gallech ddisgwyl, efallai bydd amserlenni'n newid ond byddwn yn rhoi'r wybodaeth ddiweddaraf i chi wrth i ni symud ymlaen.

As you might expect, timescales may move but as we progress we will keep you fully informed.

2011	2012	2013	2014	2015 Ymlaen/Onwards
<b>WYLFA - PENTIR</b>				
<p><b>WP</b></p> <ul style="list-style-type: none"> <li>Arfarniad cychwynnol o'r angen ac opsiynau strategol</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi Achos Angen, Adroddiad Opsiynau Strategol ac Adroddiad Coridor Llwybr Cychwynnol</li> <li>Ymgynghoriad Cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi manylion am y coridor llwybr a ffefrir</li> <li>Cyhoeddi gwybodaeth i egluro'r penderfyniadau a wnaethpwyd gennym</li> <li>Astudiaethau technegol ac amgylcheddol sydd ar waith ac ymgynghori â rhanddeiliaid allweddol</li> <li>Ymgynghoriad cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cwblhau'r EIA</li> <li>Ymgynghoriad cyhoeddus ar y dyluniad terfynol</li> </ul>	<ul style="list-style-type: none"> <li>Cais ac ystyried Gorchymyn Cydsyniad Datblygu (DCO)</li> <li>Yn amodol ar gymeradwyo DCO gallai'r gwaith adeiladu ddechrau yn 2016</li> </ul>
<ul style="list-style-type: none"> <li>Initial appraisal of need case and strategic options</li> </ul>	<ul style="list-style-type: none"> <li>Need Case, Strategic Options Report and Initial Route Corridor Report published</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>Announcement of preferred route corridor</li> <li>Information published to explain the decisions we've made</li> <li>Ongoing technical and environmental studies and consultation with key stakeholders</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>EIA completed</li> <li>Public consultation on final design</li> </ul>	<ul style="list-style-type: none"> <li>Development Consent Order (DCO) application and consideration</li> <li>Subject to DCO approval construction could begin in 2016</li> </ul>
<b>GORLLEWIN GWYNEDD WEST GWYNEDD</b>				
<p><b>WG</b></p> <ul style="list-style-type: none"> <li>Arfarniad cychwynnol o'r angen ac opsiynau strategol</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi Achos Angen, Adroddiad Opsiynau Strategol ac Astudiaeth Lleoli Is-orsafoddedd</li> <li>Ymgynghoriad cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi pa safle a ffefrir a ddewiswyd</li> <li>Cyhoeddi gwybodaeth yn egluro'r penderfyniadau a wnaethpwyd gennym</li> <li>Dyluniad manwl yr is-orsaf ac ymgysylltu â'r cyhoedd</li> <li>Y dyddiad cynharaf ar gyfer cyflwyno cais cynllunio</li> </ul>	<ul style="list-style-type: none"> <li>Yn amodol ar ganiatâd cynllunio, dyddiad cynharaf dechrau'r gwaith adeiladu</li> </ul>	
<ul style="list-style-type: none"> <li>Initial appraisal of need case and strategic options</li> </ul>	<ul style="list-style-type: none"> <li>Need Case, Strategic Options Report and Substation Siting Study published</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>Announcement of preferred site selected</li> <li>Information published to explain the decisions we've made</li> <li>Detailed substation design and public engagement</li> <li>Earliest date for submitting planning application</li> </ul>	<ul style="list-style-type: none"> <li>Subject to planning permission, earliest start of construction</li> </ul>	
<b>ABER AFON GLASLYN GLASLYN ESTUARY</b>				
<p><b>G</b></p> <ul style="list-style-type: none"> <li>Arfarniad cychwynnol o'r angen ac opsiynau strategol</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi Achos Angen, Adroddiad Opsiynau Strategol ac Adroddiad Cychwynnol ar y Coridor Llwybr</li> <li>Ymgynghoriad cyhoeddus</li> </ul>	<ul style="list-style-type: none"> <li>Cyhoeddi'r aliniad terfynol</li> <li>Cyhoeddi gwybodaeth yn egluro'r penderfyniadau a wnaethpwyd gennym</li> <li>Dyluniad terfynol yr aliniad ac ymgysylltu â'r cyhoedd</li> </ul>	<ul style="list-style-type: none"> <li>Dyddiad cynharaf dechrau'r gwaith adeiladu</li> </ul>	
<ul style="list-style-type: none"> <li>Initial appraisal of need case and strategic options</li> </ul>	<ul style="list-style-type: none"> <li>Need Case, Strategic Options Report and Initial Route Corridor Report published</li> <li>Public consultation</li> </ul>	<ul style="list-style-type: none"> <li>Announcement of final alignment</li> <li>Information published to explain the decisions we've made</li> <li>Final alignment design and public engagement</li> </ul>	<ul style="list-style-type: none"> <li>Earliest start of construction</li> </ul>	







Mae Meysydd Trydanol a Magnetig o'n hamgylch ni i gyd, yn ein cartref, yn ein gweithle a ble bynnag bydd trydan yn cael ei ddefnyddio. EMFs are all around us, in our homes, places of work and wherever else electricity is used.



## Meysydd Trydanol a Magnetig

Mae'r holl linellau pŵer ac is-orsafoedd yn cydymffurfio â'r lefelau diogelwch ar gyfer Meysydd Trydanol a Magnetig sydd wedi'u gosod gan arbenigwyr annibynnol.

Mae Meysydd Trydanol a Magnetig o'n hamgylch ni i gyd, yn ein cartref, yn ein gweithle a ble bynnag bydd trydan yn cael ei ddefnyddio. Daw'r rhan fwyaf o gyswllt o wifrau sy'n cyflenwi ein cartrefi ac o offer trydanol, ond mae llinellau pŵer hefyd yn ffynhonnell o gyswllt i bobl sy'n byw wrth eu hymyl.

Nid oes prawf bod cyswllt â Meysydd Trydanol a Magnetig yn cael effaith negyddol ar iechyd. Serch hynny, er gwaethaf 30 mlynedd o ymchwil ceir rhywfaint o ansicrwydd yn yr wyddoniaeth sy'n ymwneud â'r pwnc hwn. Mae National Grid yn cydnabod pryderon pobl ac yn ystyried y mater hwn o ddirif.

Mae diogelwch y cyhoedd, cymunedau lleol a'n gweithwyr yn ganolog i bopeth mae National Grid yn ei wneud. Yn achos Meysydd Trydanol a Magnetig, rydym yn ymrwymo i ddilyn y canllawiau ar lefelau cyswllt diogel sy'n cael eu rhoi gan y Llywodraeth a sefydliadau gwyddonol annibynnol awdurdodol fel Sefydliad Iechyd y Byd ac Asiantaeth Diogelu Iechyd y DU.



### Rhagor o wybodaeth

I gael rhagor o wybodaeth am Feysydd Trydanol a Magnetig, edrychwch ar y wefan [www.emfs.info](http://www.emfs.info) neu siarad ag aelod o'r tîm.

## Electric and Magnetic Fields (EMFs)

All power lines and substations comply with the safety levels for EMFs set by independent experts.

Electric and Magnetic fields (EMFs) are produced from all electrical equipment, including overhead lines, cables and domestic electrical appliances. They are around us, in our homes, places of work and wherever else electricity is used. Electric fields are proportional to the voltage used in the equipment and magnetic fields are proportional to the electrical current flowing through the equipment.

No negative health effects relating to exposure to EMFs have been established. However, despite 30 years of research there is still some uncertainty in the science surrounding this subject. National Grid fully recognises people's concerns and takes this issue very seriously.

The safety of the public, local communities and our employees is central to everything National Grid does. In the case of EMFs, we commit to following the guidance on safe levels of exposure given by the Government and authoritative independent scientific organisations, such as the World Health Organization (WHO) and the UK Health Protection Agency (HPA).



### For more information

For further information on EMFs please visit the website [www.emfs.info](http://www.emfs.info) or speak to a member of the team.





## Cwestiynau Cyffredin

## Frequently Asked Questions

Sut byddech chi'n lleihau effaith eich gwaith?

How would you reduce the effects of your works?

Pwy yw National Grid a beth ydych chi'n ei wneud?

Who is National Grid and what do you do?

A fydd gwaith National Grid yn creu unrhyw swyddi newydd?

Will National Grid's work create any new jobs?

Beth sy'n digwydd nesaf?

What happens next?

A ydy llinellau uwchben a cheblau tanddaearol yn ddiogel?

Are overhead lines and underground cables safe?

How can I register my views?

Sut galla i gofrestru fy safbwyntiau?



### Rhagor o wybodaeth

Mae rhagor o wybodaeth ar gael drwy ddarllen 'Cwestiynau Cyffredin Prosiect Cysylltiad Gogledd Cymru', sydd ar gael yn yr arddangosfa hon.

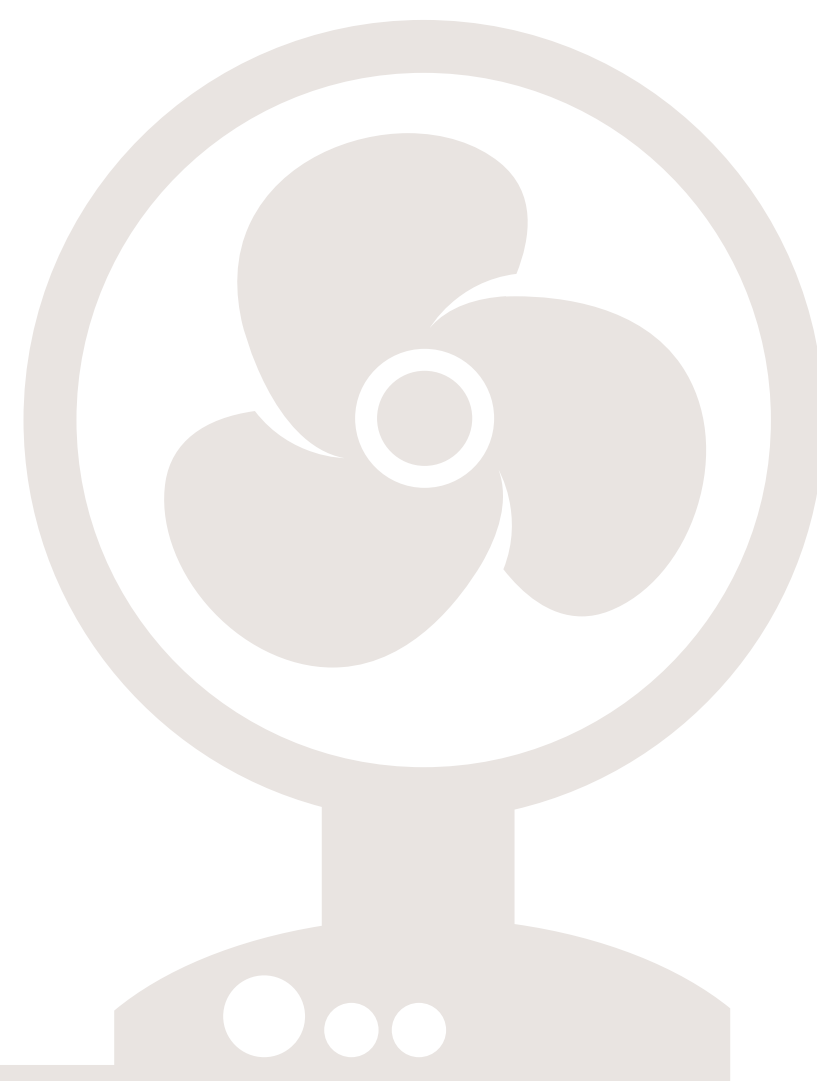
Siaradwch ag aelod o'r tîm i gael gwybod mwy.



### For more information

You can find out more by reading the 'North Wales Connection Project Frequently Asked Questions', available at this exhibition.

Please speak to a member of the team for more information







## Dweud eich dweud

Mae gennych chi ran hollbwysig i'w chwarae yn y penderfyniadau y byddwn yn eu gwneud.

Ar gyfer yr ymgynghoriad hwn, byddem yn croesawu eich safbwyntiau ar ein dewis strategol rhagarweiniol a ffefrir a'r tri phecyn o waith sydd ynghlwm wrth hynny.

Mae ffurflenni adborth, a llyfrynnau esboniadol, a fydd yn eich helpu i'w llenwi, ar gael yn yr arddangosfa hon ac ar-lein.

Bydd yr ymgynghoriad yn parhau tan 21 Rhagfyr 2012 ac rydym yn croesawu eich sylwadau tan hynny.

Ar ôl i'r ymgynghoriad ddod i ben bydd yr holl sylwadau ac adborth yn cael eu dadansoddi i wneud yn siŵr bod safbwyntiau'n cael eu hystyried fel rhan o'r broses benderfynu.



### Cofrestru eich safbwyntiau

#### Gallwch gofrestru eich safbwyntiau mewn sawl ffordd:

- Gallwch bostio un o'n ffurflenni adborth yn y blwch adborth yn yr arddangosfa hon
- Gallwch fynd i [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) a chofrestru eich manylion a llenwi ffurflen adborth
- Gallwch gysylltu â ni ar 0800 990 3567 i ofyn am ffurflen adborth a byddwn yn anfon un atoch chi ynghyd â rhagor o wybodaeth ac amlen radbost
- Gallwch anfon e-bost neu ysgrifennu atom ni gyda'ch safbwyntiau. Bydd y rhain yn cael eu dadansoddi yn union yr un ffordd â'r ffurflenni adborth.  
E-bost [nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com);  
ysgrifennu at FREEPOST NATIONAL GRID NW CONNECTION

## Have your say

You have an important role to play in the decisions we make.

For this consultation, we would welcome your views on our preliminary preferred strategic option and the three proposed packages of work it comprises.

Feedback forms, together with explanation booklets that will help you complete them, are available to take away at this event and online.

Consultation runs until 21 December 2012 and we welcome your comments up until then.

Once consultation closes, all the comments and feedback will be analysed to make sure views are considered as part of the decision making process.



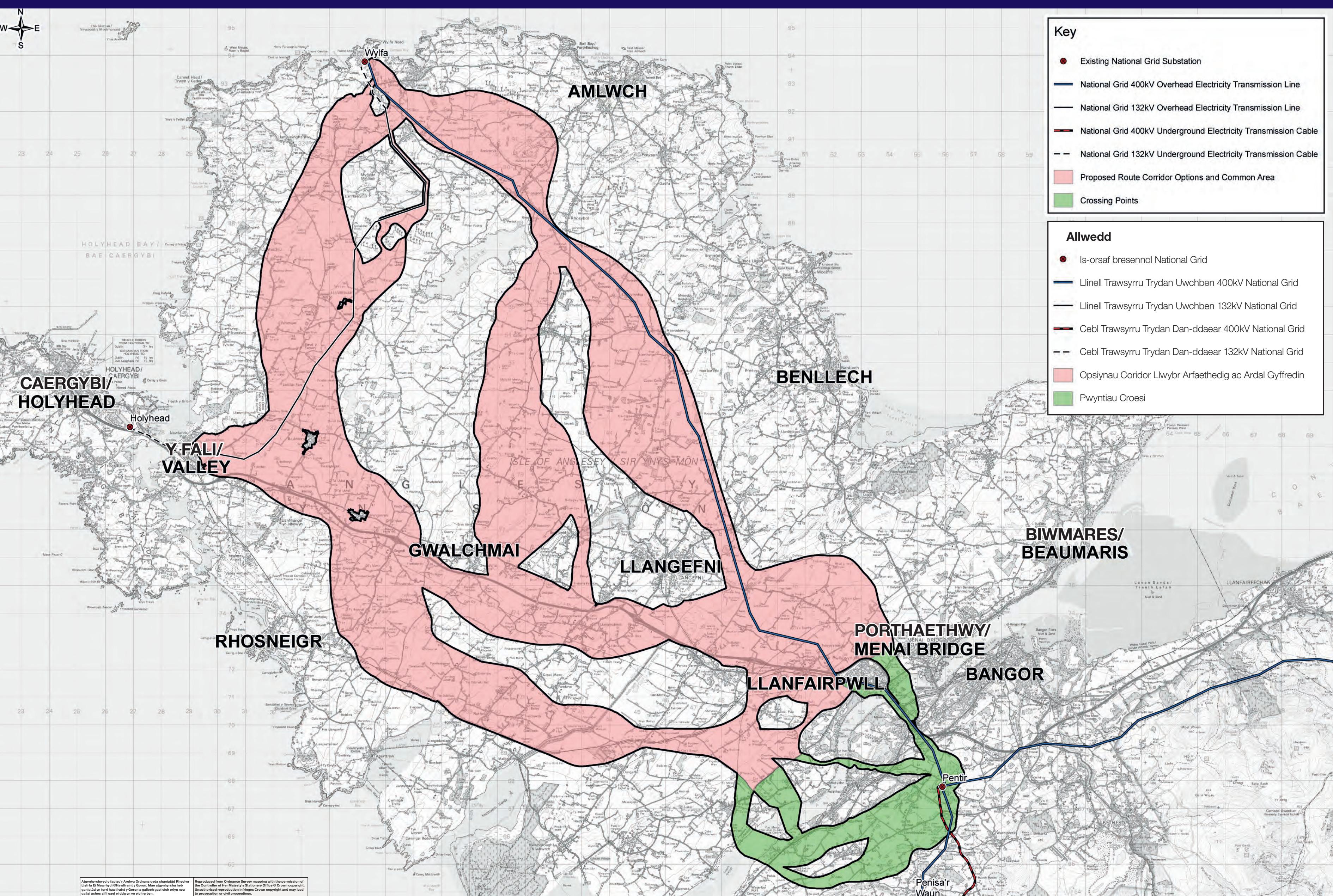
### Register your views

#### There are a number of ways you can register your views:

- You can post one of our feedback forms in the feedback box at this exhibition
- You can visit [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) where you can register your details and complete a feedback form
- You can contact us on 0800 990 3567 to request a feedback form and one will be sent to you together with further information and a freepost envelope
- You can email or write to us with your views. These will be analysed in exactly the same way as the feedback forms.  
Email [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com); write to FREEPOST NATIONAL GRID NW CONNECTION







## Dynodi coridorau llwybrau

Gallai'r coridor fod yn llydan iawn mewn rhai manau (hyd at 4km). Mewn rhannau eraill, gallai fod yn llai oherwydd cyfyngiadau fel trefi, pentrefi ac ardaloedd wedi'u dynodi am resymau amgylcheddol.

Wrth ddatblygu'r coridorau hyn, rydym wedi rhoi ystyriaeth fanwl i ffactorau amgylcheddol a chymdeithasol ac effeithiau posibl ar gymunedau lleol, yn ogystal â chyfyngiadau ariannol a pheirianyddol.

Rydym hefyd wedi cynnal trafodaethau cychwynnol gyda rhanddeiliaid gan gynnwys awdurdodau lleol, Llywodraeth Cymru, Cyngor Cefn Gwlad Cymru, Asiantaeth yr Amgylchedd Cymru, Parc Cenedlaethol Eryri, Cadw, y cynhyrchwyr a ScottishPower Energy Networks.

Fel rhan o'n hymgyngoriad, fe fyddem yn croesawu eich safbwyntiau ar goridau'r llwybr a'r aliniad llwybr posibl a awgrymir gennym.



### Am ragor o wybodaeth

Cewch wybod rhagor drwy ddarllen yr 'Initial Route Corridor Report' sydd ar gael ar gais.

Gellir llwytho copiau i lawr o [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) ac maent ar gael i'w gweld mewn nifer o leoliadau cyhoeddus.

**Holwch aelod o'r tîm am ragor o wybodaeth.**

## Identifying route corridors

The corridor could be very wide in some places (up to 4 km); in others it may be more restricted as a result of constraints such as towns, villages and designated environmental areas.

In developing these corridors, we have given careful consideration to environmental and social factors, possible impacts on local communities, as well as financial and engineering constraints.

We have also held initial discussions with stakeholders including local authorities, Welsh Government, the Countryside Council for Wales, the Environment Agency Wales, Snowdonia National Park, Cadw, the generators and ScottishPower Energy Networks.

As part of our consultation, we would welcome your views on the route corridors we have identified.



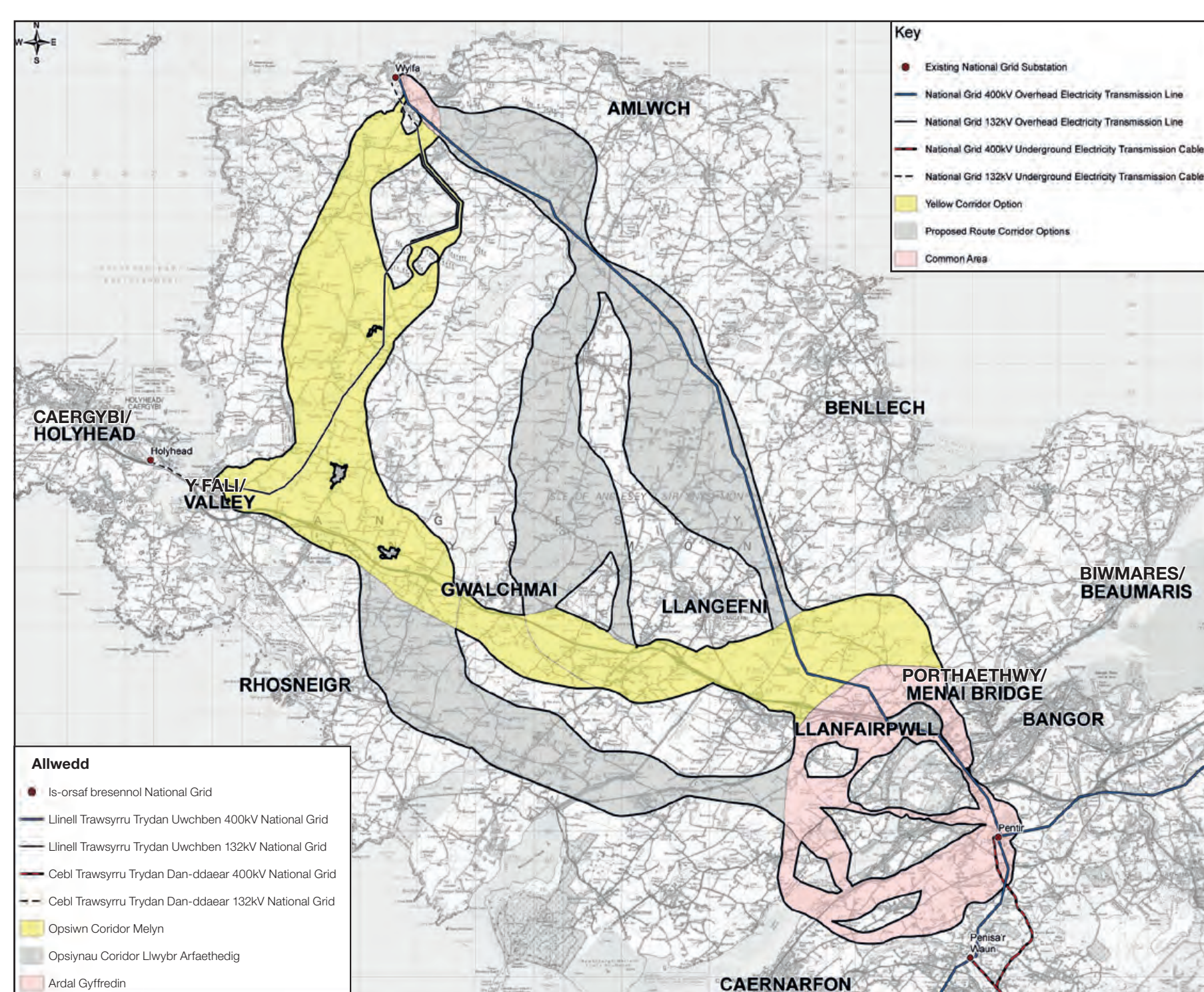
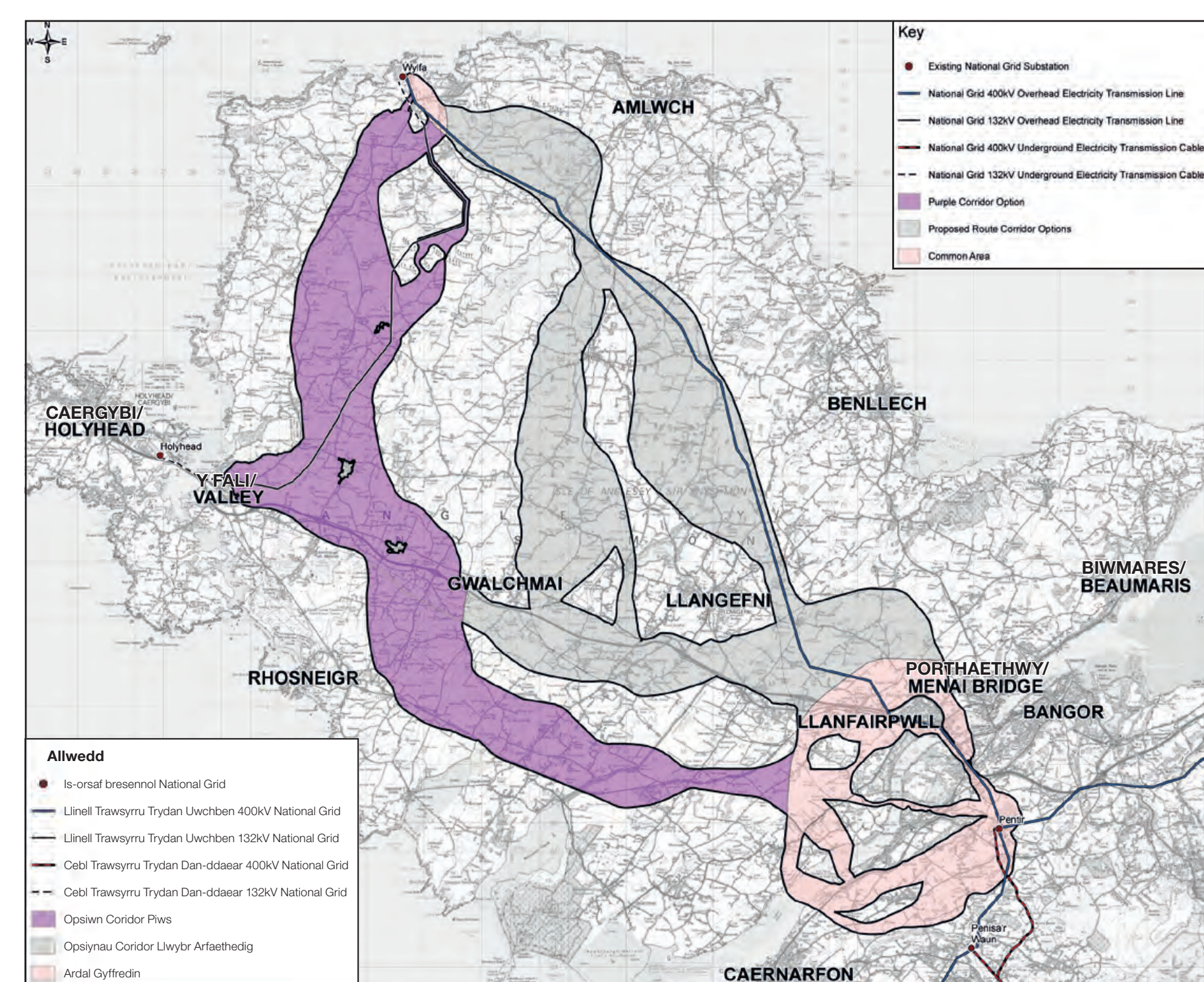
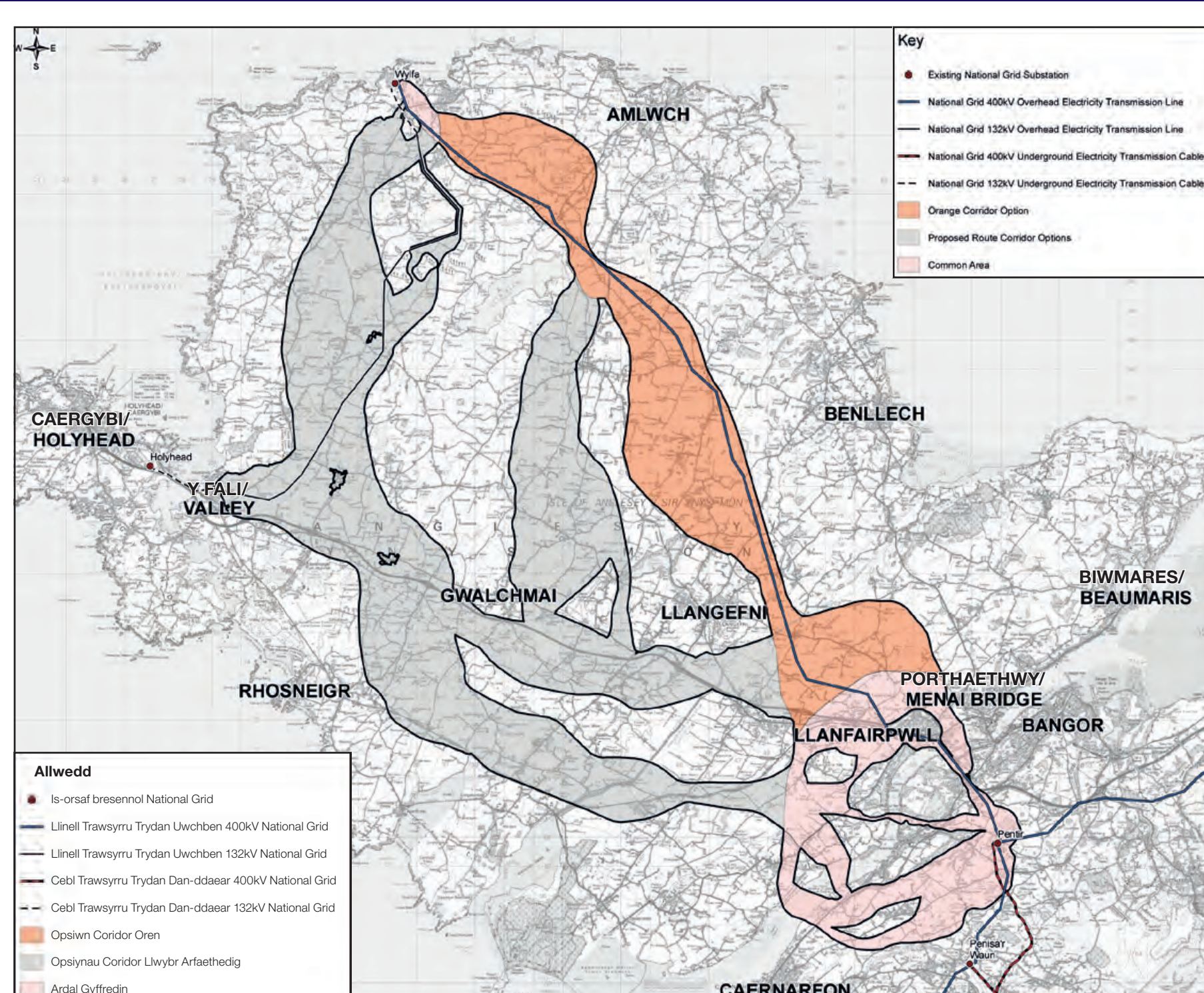
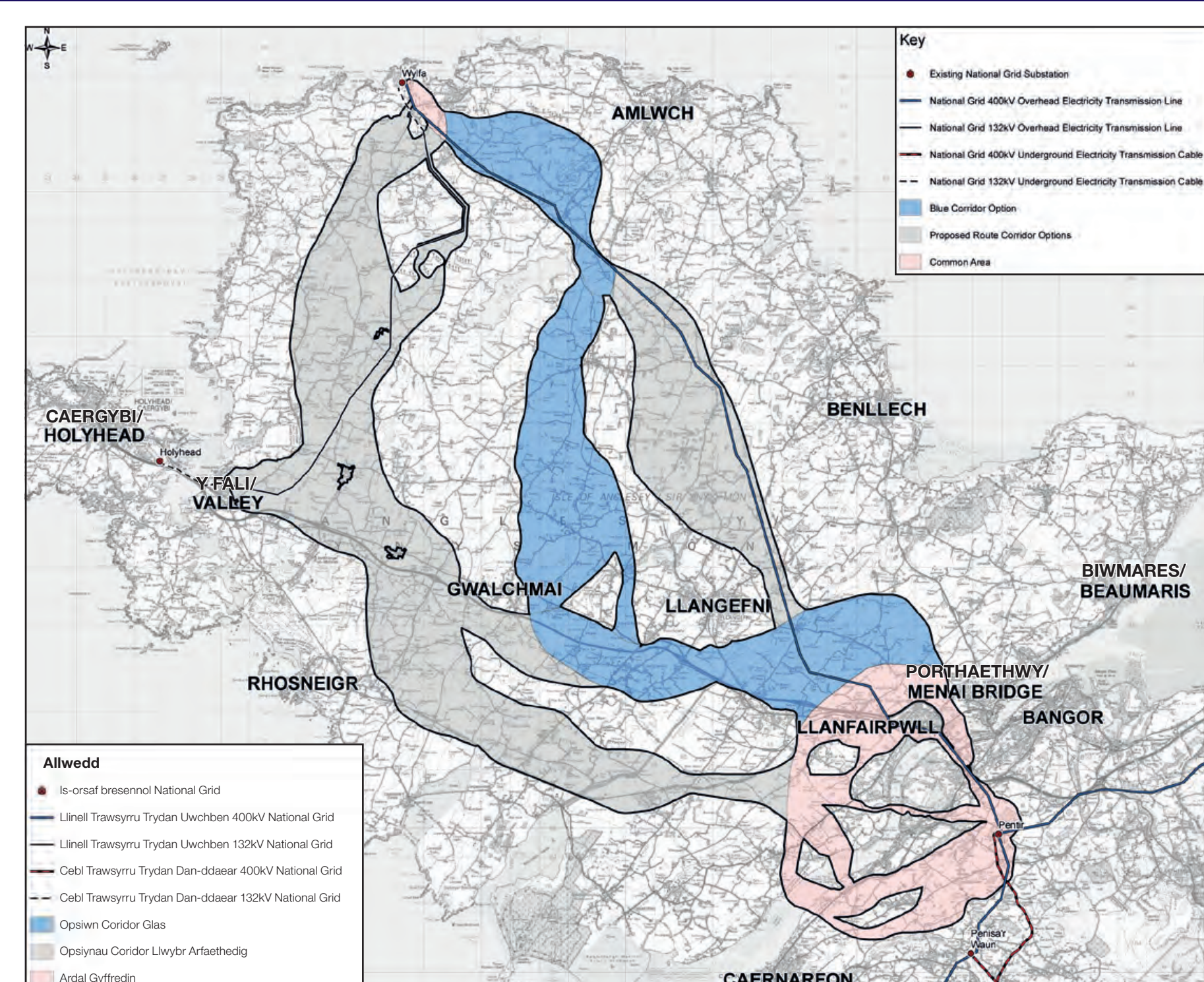
### For more information

You can find out more by reading the 'Initial Route Corridor Report', available on request.

Copies can also be downloaded from [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and are available for viewing at a number of public locations.

**Please speak to a member of the team for more information.**





## Dewisiadau Coridor Llwybr

Mae ein Hadroddiad Coridor Llwybr Cychwynnol wedi dynodi pedwar coridor llwybr posibl ar draws Ynys Môn. Dim ond un o'r opsiynau hyn fydd yn cael ei ddatblygu.

Mae'r mapiau uchod yn dangos y pedwar opsiwn coridor llwybr posibl ar draws Ynys Môn a ddynodwyd gennym. Wrth geisio penderfynu pa goridor llwybr y byddwn yn ei ddatblygu, mae gan y cyhoedd rôl bwysig i'w chwarae.

Yng ngogledd yr ynys, ger Wylfa, a thuag at dde'r ynys, mae'r coridorau yn uno mewn 'ardaloedd cyffredin'.

Pan fydd coridor llwybr wedi'i ddewis, fe fyddwn yn dynodi llwybr ar gyfer y cysylltiad yn yr 'ardaloedd cyffredin', a fydd yn cael ei asesu a'i gyflwyno er mwyn cael adborth yn ein cyfnod ymgynghori nesaf.



### Am ragor o wybodaeth

Mae ein Ffurflen Adborth Wylfa-Pentir a'n Llyfryn Esbonio, sy'n crynhoi pob un o'r pedwar llwybr posibl yn fanylach, ar gael yn yr arddangosfa hon.

Mae hefyd ar gael i'w lwytho i lawr yn: [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Gellir cael copïau hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid.

## Route corridor options

Our Initial Route Corridor Report has identified four possible route corridors across Anglesey. Only one of these options would ultimately be taken forward.

The maps above show the four potential coloured route corridor options across Anglesey we have identified. In deciding which route corridor we take forward, the public has an important role to play.

At the north of the island, near Wylfa, and towards the south of the island, the corridors converge in 'common areas'.

Once a preference for a route corridor has been chosen, we will identify a path for the connection to take inside the 'common areas', which will be assessed and brought forward for feedback at our next stage of consultation.



### For more information

Our Wylfa-Pentir Feedback Form and Explanation Booklet, which summarises each of the four potential routes in more detail, is available at this exhibition.

It is also available for download from: [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team.





## Gwneud y cysylltiad a lleihau ei effeithiau

## Making the connection and reducing its effects

Mae'r coridorau llwybr yr ydym wedi'u cyflwyno i'r ymgynghoriad yn seiliedig ar linell uwchben.

The route corridors we have brought forward for consultation are based on an overhead line.

Rydym yn defnyddio amrywiaeth o gynlluniau peilon o 30 i 55 metr o uchder, sydd fel arfer wedi'u gosod oddeutu 360 metr ar wahân. Rydym yn cydnabod yr effaith weledol y mae llinell uwchben yn gallu ei chael, a'r effaith ar dirwedd, ac fe fyddem yn gwneud pob ymdrech i leihau unrhyw effeithiau, gan ddefnyddio opsiynau yn cynnwys:

We use a range of different pylon designs from 30 to 55 metres high, which are usually spaced at around 360 metres apart. We recognise the visual and landscape impact that an overhead line can have, and we would give careful consideration to reducing any effects, with options including:

- **Llwybro gofalus** – er mwyn osgoi ardaloedd poblog ac ardaloedd y mae cymunedau yn eu trysori
- **Defnyddio mathau gwahanol o beilonau** – a allai gynnwys peilonau 'uchder isel' a/neu'r 'peilon-T' newydd
- **Ystyried gosod o dan y ddaear mewn ardaloedd arbennig o sensitif** – Er bod yna fwy o darfu yn ystod y cyfnod adeiladu, gan gynnwys cloddio ffosydd 50 metr o led gan amlaf, yn ystod y cyfnod adeiladu yn bennaf y mae'r effeithiau
- **Mesurau plannu/sgrinio** – gall plannu llwyni a choed priodol yn ogystal â mesurau sgrinio, fel creu byndiau pridd, helpu i leihau effaith weledol ein cyfarpar

- **Careful routeing** – to avoid populated areas and areas communities most value
- **Use of different pylon types** – which could include 'low height' and/or the new 'T-ylon'
- **Considerations of undergrounding in particularly sensitive areas** – Whilst there is greater disturbance during construction, involving the excavation of trenches typically 50 metres wide, the effects are largely limited to the construction phase.
- **Planting/screening measures** – planting of appropriate shrubs and trees as well as screening measures, such as the creation of earth bunds, can help reduce the visual impact of our equipment

Wrth geisio dynodi'r dull mwyaf priodol ar gyfer lleihau effeithiau'r cysylltiad, rydym yn ystyried yr holl ymatebion yr ydym yn eu derbyn gan aelodau'r cyhoedd a rhanddeiliaid eraill yn ystod yr ymgynghoriad. Rydym hefyd yn ystyried ystyriaethau technegol, economaidd, cymdeithasol ac amgylcheddol pwysig.

In identifying the most appropriate way to reduce effects of the connection, we consider all the consultation responses we receive from members of the public and other stakeholders together with important technical, economic, social and environmental considerations.

Ar gyfer y cam hwn yn yr ymgynghoriad, fe fyddem yn gwerthfawrogi eich sylwadau a'ch gwybodaeth am yr ardaloedd hynny sy'n fwyaf sensitif o fewn y coridorau llwybr a ddynodwyd gennym ni.

For this stage of consultation, we would value your opinion in identifying areas that you feel are most sensitive within the route corridors we have identified.



### Am ragor o wybodaeth



### For more information

Cewch wybod rhagor am ddull a phroses National Grid wrth gysylltu prosiectau cynhyrchu ynni newydd drwy ddarllen 'Our approach to the Design and routeing of new electricity transmission lines', sydd ar gael yn yr arddangosfa hon.

You can find out more about the approach and process National Grid follows when connecting new energy generation by reading 'Our approach to the design and routeing of new electricity transmission lines', available at this exhibition.

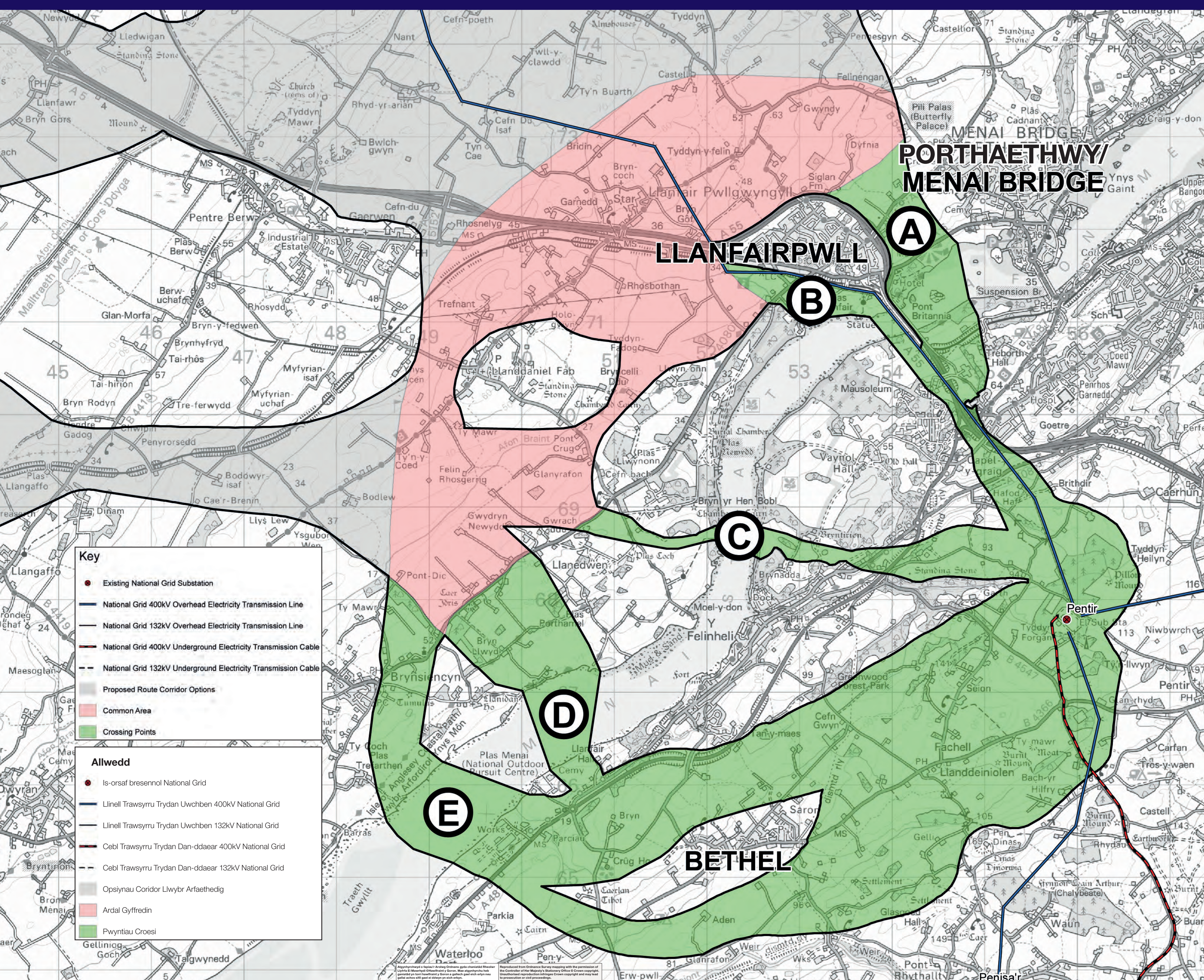
Gellir llwytho copïau i lawr o [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) ac maent ar gael i'w gweld mewn nifer o leoliadau cyhoeddus.

Copies can also be downloaded from [www.nationalgrid.com/undergrounding](http://www.nationalgrid.com/undergrounding) and are available for viewing at a number of public locations.

**Holwch aelod o'r tîm am ragor o wybodaeth.**

**Please speak to a member of the team for more information.**





## Opsiwn croesi afon Menai

## Menai Strait crossing options

Fe fydd angen i bob coridor llwybr a gyflwynwyd gennym groesi afon Menai. Mae'r dull y bydd National Grid yn ei ddefnyddio i groesi yn golygu bod angen ystyried llawer o ffactorau amgylcheddol, technegol ac economaidd.

Mae afon Menai oddeutu 250 metr o led ar ei man culaf, ac mae cysylltiad llinell uwchben wedi ei chroesi er 1966. Mae'r llinell honno yn cyd-redeg â Phont Britannia bron â bod.

Mae gwneud cysylltiad ychwanegol mewn modd sy'n cydbwysu'r holl ystyriaethau amgylcheddol, technegol a chost yn benderfyniad pwysig. Rydym hefyd yn cydnabod sensitifrwydd Ardaloedd Naturiol Eithriadol Ynys Môn a pha mor bwysig yw golygfeydd yr ardaloedd hyn yn lleol ac yn ehangach.

Rydym wedi cyflwyno pum opsiwn posibl ar gyfer croesi afon Menai, ac fe'u nodir fel A-E uchod. Mae'r rhain yn seiliedig ar ein dewis rhagarweiniol o gael cysylltiad uwchben.

Gallai unrhyw un o'r coridorau llwybr gael ei ddefnyddio ar y cyd ag unrhyw un o'r opsiynau a ddynodwyd ar gyfer croesi'r afon.

Yn ein cyfnod ymgynghori cyntaf, fe fyddem yn hoffi'ch sylwadau ar yr opsiynau croesi a ddynodwyd gennym a'r ardaloedd sydd yn arbennig o sensitif yn eich barn chi.

All of the route corridors we have brought forward will need to cross the Menai Strait. How National Grid crosses it presents a number of important environmental, technical and economic considerations.

The Menai Strait is around 250 metres wide at its narrowest point, and there has been an overhead line connection across the Strait since 1966 that runs broadly parallel to the Britannia Bridge.

Making an additional connection in a way that balances all of the particular environmental, technical and cost considerations is an important decision. We also fully recognise the sensitivities of the Anglesey Area of Outstanding Natural Beauty (AONB) and how highly views in this area are regarded both locally and more widely.

We have brought forward five possible crossing options across the Menai Strait, marked A-E above. These are based on our preliminary preference for an overhead connection.

Any of the route corridors could be used in conjunction with any of the Menai Strait crossing options identified.

In our first stage of consultation, we would like your views on the crossing options we have identified and areas you feel are particularly sensitive.



### Am ragor o wybodaeth

Mae ein Ffurflen Adborth a'n Llyfryn Esbonio ar gyfer Wylfa-Pentir, sy'n crynhoi pob un o'r pedwar llwybr posibl yn fanylach, ar gael yn yr arddangosfa hon.

Mae hefyd ar gael i'w lwytho i lawr yn: [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Gellir cael copïau hefyd mewn nifer o leoliadau cyhoeddus neu ar gais drwy gysylltu â thîm National Grid.



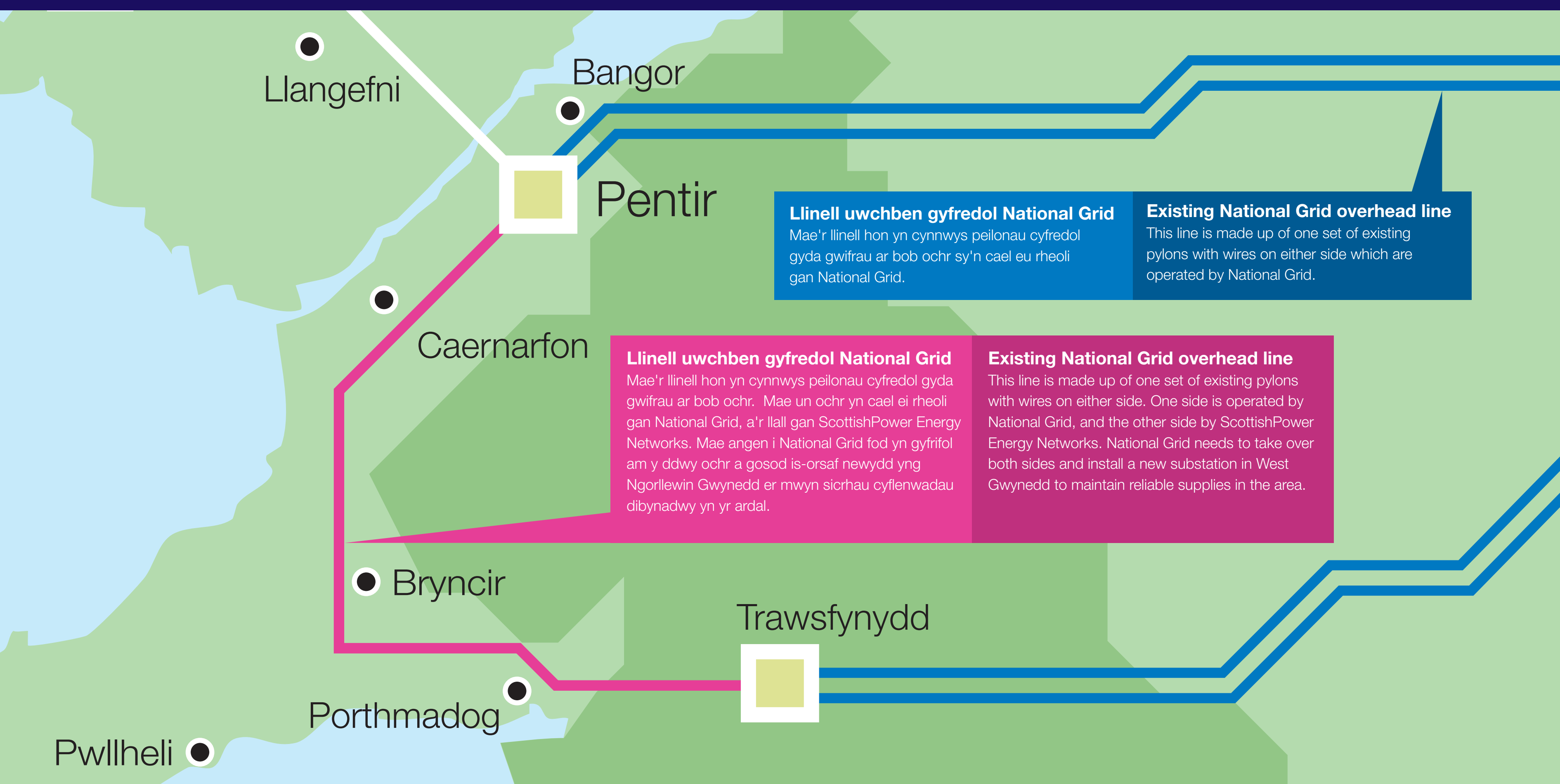
### For more information

Our Wylfa-Pentir Feedback Form and Explanation Booklet, which summarises each of the five Menai crossing options in more detail, is available at this exhibition.

It is also available for download from: [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

Copies are also available at a number of public locations or on request by contacting the National Grid team.





#### Llinell uwchben gyfredol National Grid

Mae'r llinell hon yn cynnwys peilonau cyfredol gyda gwifrau ar bob ochr sy'n cael eu rheoli gan National Grid.

#### Existing National Grid overhead line

This line is made up of one set of existing pylons with wires on either side which are operated by National Grid.

#### Llinell uwchben gyfredol National Grid

Mae'r llinell hon yn cynnwys peilonau cyfredol gyda gwifrau ar bob ochr. Mae un ochr yn cael ei rheoli gan National Grid, a'r llall gan ScottishPower Energy Networks. Mae angen i National Grid fod yn gyfrifol am y ddwy ochr a gosod is-orsaf newydd yng Ngorllewin Gwynedd er mwyn sicrhau cyflenwadau dibynadwy yn yr ardal.

#### Existing National Grid overhead line

This line is made up of one set of existing pylons with wires on either side. One side is operated by National Grid, and the other side by ScottishPower Energy Networks. National Grid needs to take over both sides and install a new substation in West Gwynedd to maintain reliable supplies in the area.

## Pam fyddai angen is-orsaf newydd yng Ngorllewin Gwynedd

Fe fyddai angen is-orsaf newydd yng Ngorllewin Gwynedd er mwyn sicrhau cyflenwadau dibynadwy i gartrefi a busnesau yn yr ardal.

Mae National Grid ar hyn o bryd yn rhannu'r llinell uwchben gyfredol yng Ngorllewin Gwynedd gyda'r cyflenwr ynni lleol ScottishPower Energy Networks.

Er mwyn ymdopi â'r pŵer ychwanegol sy'n cael ei gynnig ar gyfer Gogledd Cymru, fe fyddai angen i ni ddefnyddio'r gwifrau ar ddwy ochr y llinell uwchben rhwng Pentir a Thrawsfynydd.

Er mwyn caniatáu i hyn ddigwydd, fe fyddai angen is-orsaf newydd yn ymyl y llinell gyfredol, gan gryfhau'r rhwydwaith a sicrhau cyflenwadau trydan dibynadwy i ardaloedd cyfagos gan gynnwys Penrhyn Llŷn. Fe fyddem yn hoffi gwybod beth yw eich barn am y gwaith hwn fel rhan o'r dewis strategol a ffeirir gennym ni ar y dechrau.



### Am ragor o wybodaeth

Cewch wybod rhagor am y rhesymau pam fod angen yr is-orsaf drwy ddarllen y 'Strategic Options Report', sydd ar gael ar gais.

Gellir llwytho copiâu i lawr o [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) ac maent ar gael i'w gweld mewn nifer o leoliadau cyhoeddus.

**Holwch aelod o'r tîm am ragor o wybodaeth.**

## Why a new substation in West Gwynedd would be needed

A new substation in West Gwynedd would be needed to maintain reliable supplies to homes and businesses in the area.

National Grid currently shares the existing overhead line in West Gwynedd with local energy supplier ScottishPower Energy Networks.

To accommodate the extra power being proposed in North Wales, we would need to make use of the wires on both sides of the overhead line between Pentir and Trawsfynydd.

To allow this to happen, a new substation near to the existing line would be needed, strengthening the network and ensuring reliable electricity supplies are maintained to surrounding areas including the Llŷn Peninsula. We would like your thoughts on this work as part of our preliminary preferred strategic option.



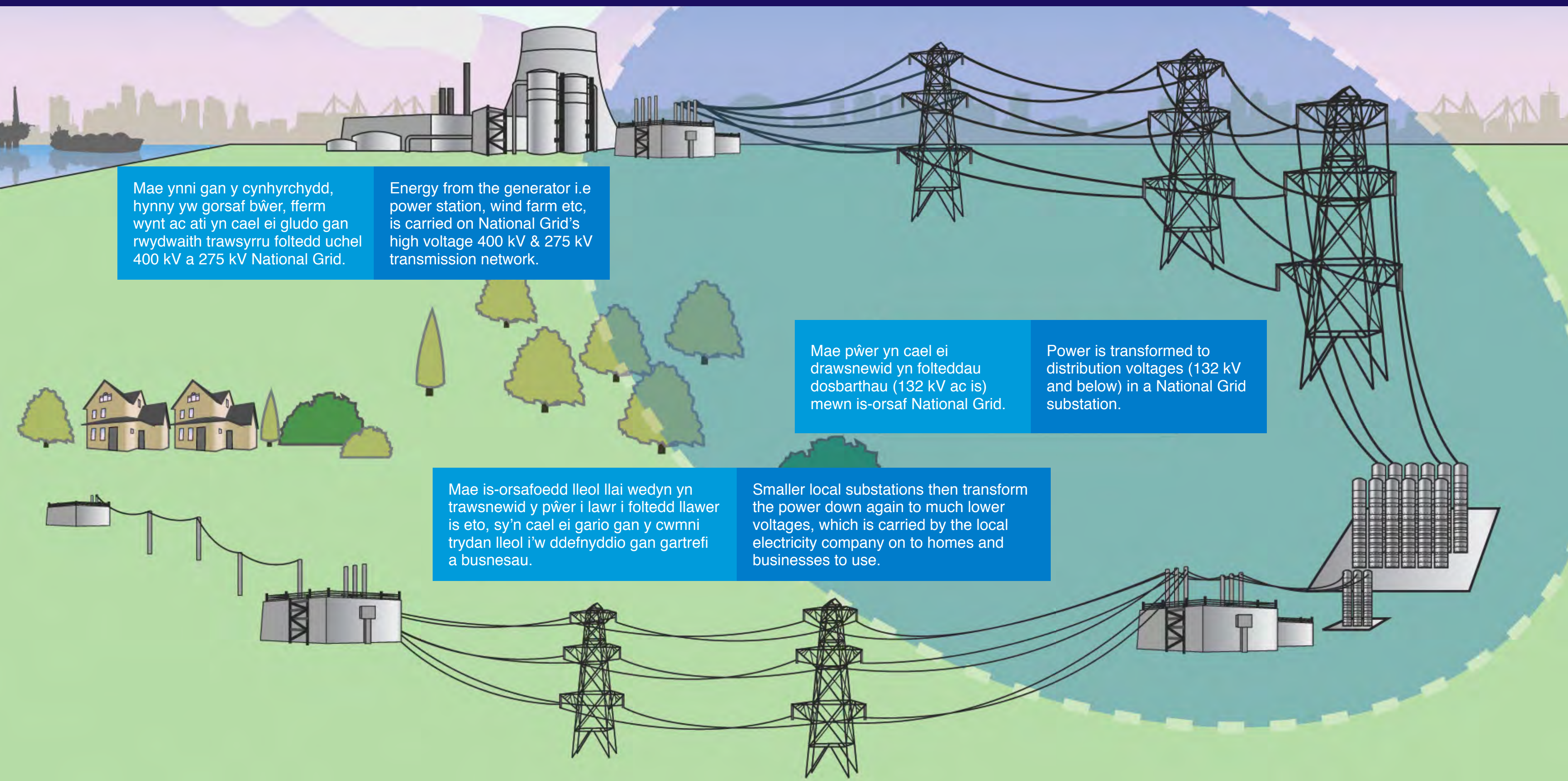
### For more information

You can find out more about why the substation is needed by reading our 'Strategic Options Report', available on request.

Copies can also be downloaded from [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and are available for viewing at a number of public locations.

**Please speak to a member of the team for more information.**





## Beth yw is-orsaf?

Mae is-orsafoedd yn trawsnewid pŵer o un foltedd i un arall.

Er enghraifft, mae trydan sy'n cael ei gynhyrchu gan orsafoedd pŵer mawr a ffynonellau cynhyrchu eraill fel arfer angen ei drawsyrru am bellteroedd maith gan ddefnyddio llinellau pŵer foltedd uchel 400 a 275 kV.

Rydym yn defnyddio is-orsaf i drawsnewid pŵer i lawr i 132 kV ac yn is er mwyn iddo allu mynd i mewn i'r rhwydwaith dosbarthu lleol (yn achos Gogledd Cymru, mae hyn yn cael ei reoli gan ScottishPower Energy Networks) ac yna ymlaen i gartrefi a busnesau.

Er bod is-orsafoedd yn gallu bod yn strwythurau eithaf mawr, rydym bob amser yn ceisio'n gorau i leihau eu heffeithiau, gan ddefnyddio mesurau yn cynnwys sgrinio a phlannu wedi'u tirweddu, a chreu cynefinoedd.

Drwy leoli is-orsafoedd yn agos at y llinellau fydd yn eu bwydo, gallwn osgoi llinellau uwchben aruthrol o hir. Drwy eu gosod yn agos at ffyrdd cyfredol, gall staff hefyd gael mynediad hawdd iddynt yn ystod y gwaith adeiladu ac ar gyfer gwaith cynnal a chadw parhaus.

## What is a substation?

Substations transform power from one voltage to another.

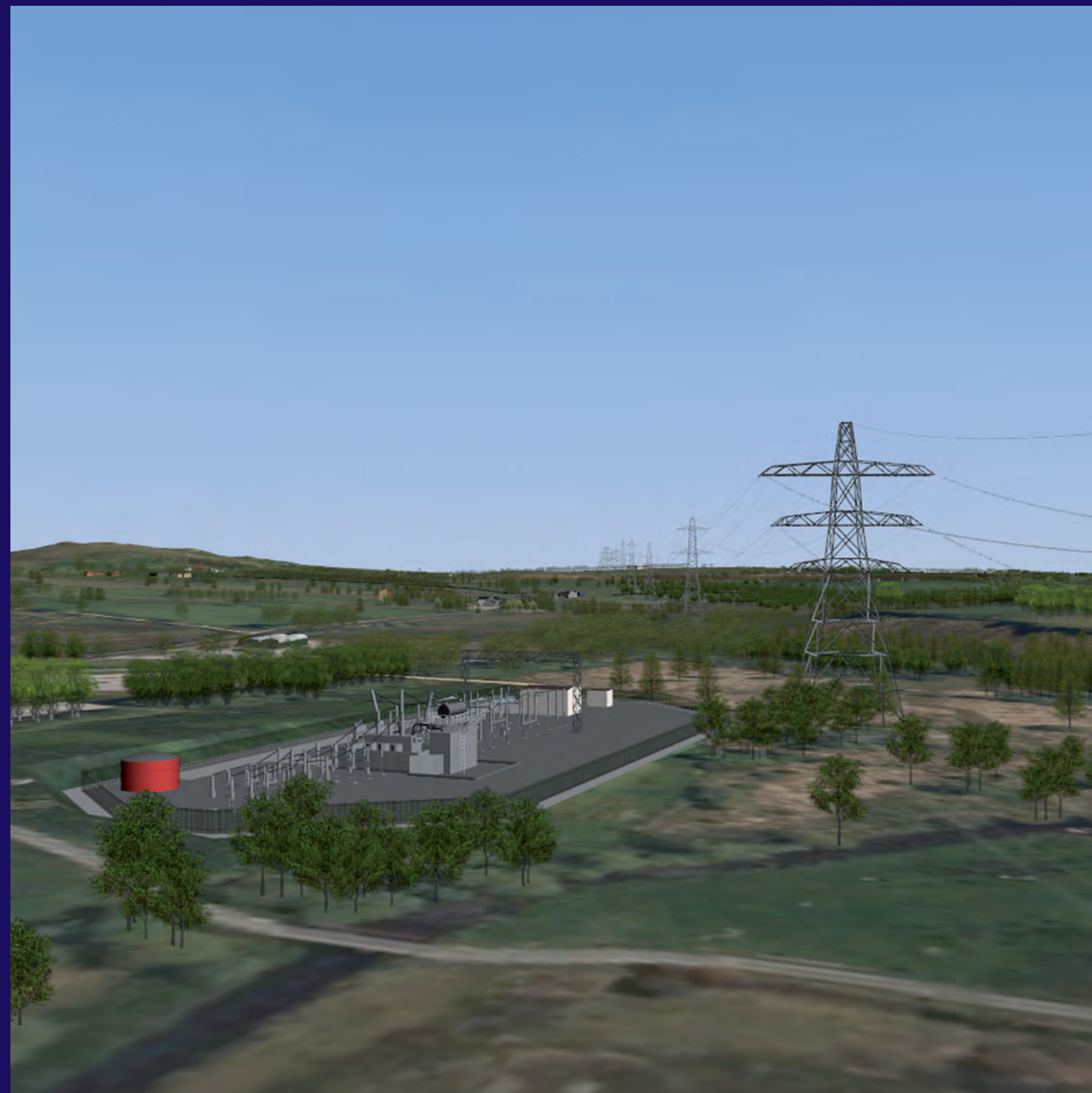
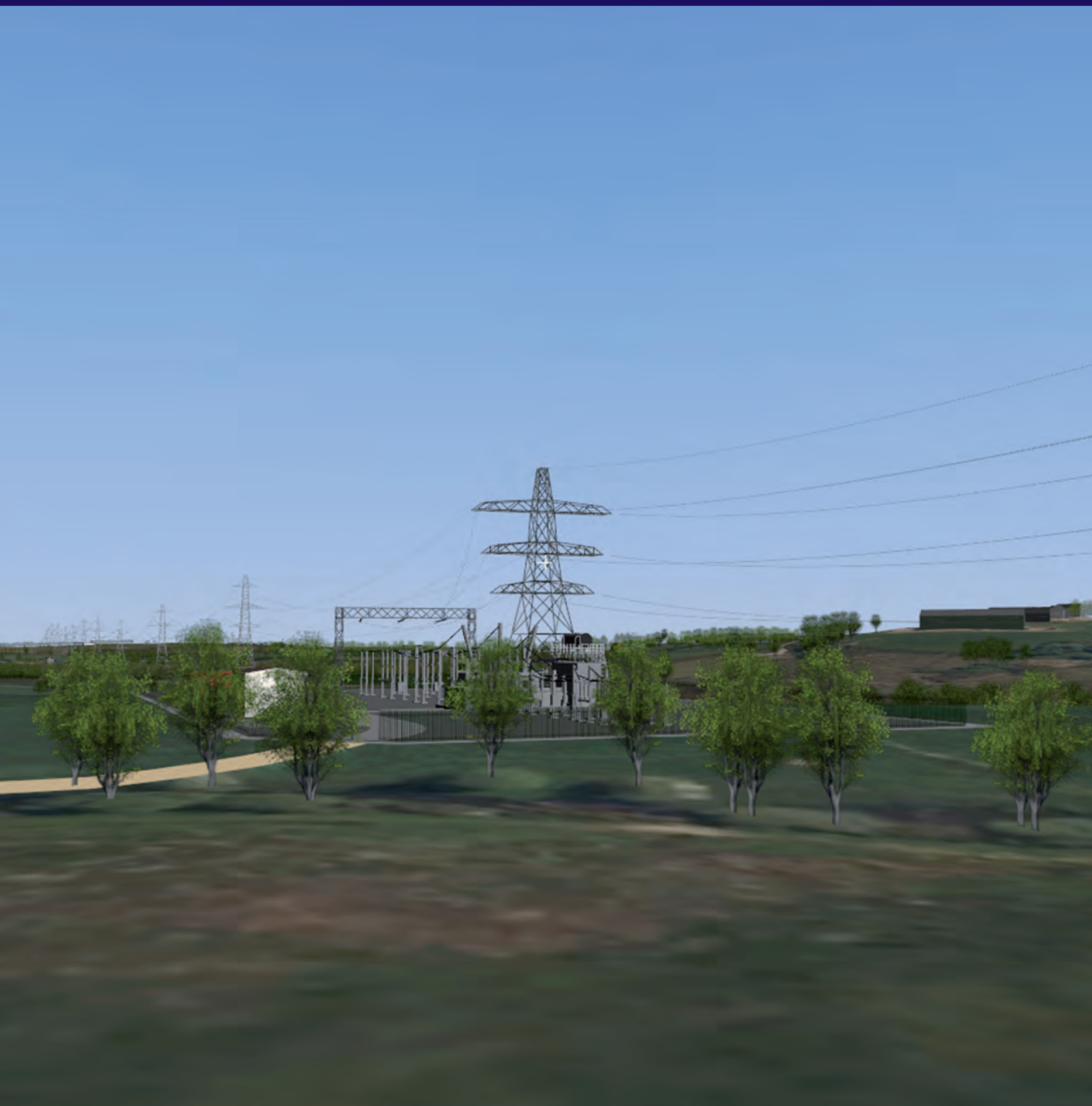
For example, electricity generated by large power stations and other generation sources typically needs to be transmitted long distances using high voltage power lines of 400 and 275 kV.

We use a substation to transform the power down to 132 kV and lower, so it can enter the local distribution network (in the case of North Wales, this is managed by ScottishPower Energy Networks) and then on into our homes and businesses.

While substations can be quite large structures, we always give careful consideration to reducing their effects, with measures including landscape screening and planting, and habitat creation.

By locating substations close to the lines that will feed them, we can avoid long lengths of overhead line. By siting them close to existing roads, they can also be easily accessed by staff during construction and for ongoing maintenance.





## Cynllunio'r is-orsaf a lleihau ei heffeithiau

## Designing the substation and reducing its effects

Mae cynllun penodol yr is-orsaf eto i gael ei gadarnhau, ond gallai gynnwys cyfarpar hyd at 10 metr o uchder, gyda'r potensial i gael ôl troed oddeutu dwy erw mewn maint, gan ddefnyddio tir ychwanegol ar gyfer sgrinio.

The exact design of the substation is still to be confirmed, but it could contain equipment up to 10 metres high and potentially have a footprint of about two acres in size, with additional land for screening.

Os bwrir ymlaen â'r dewis strategol hwn, bydd ystyriaeth ofalus yn cael ei rhoi i leihau effeithiau is-orsaf newydd, gan ddefnyddio mesurau yn cynnwys:

- **Sgrinio a phlannu wedi'u tirweddu** – gall plannu llwyni a choed priodol yn ogystal â mesurau sgrinio, fel creu byndiau pridd, helpu i leihau effaith weledol ein cyfarpar. Bydd angen tir ychwanegol ar gyfer sgrinio
- **Creu cynefinoedd** – rydym wedi ymrwmo i greu neu ail-leoli cynefinoedd ar gyfer planhigion ac anifeiliaid
- **Mesurau i leihau sŵn** – rydym yn gwneud pob ymdrech i leihau unrhyw sŵn o'r is-orsaf ac yn dilyn canllawiau cyfreithiol caeth wrth osod cyfarpar. Gall plannu a sgrinio hefyd leihau unrhyw sŵn

If this strategic option is taken forward, careful consideration will be given to reducing the effects of a new substation, with measures including:

- **Landscape screening and planting** – planting of appropriate shrubs and trees as well as screening measures, such as the creation of earth bunds, can help reduce the visual impact of our equipment. Extra land will be required for screening
- **Habitat creation** – we are committed to creating or relocating habitats for plants and animals
- **Measures to reduce noise** – we pay careful attention to reducing any noise from the substation and follow strict legal guidelines when installing equipment. Planting and screening can also help reduce any noise

Ar gyfer y tri safle, fe fyddai angen cysylltiad o'r is-orsaf arfaethedig i'r rhwydwaith dosbarthu lleol 132 kV. Ar hyn o bryd, mae ScottishPower Energy Networks yn sôn am wneud y cysylltiad hwn o dan y ddaear.

For all three sites, a connection from the proposed substation to the existing 132 kV local distribution network would be needed. At the moment, ScottishPower Energy Networks is proposing that it will make this connection underground.



### Am ragor o wybodaeth

Cewch wybod rhagor am safleoedd yr is-orsaf drwy ddarllen 'West Gwynedd Substation Siting Study', sydd ar gael ar gais.

Gellir llwytho copïau i lawr o [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) ac maent ar gael i'w gweld mewn nifer o leoliadau cyhoeddus.

**Holwch aelod o'r tîm am ragor o wybodaeth.**



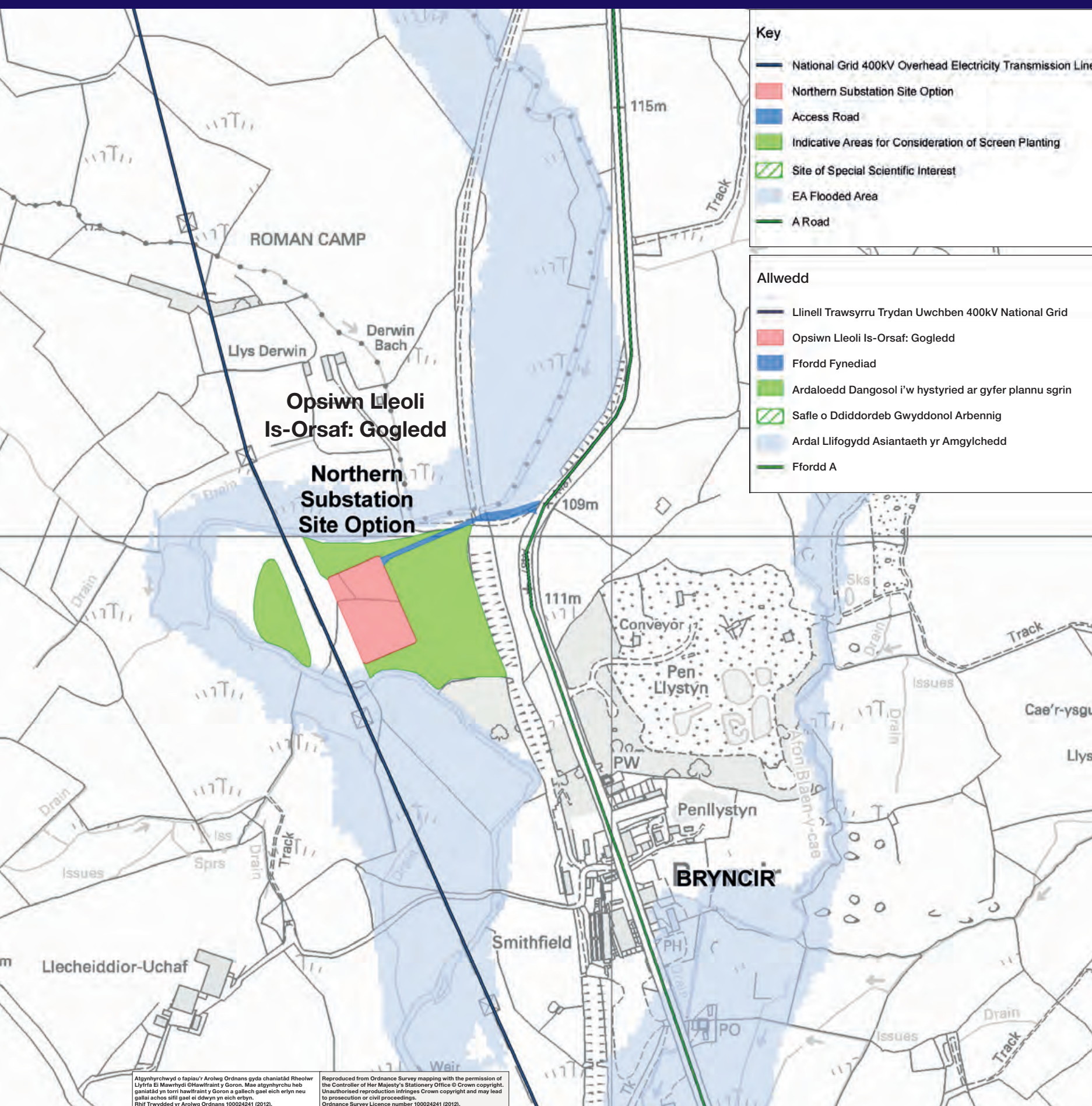
### For more information

You can find out more about the substation sites by reading the 'West Gwynedd Substation Siting Study', available on request.

Copies can also be downloaded from [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and are available for viewing at a number of public locations.

**Please speak to a member of the team for more information.**





## Safle'r Gogledd

Mae safle'r Gogledd i'r gogledd o Fryncir ac i'r dwyrain o linell uwchben 400 kV gyfredol National Grid.

Byddai mynediad o'r A487, gan ddefnyddio trac mynediad cyfredol i Derwin Bach. Mae'r safle cyfan yn laswelltir wedi'i wella ac wedi'i amgylchynu'n bennaf gan laswelltir cors.

### Prif Nodweddion a Dynodiadau

- Does yr un eiddo o fewn y safle nac yn ffinio ag ef. Y mae 17 eiddo preswyl o fewn 500 metr i'r safle ac mae drws nesaf i unedau diwydiannol a'r farchnad amaethyddol.
- Mae Marchnad Amaethyddol Gorllewin Gwynedd, Ystad Ddiwydiannol Bryncir a Garej Bryncir o fewn 500 metr.
- Does dim dynodiadau tirwedd nac amgylcheddol ar y safle; mae Ardal Gadwraeth Arbennig Corsydd Eifionydd oddeutu 1.6km i'r dwyrain o'r safle ac mae Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA) Llystyn Isaf oddeutu 650m i'r de; mae SoDdGA Cors Graianog oddeutu 1.6km i'r dwyrain.
- Mae un heneb restredig, Maen Hir Llystyn Gwyn, 750m i'r gogledd ddwyrain.
- Mae llwybr beiciau pellter hir yn rhedeg ar hyd ffin y safle i'r dwyrain.
- Mae'r safle'n osgoi'r ardal lle ceir perygl o lifogydd.

## Northern site option

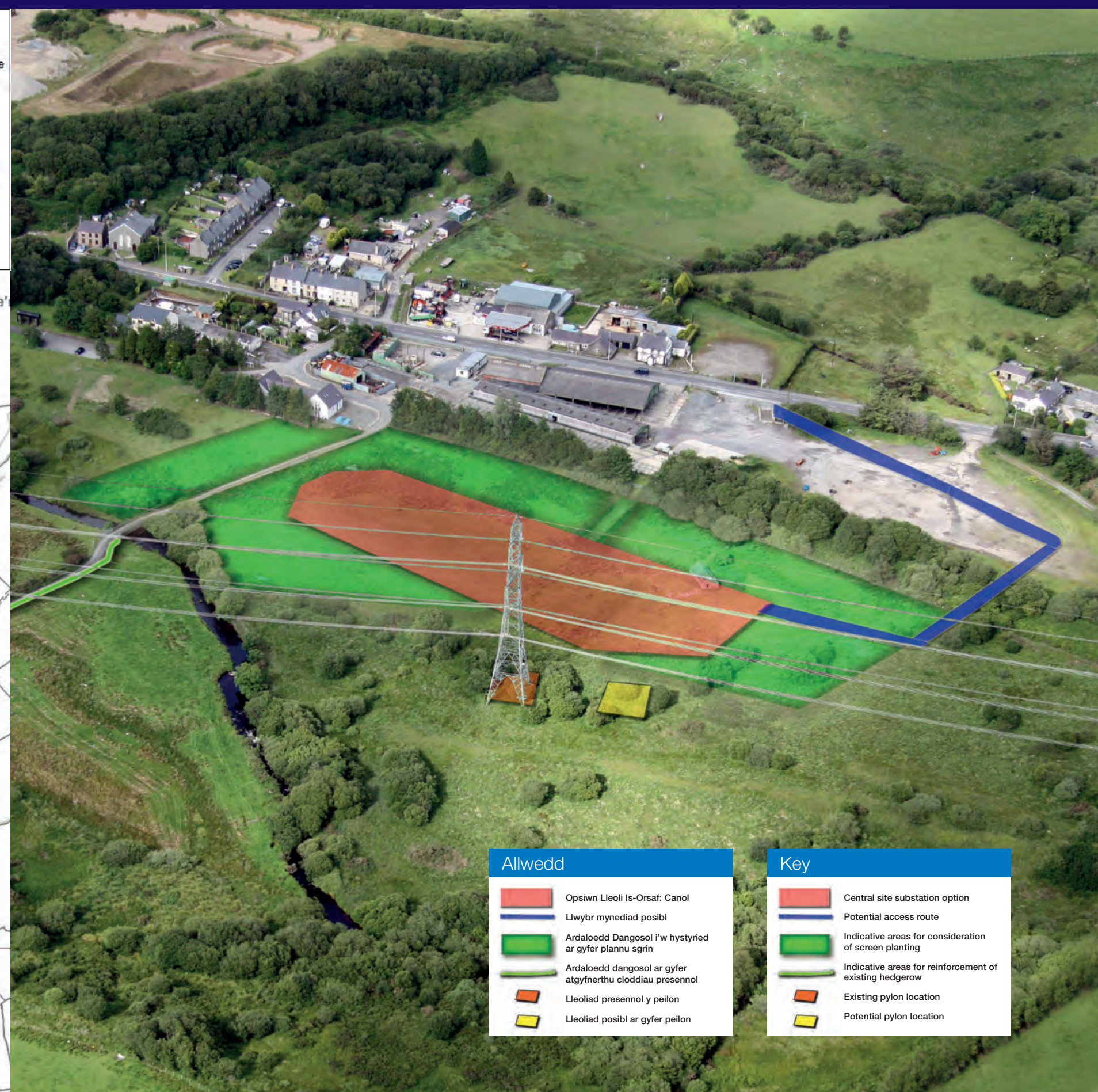
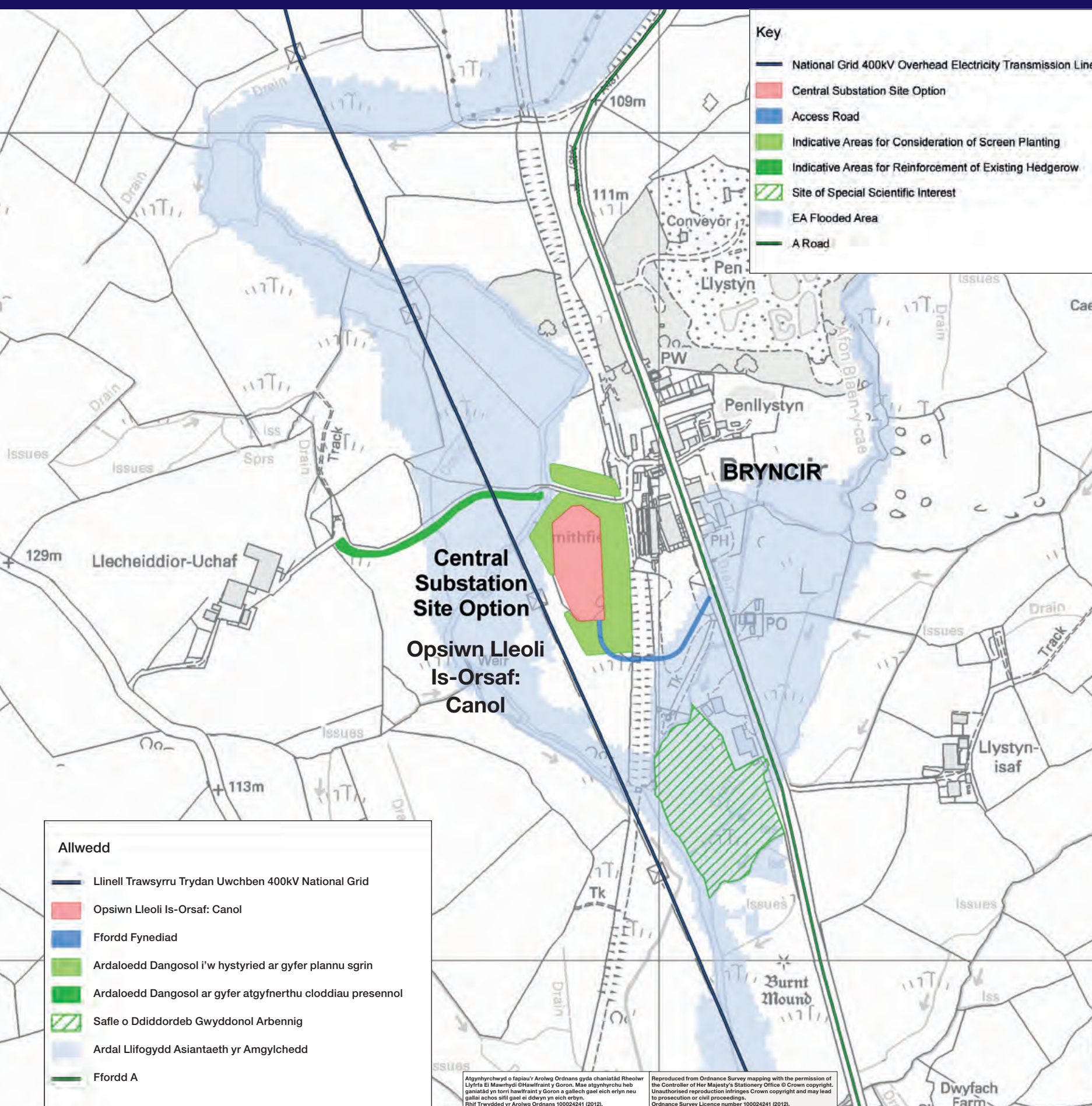
The Northern site option is situated to the north of Bryncir and east of the existing National Grid 400 kV overhead line.

Access would be from the A487, and may use an existing access track to Derwin Bach. The site consists almost entirely of improved grasslands and is surrounded in the main by marshy grasslands.

### Key Characteristics and Designations

- No properties are located within or border the boundary of the site.
- There are 17 residential properties within 500 metres of the site.
- West Gwynedd Agricultural Market, Bryncir Industrial Estate and Bryncir Garage are located within 500 metres.
- There are no landscape or environmental designations on the site; Corsydd Eifionydd/ Eifionydd Fens Special Area of Conservation (SAC) is situated approximately 1.6 km to the east of the site; and the Llystyn Isaf Site of Special Scientific Interest (SSSI) is situated approximately 650m to the south; Cors Graianog SSSI is approximately 1.6km to the east.
- There is one scheduled monument, Llystyn Gwyn Inscribed Stone, 750m to the north east.
- A long distance cycle route runs along the boundary of the site to the east.
- The site avoids the flood risk area.





## Safle'r Canol

Mae safle'r Canol i'r gorllewin o Fryncir ac i'r dwyrain o linell uwchben 400 kV gyfredol National Grid.

Byddai angen llwybr newydd ar draws hen arglawdd y rheilffordd. Mae'r safle'n cael ei ddefnyddio at ddibenion amaethyddol ar hyn o bryd gyda'r holl dir yn dir amaethyddol gradd isel.

### Prif Nodweddion a Dynodiadau

- Does yr un eiddo o fewn y safle. Y mae 22 eiddo preswyl o fewn 500 metr i'r safle ac mae drws nesaf i unedau diwydiannol a'r farchnad amaethyddol.
- Mae llwybr beiciau pellter hir yn rhedeg ar hyd ffin ogleddol y safle.
- Does dim dynodiadau tirwedd nac amgylcheddol ar y safle. Mae rhan o Ardal Gadwraeth Arbennig Corsydd Eifionydd oddeutu 1.6km i'r dwyrain o'r safle; mae Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA) Llystyn oddeutu 75m i'r de; ac mae SoDdGA Cors Graianog oddeutu 1.6km i'r dwyrain.
- Mae oddeutu 0.4 hectar o'r ardal hon mewn ardal lle ceir perygl o lifogydd.
- Mae fferm Llecheiddior Uchaf sydd wedi'i lleoli ar y llechwedd i'r gorllewin yn edrych dros y safle, gyda rhywfaint o'r safle i'w weld o grŵp o unedau diwydiannol bychan ar ochr ogleddol y safle.

## Central site option

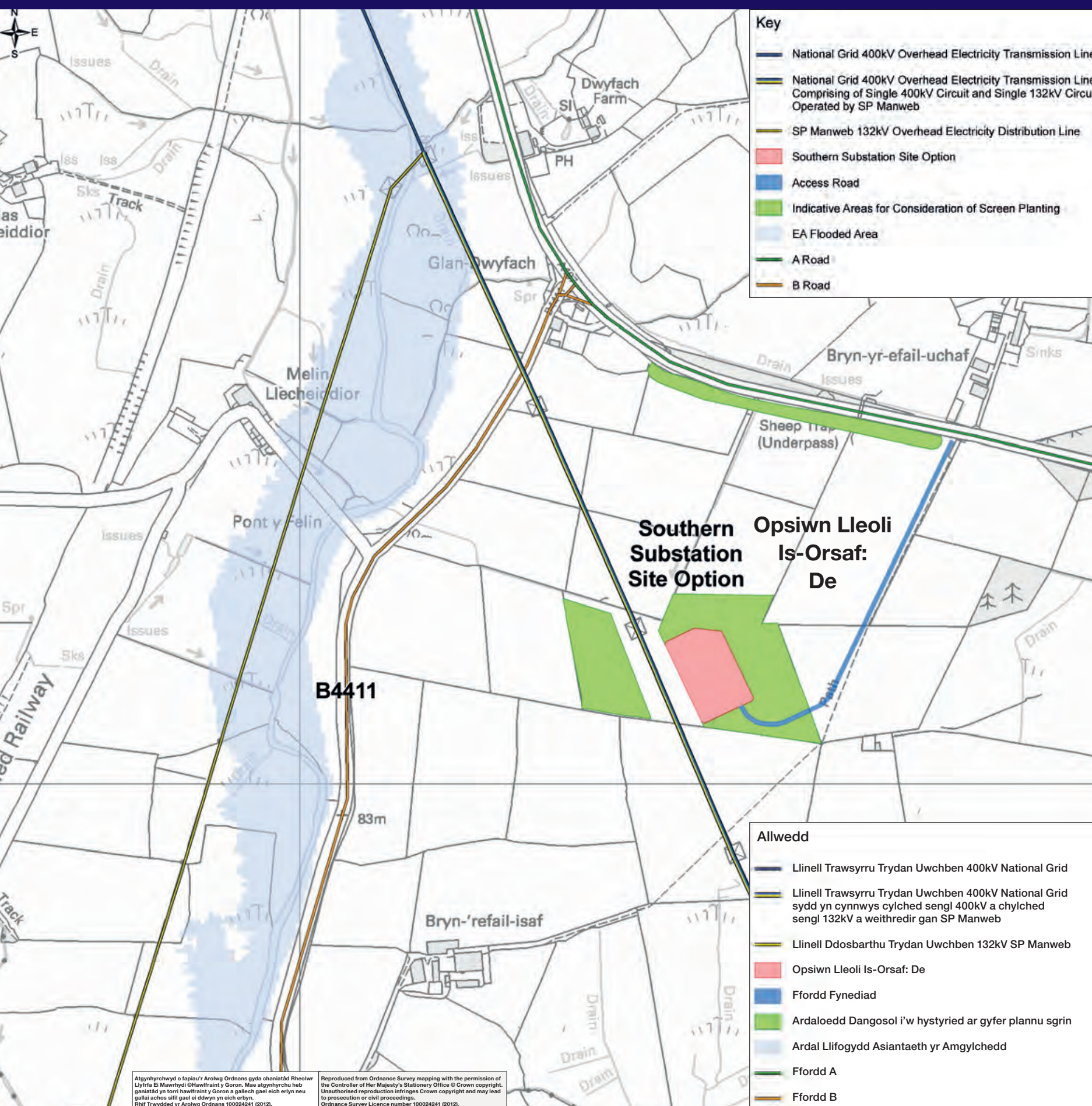
The Central site option is situated directly to the west of Bryncir and east of the existing National Grid 400 kV overhead line.

Access to the site would be from the A487 through the current Agricultural Market car park with a new route across the disused railway embankment being required. The site is currently used for agricultural purposes.

### Key Characteristics and Designations

- No properties are located within the site. There are 22 residential properties within 500 metres of the site and it is next to industrial units and the agricultural market.
- A long distance cycle route runs along the northern boundary of the site.
- There are no landscape or environmental designations on the site; part of Corsydd Eifionydd/ Eifionydd Fens Special Area of Conservation (SAC) is situated approximately 1.6km to the east of the site and Cors Graianog SSSI is approximately 1.6km to the east. Llystyn Isaf Site of Special Scientific Interest (SSSI) is situated approximately 75m to the south.
- Approximately 0.4 hectares of this area lies within a flood risk area.
- The site is overlooked by the Llecheiddior-Uchaf farm on the rising hillside to the west, with limited views from a group of small industrial units at the northern edge of the site.





## Safle'r De

Mae safle'r De oddeutu 1.4 km i'r de o Fryncir a Garndolbenmaen, ac i'r dwyrain o linell uwchben 400 kV gyfredol National Grid.

Byddai modd cael mynediad i'r safle o'r A487 a bydd angen gosod trac mynediad newydd o 500m ar hyd ffin cae a hawl tramwy cyhoeddus cyfredol. Defnyddir y safle hwn yn bennaf ar gyfer dibenion amaethyddol.

### Prif Nodweddion a Dynodiadau

- Does yr un eiddo o fewn y safle. Y mae 6 eiddo o fewn 500m i'r safle.
- Does dim dynodiadau tirwedd nac amgylcheddol ar y safle; mae rhan o Ardal Gadwraeth Arbennig Corsydd Eifionydd oddeutu 2.3km i'r gogledd ddwyrain o'r safle. Mae Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA) Llystyn Isaf oddeutu 100m i'r gogledd o'r safle. Mae SoDdGA Cors Graianog oddeutu 2.3km i'r gogledd ddwyrain. Mae SoDdGA Ffriddoedd Garndolbenmaen oddeutu 2km i'r dwyrain.
- Does dim o'r ardal o fewn ardaloedd lle ceir perygl o lifogydd a does dim cyrsiau dŵr yn llifo drwyddi.
- Mae fferm Bryn Efail Isaf i'r de orllewin a'r clwstwr bychan o dai ar gyffordd yr A487 a'r B4411 yn edrych dros y safle, gyda rhai o'r tai ar ochr y llechwedd yng Ngarndolbenmaen yn debygol o weld y safle.

## Southern site option

The Southern site option is situated 1.4 km to the south of Bryncir and Garndolbenmaen, and east of the existing National Grid 400 kV overhead line.

Access to the site would be from the A487 with a new access track of 500m needing to be installed along a field boundary and existing public right of way. This site is primarily used for agricultural purposes.

### Key Characteristics and Designations

- No properties are located within the site. There are six properties within 500m of the site.
- There are no landscape or environmental designations on the site; part of Corsydd Eifionydd/ Eifionydd Fens Special Area of Conservation (SAC) is situated approximately 2.3km to the north-east of the site. Llystyn Isaf Site of Special Scientific Interest (SSSI) is situated approximately 100m to the north of the site. Cors Graianog SSSI is approximately 2.3km to the north-east. Ffriddoedd Garndolbenmaen SSSI is approximately 2 km to the east.
- None of the area lies within flood risk areas and no watercourses flow through it.
- The site is overlooked by the Bryn Efail Isaf farm to the south-west and the small cluster of houses at the junction of the A487 and the B4411, with some of the houses on the rising hillside in Garndolbenmaen likely to gain views.





## Cysylltiad tanddaearol ychwanegol yn aber afon Glaslyn

Er mwyn ymdopi â'r ynni ychwanegol yn y rhwydwaith, fe fyddai angen cysylltiad ychwanegol yn aber afon Glaslyn.

Mae'r llinell drydan uwchben gyfredol yng Ngorllewin Gwynedd yn rhedeg o Bentir i Drawsfynydd. Mae'n newid i geblau tanddaearol yn y Wern, i'r gorllewin o Dremadog.

Mae'r cysylltiad wedyn yn parhau o dan y ddaear am oddeutu 6km, oherwydd sensitifrwydd amgylcheddol yr aber a golygfeydd o Barc Cenedlaethol Eryri. Mae wedyn yn dod yn ôl i'r wyneb yn y Garth ger Minffordd ac yn newid yn llinell uwchben unwaith eto, cyn mynd yn ei flaen i Drawsfynydd.

Mae'r dewis strategol a ffefrir gennym yn cynnwys creu llwybr tanddaearol ychwanegol o hyd at 12 cebl er mwyn ymdopi â'r pŵer ychwanegol a fwriedir ar gyfer Gogledd Cymru.

Fe fyddai hyn yn golygu disodli'r tri chebl cyfredol a osodwyd yn wreiddiol yn y 1960au. Mae'n debygol iawn y byddai wedi bod yn angenrheidiol gwneud gwaith i'w disodli yn y 5 i 10 mlynedd nesaf beth bynnag, wrth iddynt ddod i ddiwedd eu hoes weithredol.

## An additional underground connection at the Glaslyn Estuary

To handle the increased energy in the network, an additional connection would be needed at the Glaslyn Estuary.

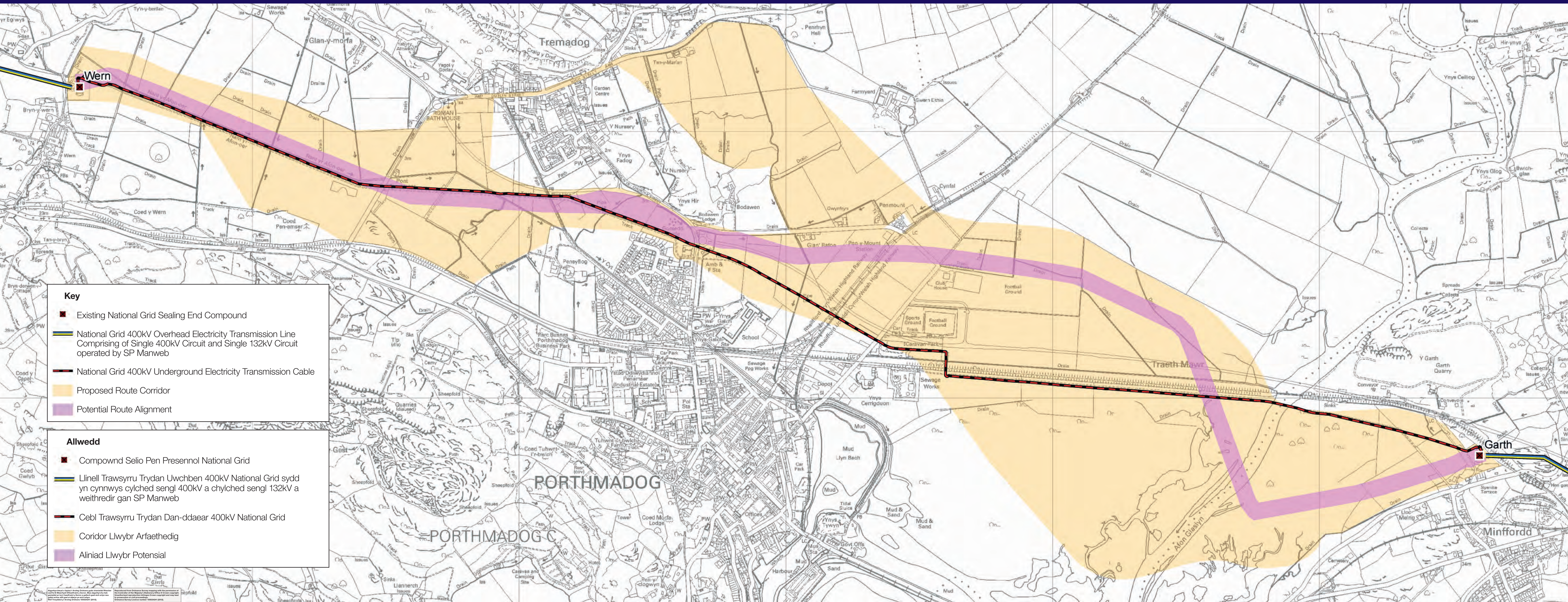
The existing overhead electricity line in West Gwynedd runs from Pentir to Trawsfynydd. It changes to underground cables at Wern, to the west of Tremadog.

The connection then remains underground for approximately 6 km, recognising the environmental sensitivities of the estuary and views into Snowdonia National Park. It then resurfaces at Y Garth near Minffordd and changes to an overhead line again, before continuing to Trawsfynydd.

Our preferred strategic option includes the construction of an additional underground route of up to 12 cables to accommodate the additional power being proposed in North Wales.

This would mean replacing the three existing cables that were originally installed in the 1960s. It is highly likely that work to replace them would have been needed anyway in the next 5-10 years, as they come to the end of their operational life.





## Pennu coridor y llwybr ac aliniad llwybr posibl

Wrth geisio pennu'r llwybr mwyaf priodol ar gyfer y cysylltiad newydd, mae National Grid wedi ystyried ffactorau cymdeithasol, amgylcheddol, technegol ac economaidd pwysig.

Mae 'coridor y llwybr' yn ddam llydan o dir lle byddai'r cysylltiad newydd yn gallu cael ei adeiladu. Rydym yn galw'r llwybr posibl ar gyfer y ceblau yn 'aliniad llwybr'.

Mae'r coridor llwybr a'r aliniad llwybr posibl a ddynodwyd yn dilyn yr un llwybr yn fras â'r ceblau tanddaearol cyfredol.

Wrth bennu coridor y llwybr ac aliniad y llwybr, rhoddwyd ystyriaeth ofalus i ffactorau amgylcheddol a chymdeithasol, effeithiau posibl ar gymunedau lleol, yn ogystal â chyfyngiadau ariannol a pheiriaryddol.

Rydym hefyd wedi cynnal trafodaethau cychwynnol gyda rhanddeiliaid gan gynnwys awdurdodau lleol, Llywodraeth Cymru, Cyngor Cefn Gwlad Cymru, Asiantaeth yr Amgylchedd Cymru, Parc Cenedlaethol Eryri, Cadw, y cynhyrchwyr a ScottishPower Energy Networks.

Fel rhan o'r ymgynghoriad, fe fyddem yn croesawu eich sylwadau ar goridau y llwybr a'r aliniad llwybr posibl a awgrymir gennym.

### **i** Am ragor o wybodaeth

Cewch wybod rhagor drwy ddarllen ein hadroddiad, sef 'Glaslyn Estuary Route Corridor Report', sydd ar gael ar gais.

Gellir llwytho copiau i lawr o [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru) ac maent ar gael i'w gweld mewn nifer o leoliadau cyhoeddus.

**Holwch aelod o'r tîm am ragor o wybodaeth.**

## Identifying the route corridor and potential route alignment

To identify the most appropriate route for a new connection to take, National Grid has considered important social, environmental, technical and economic factors.

A 'route corridor' is a broad width of land within which the new connection could be built. We call the actual path the cables could take a 'route alignment'.

The proposed route corridor and potential route alignment identified broadly follows the same route as the existing underground cables.

In identifying the route corridor and route alignment, careful consideration was given to environmental and social factors, possible impacts on local communities, as well as financial and engineering constraints.

We have also held initial discussions with stakeholders including local authorities, Welsh Government, the Countryside Council for Wales, the Environment Agency Wales, Snowdonia National Park, Cadw, the generators and ScottishPower Energy Networks.

As part of the consultation, we would welcome your views on the route corridor and potential route alignment we have identified.

### **i** For more information

You can find out more by reading our 'Glaslyn Estuary Route Corridor Report', available on request.

Copies can also be downloaded from [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection) and are available for viewing at a number of public locations.

**Please speak to a member of the team for more information.**





## Sut byddai'r cysylltiad yn cael ei wneud?

Mae'r dewis strategol a ffefrir gennym ni yn cynnwys adeiladu llwybr tanddaearol ychwanegol o hyd at 12 cebl.

Os bydd yr opsiwn hwn yn cael ei ddewis, fe fyddai'r broses adeiladu yn cymryd oddeutu 3-4 blynedd ac yn debygol o fod angen lled adeiladu o 50 metr (gweler uchod). Fodd bynnag, fe fyddai'r aber yn cael ei hadfer yn y pen draw ac yn edrych yn debyg i'r hyn a welir yma'n awr.

Fe fyddai pob ymdrech yn cael ei gwneud i leihau effeithiau'r cysylltiad newydd gan ddefnyddio mesurau yn cynnwys:

- Sgrinio a phlannu wedi'u tirweddu
- Creu cynefinoedd
- Rheoli traffig a gwastraff yn ystod y cyfnod adeiladu



### Am ragor o wybodaeth

Cewch wybod rhagor am ddull a phroses National Grid wrth gysylltu prosiectau cynhyrchu ynni newydd drwy ddarllen 'Our approach to the design and routeing of new electricity transmission lines' sydd ar gael yn yr arddangosfa hon.

Gellir llwytho copïau i lawr o [www.nationalgrid.com/undergrounding](http://www.nationalgrid.com/undergrounding) ac maent ar gael i'w gweld mewn nifer o leoliadau cyhoeddus.

**Holwch aelod o'r tîm am ragor o wybodaeth.**

## How would the connection be made?

Our preferred strategic option includes the construction of an additional underground route of up to 12 cables.

If this option is taken forward, the construction process would take approximately 3-4 years and typically require a construction width of 50 metres (see above). However, the estuary would ultimately recover and look much the same as it does today.

Careful consideration would be given to reducing any effects from the new connection with measures including:

- Landscaped screening and planting
- Habitat creation
- Managing traffic and waste during construction



### For more information

You can find out more about the approach and process National Grid follows when connecting new energy generation by reading 'Our approach to the design and routeing of new electricity transmission lines', available at this exhibition.

Copies can also be downloaded from [www.nationalgrid.com/undergrounding](http://www.nationalgrid.com/undergrounding) and are available for viewing at a number of public locations.

**Please speak to a member of the team for more information.**





## Gwaith uwchraddio yn y Wern a'r Garth

Er mwyn ymdopi â'r pŵer a fyddai'n cael ei gludo gan y ceblau tanddaearol newydd, fe fyddai angen uwchraddio'r compownds selio cyfredol ar ddau ben y llwybr yn y Wern a'r Garth.

Pan fo cebl tanddaearol yn ymuno â llinell uwchben, mae'r newid o un i'r llall yn digwydd mewn 'compownds selio'.

Er mwyn ymdopi â'r pŵer o hyd at 12 cebl newydd, fe fyddai angen i National Grid ddiweddarau'r compownds selio cyfredol ar ddau ben y cebl tanddaearol, o fewn ôl troed cyfredol y tir sydd eisoes yn eiddo iddo.

Fe fyddai National Grid yn ceisio sicrhau bod cyn lleied o effeithiau â phosibl, gan ddefnyddio mesurau yn cynnwys rheoli traffig a gwastraff, a sgrinio a phlannu wedi'u tirweddu.

Fe fyddem yn gwerthfawrogi eich adborth ar ein cynigion yn y Wern a'r Garth fel rhan o'n hymgyngoriad.

## Upgrade works at Wern and Y Garth

To accommodate the power carried by the new underground cables, the existing sealing end compounds at either end of the route at Wern and Y Garth would need upgrading.

Where an underground cable joins onto an overhead line, the transition from one to the other takes place at a 'sealing end compound'.

To accommodate the power from up to 12 new cables, National Grid would need to upgrade the existing sealing end compounds at each end of the underground cable, within the existing footprint of land it already owns.

National Grid would aim to keep any effects to a minimum, with measures including traffic and waste management, and landscaped screening and planting.

We would welcome your feedback on our proposals at Wern and Y Garth as part of our consultation.



## **6.2.5**

### **Appendix 5**

# **January 2015 Route Corridor Announcement (English)**



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## Route corridor and plans to go underground at Menai announced

- Route corridor selected that broadly follows existing line
- Underground at the Menai Strait and Anglesey AONB
- Further opportunities to have your say later this year

We are proposing a new overhead line with underground cables at the Menai Strait to connect Horizon Nuclear Power's Wylfa Newydd to the electricity network.

In coming to this important decision we've taken into account feedback from people and organisations, the results of our environmental and technical studies, and our obligations to provide a connection that is efficient, safe and value for money.

In 2012 we asked local people to give us their feedback on the different options for carrying the electricity from new power sources in North Wales.

We know that many of you wanted us to put the connection in the sea. We looked at this option really carefully, but there are a number of important reasons why we have decided not to do this. These include the challenge and cost of connecting a nuclear power station by subsea cables, the complexity and cost for energy users of fixing any faults on these cables. You can read more about this on page two.

You also told us that the Menai Strait is particularly sensitive, so we've decided to place the cables underground here, to minimise the impact on the views both at the Menai Strait and in the Anglesey Area of Outstanding Natural Beauty (AONB).

When we have carried out further studies we'll provide more information on where the route(s) could go and everyone will have the opportunity to give feedback later this year.

### Orange corridor option chosen

We are proposing that the new connection will be made within the Orange route corridor identified in our 2012 consultation (see the map on page three). This broadly follows the existing line on the island that connects the current Magnox power station and has been in place since the 1960s.

The route the line will take within the corridor has not yet been decided. We are doing further work to identify where the pylons might go, while considering the effect on nearby communities.

To do this, we need to carry out more detailed on-the-ground studies to help us identify places where the new line

could have a high visual impact and potential technical challenges. We will be contacting people with an interest in land (e.g. farmers and landowners) within the Orange corridor about this.

### Dear resident



Firstly, I would like to thank everyone for their feedback at the consultation we held in 2012. Last year we published our Feedback Report where you can see all the themes and issues raised and our responses to these.

As we progress with our proposal, I know that many of you will be disappointed that we are not taking forward a subsea option. But I hope you can appreciate that this is not a decision we have taken lightly and on page two we provide more information.

We know that our decision may be unpopular with some people, but using undersea cables would be much more expensive than our chosen option and provide significant technical issues.

Our team of environmental and technical experts, together with other organisations such as Isle of Anglesey Council, Gwynedd

Council and Natural Resources Wales, have provided information to help us to thoroughly examine all of the options.

We have also listened to all the feedback we received from members of the public. We considered this alongside the many other things we must take into account, before reaching a decision.

You told us that the Menai Strait and Anglesey AONB are special places, so we're carrying out studies to look at how we can put the cables underground in these areas.

We understand that the uncertainty since we first consulted has been frustrating for

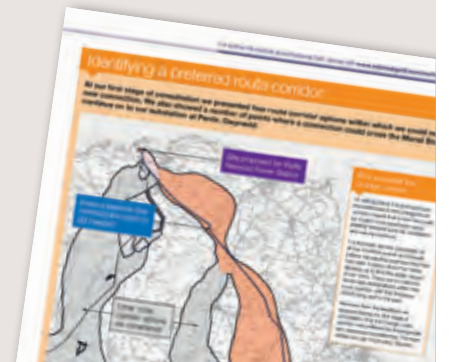
### Inside this newsletter

#### Page 2

- How we reached our decision

#### Page 3

- Orange route corridor map



#### Page 4

- What happens next?
- Project timeline
- Key project documents
- How to contact us

people. But with all the energy generation changes that have taken place, it was important that we carried out a thorough review to ensure we brought forward the most appropriate option based on the information available.

We are hoping to provide more information on our proposed connection using the Orange corridor and hold a further consultation later this year. We hope that as many people as possible will take part in this as your views are important.

**Martin Kinsey**  
Senior Project Manager



## How we reached our decision



### Changing energy proposals in North Wales

Since our first stage of consultation in late 2012, there have been a number of changes to the proposed sources of energy generation in North Wales that have affected the work we need to do:

- Two Irish wind farm projects, Greenwire and Codling Park, have both asked to connect to the network at our substation in Pentir, Gwynedd.

- Celtic Array cancelled its offshore Rhiannon Wind Farm project. This means we no longer need to build a local connection to our existing line on Anglesey at Rhosgoch.

- Horizon Nuclear Power has reduced the amount of energy it intends to generate. The first reactor will begin generating in 2024 and the second in 2025.

All of this means that the proposed new generation we need to connect has changed significantly, on Anglesey and in North Wales more widely.

So we looked again at what is needed, comparing offshore and onshore alternatives. We have reviewed our work against a large number of different factors (see right) and we are confident that our proposed option is still the most appropriate.

While using underground cables to cross the Menai Strait will increase the cost of our proposal, subsea HVDC cables would still be hundreds of millions of pounds more, and there would still be the same technical challenges (see below).

### Q Why not subsea?

**A** We know from the feedback we received that most of you wanted the connection to be built in the sea. We recognise that a subsea connection can reduce visual impact; however this is just one consideration we must take on board.

There are technical issues that make a connection entirely under the sea a challenge. No nuclear power station in the world is currently connected by high voltage direct current (HVDC) subsea cable, and proposals to do this would require many checks from nuclear safety authorities.

One of our main duties is to maintain a network that is reliable, and a fault with one of the subsea cables or its operating system could result in the connection being out of service for up to six months while it's repaired.

This means that we would have to reduce the amount of power generated by Horizon, which in turn would reduce the amount of energy available to meet demand from homes and businesses.

Subsea HVDC cables are designed to carry power over very long distances and need very large and expensive converter stations at either end of each cable (see photo below). This made all of the subsea options we investigated many hundreds of millions of pounds more expensive than our preferred option. This is an important consideration as the cost ends up being passed on to all of us through our energy bills.

Converter stations are very large – around the size of a DIY warehouse – and we'd need to find a suitable site to place each of these at either end of each cable. That would mean finding space for two on Anglesey.



There is limited space at the Wylfa Newydd site to put these. Building them elsewhere would need a new connection between the two sites as well as a link to the coast.

Alternative subsea options using AC (alternating current) cables would be the most expensive of all the options we considered.

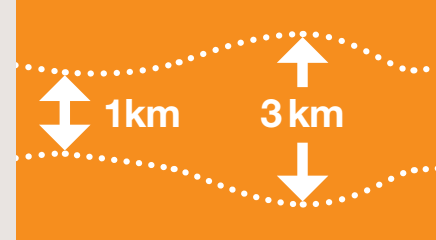
It is for these reasons that we are not proposing a subsea connection. For more details please see our Strategic Options Report and Information Booklet.

## The factors we considered

Alongside your feedback, we undertook a wide range of assessments and considered a number of important factors to develop our proposals. These included:

- **Landscape:** including views to and from the area
- **Cultural heritage:** such as archaeology and areas of historical significance
- **Ecology:** such as protected plant and animal species, important habitats and sites
- **Socio-economic factors:** including tourism in the area and other important activities
- **Construction:** how we would build the connection and associated infrastructure
- **Technical:** making sure the connection will operate safely and securely
- **Cost:** making sure the connection will be cost-effective to build and operate, in line with Ofgem's requirements to keep bills as low as possible
- **Planning guidance:** national and regional planning guidance and law, which set out important considerations for our work

### Route corridor



### Q What is a route corridor?

**A** A route corridor is a broad width of land, within which a connection could be built. We identified corridors by considering the features, including communities and environmental locations, that we wanted to avoid. We also looked at whether the impact of a new connection could be lessened by following existing infrastructure or electricity network corridors.

### Q How will you cross the Menai Strait?

**A** We need to cross the Menai Strait to connect to our existing substation in Pentir. We know that the Anglesey AONB and the Menai Strait are highly valued landscapes both locally and more widely, so we have listened to the feedback we received and have ruled out using pylons here.

From our work to date, we plan to lay the cables on or beneath the bed of the Menai Strait.

Our work in the area is ongoing, but we already know that there are many issues to take into account. This includes environmental and technological challenges, as well as social factors such as tourism. Some of the specific challenges include fast flowing currents, marine life on the

Menai Strait bed, the geology of the area, nearby National Trust properties and other heritage assets.

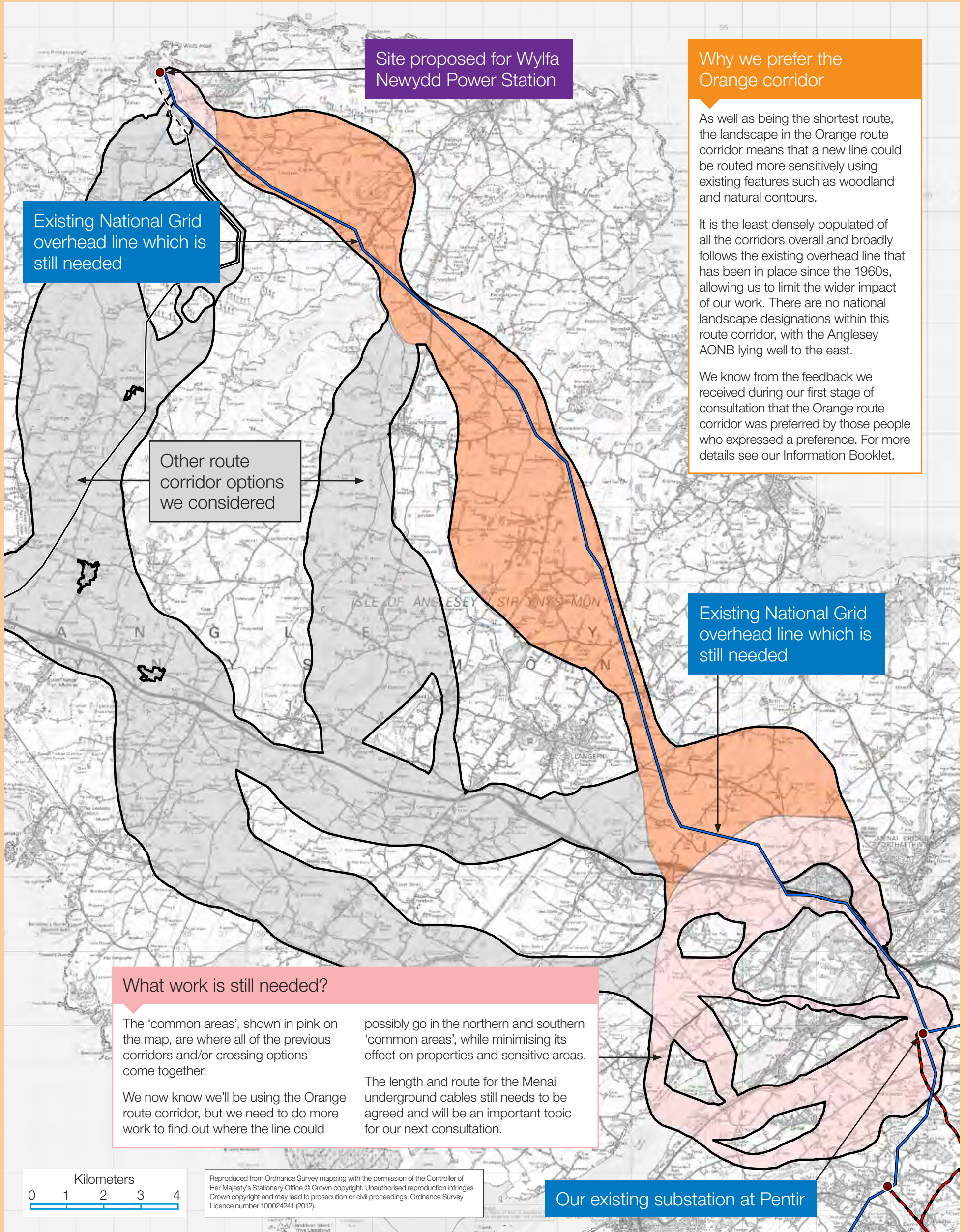
Sealing end compounds are needed to change the overhead line to an underground one or vice versa at each side of the Menai Strait. We need to find areas to put these which will help us decide where the line can go in the southern 'common area' (see page three).

We are working with experts from Bangor University who have the combination of local knowledge and marine expertise to help us understand the complex natural environment around the Menai Strait. We will also be considering the views of the many organisations and businesses who use the Menai Strait and coastline.



# Identifying a preferred route corridor

At our first stage of consultation we presented four route corridor options within which we could make the new connection. We also showed a number of points where a connection could cross the Menai Strait and continue on to our substation at Pentir, Gwynedd.



Site proposed for Wylfa Newydd Power Station

Existing National Grid overhead line which is still needed

Other route corridor options we considered

Why we prefer the Orange corridor

As well as being the shortest route, the landscape in the Orange route corridor means that a new line could be routed more sensitively using existing features such as woodland and natural contours.

It is the least densely populated of all the corridors overall and broadly follows the existing overhead line that has been in place since the 1960s, allowing us to limit the wider impact of our work. There are no national landscape designations within this route corridor, with the Anglesey AONB lying well to the east.

We know from the feedback we received during our first stage of consultation that the Orange route corridor was preferred by those people who expressed a preference. For more details see our Information Booklet.

Existing National Grid overhead line which is still needed

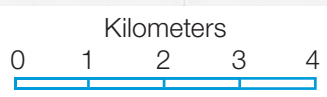
**What work is still needed?**

The 'common areas', shown in pink on the map, are where all of the previous corridors and/or crossing options come together.

We now know we'll be using the Orange route corridor, but we need to do more work to find out where the line could possibly go in the northern and southern 'common areas', while minimising its effect on properties and sensitive areas.

The length and route for the Menai underground cables still needs to be agreed and will be an important topic for our next consultation.

Our existing substation at Pentir



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## Q What happens next?



**A** We will be contacting people with an interest in land so that we can work with them to carry out more detailed on-the-ground environmental and other studies. This is to help us look in more detail at environmentally sensitive areas and potential technical challenges within the Orange corridor and the ‘common areas’.

We’ll also continue to talk to Isle of Anglesey and Gwynedd councils and other organisations with an interest in the project.

Once we have completed a review of all of this work later in the year, we will consult people on a possible route(s) the line could take in the Orange corridor.

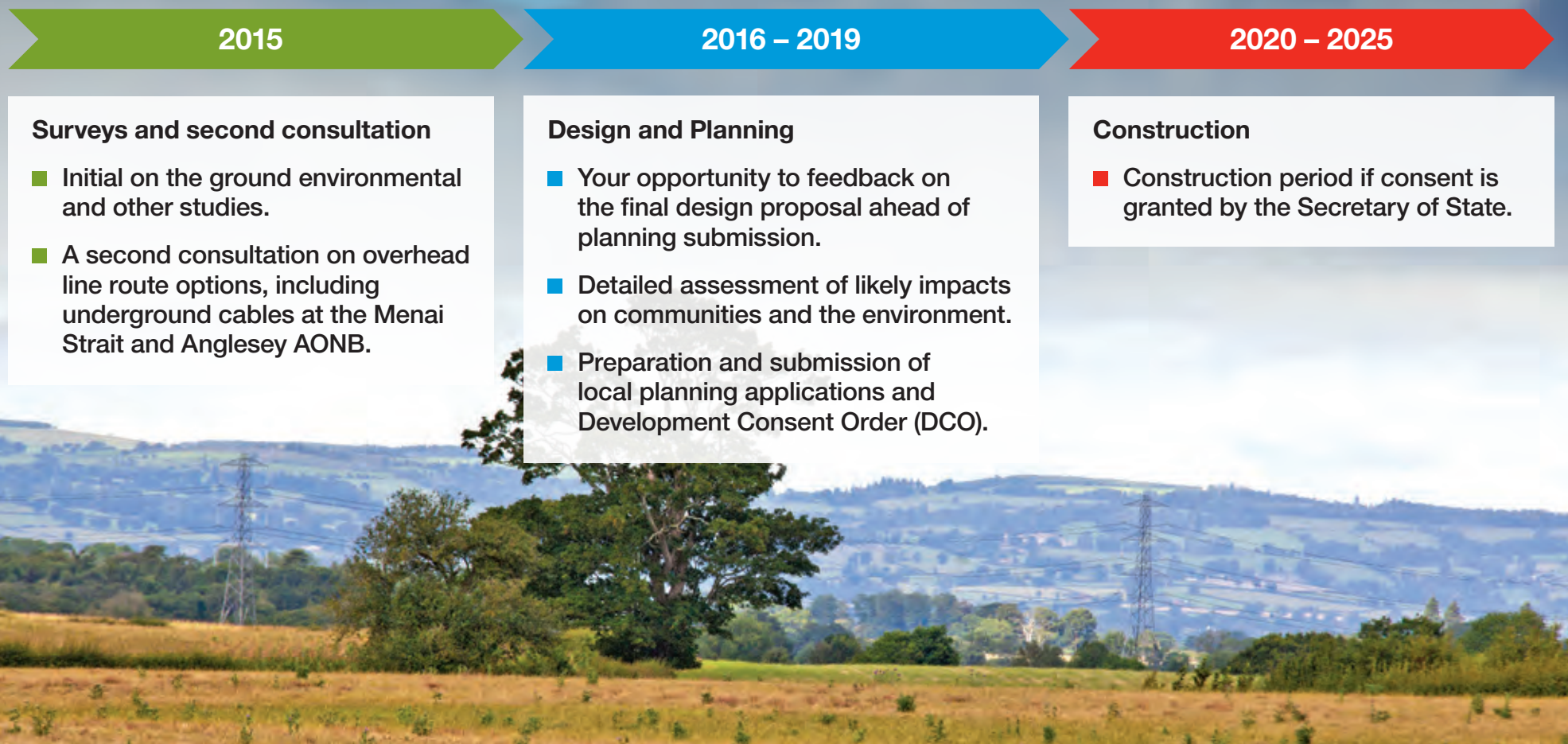
At the same time, we will be able to provide more information about how

we might be able to cross the Menai Strait and ways we propose to reduce the overall effects of our work.

We need to progress our plans to make sure that the connection is in place when it is needed by Wylfa Newydd. We won’t build anything unless it’s needed, and if things change again we will review our proposals to make absolutely certain they are still appropriate.

## Project timeline

This is a long and complicated project. There will be a number of further opportunities for you to provide your views on our proposals as the project progresses, including on route alignment options later in 2015.



## i Key project documents

Project documents providing more information about the North Wales Connection Project include:

■ **Need Case:** Explains why the project is needed. It has been updated to reflect changes in proposed energy generation connecting into North Wales since our first stage of consultation in late 2012.

■ **Strategic Options Report:** Updated to explain our selection and appraisal of the options we considered for connecting the proposed energy generation.

■ **Information Booklet:** A summary that provides more information on our technology and route corridor decision. It includes how we evaluated the strategic options and each of the route corridor options.

**All these are available on our website or by contacting us using the details below.**



## Contact us:

There are lots of ways that you can find out more information, by:



Visiting our project website at: [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)



Sending an email to: [nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)



Calling our freephone number: **0800 990 3567**. Lines are open between 9am – 5pm Monday – Friday



Writing to our freepost address at: **FREEPOST NATIONAL GRID NW CONNECTION**

FSC LOGO

## **6.2.5**

### **Appendix 5**

# **January 2015 Route Corridor Announcement (Welsh)**



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## Cyhoeddi coridor llwybr a chynlluniau i roi ceblau o dan Afon Menai

- Dewis coridor llwybr sy'n dilyn y llwybr presennol yn fras
- O dan y ddaear i groesi Afon Menai ac AHNE Ynys Môn
- Rhagor o gyfle i ddweud eich dweud yn nes ymlaen eleni

Rydym yn cynnig y dylid cael llinell uwch ben newydd gyda cheblau o dan Afon Menai i gysylltu Wylfa Newydd, Pŵer Niwclear Horizon, â'r rhwydwaith trydan.

Wrth gyrraedd y penderfyniad pwysig hwn, rydym wedi talu sylw i ymateb pobl a sefydliadau, canlyniadau ein hastudiaethau amgylcheddol a thechnegol, a'r ddyletswydd sydd arnom i ddarparu cysylltiad sy'n effeithlon, yn ddiogel ac yn rhoi gwerth am arian.

Yn 2012, gofynnwyd i bobl leol roi eu hymateb i ni ar y gwahanol ddewisiadau ar gyfer cludo'r trydan o ffynonellau pŵer newydd yng Ngogledd Cymru.

Gwyddom fod llawer ohonoch yn dymuno i ni roi'r cysylltiad yn y môr. Er i ni edrych ar y dewis hwn yn ofalus iawn, mae nifer o resymau pwysig pam y bu i ni benderfynu peidio â'i wneud. Ymhlith y rhain mae her a chost defnyddio ceblau o dan y môr i gysylltu atomfa, y cymhlethdod a'r gost i ddefnyddwyr ynni pe bai angen trwsio namau ar y ceblau hyn. Cewch ddarllen mwy am hyn ar dudalen dau.

Gan i chi ddweud wrthym hefyd bod Afon Menai'n arbennig o sensitif, rydym wedi penderfynu rhoi'r ceblau o dan y ddaear yma, er mwyn lleihau'r effaith ar y golygfeydd yn ardal Afon Menai ac yn Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn.

Pan fyddwn wedi cynnal rhagor o astudiaethau, mi roddwn ragor o wybodaeth i nodi lle gallai'r llwybr(au) fynd ac fe gaiff pawb gyfle i gyflwyno'u hymateb yn nes ymlaen eleni.

### Dewis y coridor Oren

Ein bwriad ni yw gwneud y cysylltiad newydd oddi mewn i'r coridor llwybr Oren a nodwyd gennym yn 2012 (gweler y map ar dudalen tri). Mae hwn yn dilyn, yn fras, y llinell bresennol ar yr ynys sy'n cysylltu atomfa bresennol Magnox ac a fu yn ei lle er y 1960au.

Ni phenderfynwyd eto pa lwybr y bydd y llinell yn ei chymryd y tu mewn i'r coridor. Rydym yn gwneud rhagor o waith i bennu lle y gallai'r peilonau fynd, gan ystyried yr effaith ar gymunedau gerllaw.

Er mwyn gwneud hyn, mae angen i ni gynnal astudiaethau manylach yn y maes i'n helpu i ganfod lle gallai'r llinell newydd

fod i'w gweld yn amlwg iawn ac achosi anawsterau technegol posibl. Byddwn yn cysylltu â phobl sydd â buddiant mewn tir (e.e. ffermwyr a pherchnogion tir) yn y coridor Oren i drafod hyn.

### Annwyl drigolion



**Yn gyntaf, hoffwn ddiolch i bawb am eu hymateb yn yr ymgynghoriad a gynhaliwyd gennym yn 2012. Y llynedd, fe gyhoeddwyd adroddiad ar yr ymateb gennym sy'n dangos yr holl themâu a'r materion a godwyd a'n hymateb ni i'r rhain.**

Wrth i ni symud ymlaen â'n cynllun, gwn y bydd llawer ohonoch yn siomedig nad ydym yn bwriadu rhoi'r cysylltiad o dan y môr. Ond gobeithio y sylweddolwch nad oedd hwn yn benderfyniad a gymerwyd yn ysgafn ac, ar dudalen dau, rydym yn ceisio esbonio pam.

Gwyddom efallai bod ein penderfyniad yn amhoblogaidd gyda rhai pobl, ond byddai defnyddio ceblau tanfor yn fwy costus o lawer na'r opsiwn a ddewiswyd gennym a byddai'n achosi cryn broblemau technegol.

Mae ein tîm o arbenigwyr amgylcheddol a thechnegol, ynghyd â sefydliadau eraill fel Cyngor Sir Ynys Môn, Cyngor Gwynedd a Cyfoeth Naturiol Cymru, wedi darparu

gwybodaeth i'n helpu ni i ystyried yr holl ddewisiadau yn drwyadl.

Rydym wedi gwrandao hefyd ar yr holl ymateb a gawsom gan aelodau'r cyhoedd. Buom yn ystyried hyn ochr yn ochr â'r llu o bethau eraill y mae'n rhaid i ni eu cymryd i ystyriaeth, cyn dod i benderfyniad.

Fe ddywedoch chi wrthym fod Afon Menai ac AHNE Ynys Môn yn llefydd arbennig, ac felly rydyn ni'n cynnal astudiaethau i weld sut y gallwn roi'r ceblau o dan y ddaear yn yr ardaloedd hynny.

Deallwn fod yr ansicrwydd a fu ers i ni ymgynghori gyntaf wedi bod yn deimlad

Y tu mewn i'r cylchlythyr hwn

### Tudalen 2

- Sut y daethom i'n penderfyniad

### Tudalen 3

- Map o'r coridor llwybr Oren



### Tudalen 4

- Beth sy'n digwydd nesaf?
- Amserlin y prosiect
- Dogfennau allweddol y prosiect
- Sut i gysylltu â ni

rhwystrddig i bobl. Ond, oherwydd yr holl newidiadau a gafwyd ym maes cynhyrchu ynni, roedd yn bwysig i ni gynnal adolygiad trwyadl er mwyn sicrhau ein bod yn symud ymlaen â'r dewis mwyaf addas ar sail yr wybodaeth oedd gennym.

Rydym yn gobeithio cyflwyno rhagor o wybodaeth am y cysylltiad a gynigir gennym gan ddefnyddio'r coridor Oren a chynnal ymgynghoriad arall yn nes ymlaen eleni. Gobeithio y bydd cynifer o bobl ag y bo modd yn cymryd rhan oherwydd mae'ch barn chi'n bwysig.

**Martin Kinsey**  
Uwch Reolwr y Prosiect



## Sut y daethom i'n penderfyniad



### Y newid a fu yng nghynlluniau ynni Gogledd Cymru

Ers cam cyntaf ein hymgyngoriad tua diwedd 2012, bu nifer o newidiadau i ffynonellau cynhyrchu ynni arfaethedig Gogledd Cymru gan effeithio ar y gwaith y mae angen i ni ei wneud:

- Mae dau brosiect Gwyddelig ar gyfer ffermydd gwynt, Greenwire a Codling Park, wedi gofyn am gael cysylltu â'r rhwydwaith yn ein his-orsaf ym Mhentir, Gwynedd.

- Mae Celtic Array wedi canslo'u prosiect nhw, Fferm Wynt Rhiannon. Mae hyn yn golygu nad oes angen i ni adeiladu cysylltiad lleol â'n llinell bresennol yn Rhos-goch, Ynys Môn.

- Mae Pŵer Niwclear Horizon yn bwriadu cynhyrchu llai o ynni. Bydd yr adweithydd cyntaf yn dechrau cynhyrchu yn 2024 a'r ail yn 2025.

Mae hyn i gyd yn golygu bod y cynlluniau ar gyfer prosiectau ynni newydd y bydd angen i ni eu cysylltu wedi newid yn sylweddol, ar Ynys Môn ac yng Ngogledd Cymru'n ehangach.

Felly fe edrychom ni eto ar yr anghenion, gan gymharu'r dewisiadau o dan y môr ac ar y tir. Rydym wedi adolygu ein gwaith yn erbyn nifer fawr o wahanol ffactorau (eitem ar y dde) ac rydym yn hyderus mai'r cynllun a gynnigir gennym ni yw'r mwyaf addas o hyd.

Er y bydd defnyddio ceblau tanddaear i groesi Afon Menai yn cynyddu cost ein cynlluniau, byddai ceblau HVDC tanfor yn dal gannoedd o filiynau o bunnau yn fwy a byddem yn wynebu'r un anawsterau technegol (gweler isod).

## Ffactorau a ystyriwyd

Yn ogystal â'ch sylwadau chi, rydym wedi cynnal nifer o asesiadau ac wedi ystyried nifer o ffactorau pwysig er mwyn datblygu ein cynigion. Mae'r rhain yn cynnwys:

- **Y dirwedd:** yn cynnwys golygfeydd yn edrych tuag at yr ardal ac ohoni
- **Y dreftadaeth ddiwylliannol:** fel archaeoleg ac ardaloedd o bwysigrwydd hanesyddol
- **Ecoleg:** fel rhywogaethau o blanhigion ac anifeiliaid a warchodir, a chynefinoedd a safleoedd pwysig
- **Ffactorau cymdeithasol-economaidd:** yn cynnwys twristiaeth yn yr ardal a gweithgareddau pwysig eraill
- **Adeiladu:** sut y byddem yn adeiladu'r cysylltiad a'r seilwaith cysylltiedig
- **Materion technegol:** gofalu bod y cysylltiad yn gweithio'n ddiogel ac yn sicr
- **Cost:** gofalu y gellir adeiladu'r cysylltiad a'i weithredu mewn ffordd gost-effeithiol, yn unol â gofynion Ofgem i gadw'r biliau mor isel ag y gallwn
- **Canllawiau cynllunio:** cyfraith gynllunio a chanllawiau cynllunio cenedlaethol a rhanbarthol, sy'n nodi ystyriaethau pwysig i'n gwaith ni

## C Pam nad o dan y môr?

**A** Gwyddom o'r ymateb a gawsom fod y rhan fwyaf ohonoch yn dymuno gweld y cysylltiad yn cael ei adeiladu yn y môr. Rydym yn sylweddoli y gall cysylltiad o dan y môr leihau'r effaith weledol; fodd bynnag, dim ond un o'r ystyriaethau y mae'n rhaid i ni feddwl amdanynt yw hynny.

Mae 'na broblemau technegol a fyddai'n golygu bod gosod y cysylltiad i gyd o dan y môr yn her. Nid oes yr un atomfa yn y byd yn cael ei chysylltu â chebl danfor foltedd uchel cerrynt uniongyrchol (HVDC) ar hyn o bryd, a chyn gwneud hynny byddai'n rhaid i awdurdodau diogelwch niwclear gynnal llawer o archwiliadau.

Un o'n prif ddyletswyddau yw cynnal rhwydwaith dibynadwy a, phe bai nam ar un o'r ceblau tanfor neu ei system weithredu, mae'n bosib na fyddai modd ei ddefnyddio am hyd at chwe mis tra byddai'n cael ei drwsio.

Os felly, byddai'n rhaid i Horizon gynhyrchu llai o ynni a byddai hynny,

yn ei dro, yn golygu bod llai o ynni ar gael i ateb y galw gan gartrefi a busnesau.

Mae ceblau HVDC tanfor wedi'u cynllunio i gludo pŵer dros bellter mawr ac mae angen gorsafedd trawsnewid mawr iawn a chostus iawn ar y naill ben a'r llall i'r cebl (gweler y llun isod). Roedd hyn yn golygu y byddai'r holl ddewisiadau tanfor y buom yn ymchwilio iddynt yn costio cannoedd o filiynau o bunnau'n fwy na'r dewis yr ydym yn ei ffafrio. Mae hon yn ystyriaeth bwysig gan ein bod ni i gyd yn gorfod talu'r gost trwy ein biliau ynni yn pen draw.

Mae gorsafedd trawsnewid yn fawr iawn – tua maint warws DIY – a byddai angen i ni ganfod safle addas ar Ynys Môn ar gyfer

y rhain ar y naill ochr a'r llell i'r ceblau. Byddai hynny'n golygu canfod lle ar gyfer dwy ohonynt ar Ynys Môn.

Ychydig o le sydd ar safle Wylfa Newydd i roi'r rhain. Pe baent yn cael eu hadeiladu yn rhywle arall, byddai angen cysylltiad newydd rhwng y ddau safle ynghyd â chysylltiad i'r arfordir.

Y dewis o ddefnyddio ceblau AC (cerrynt eiledol) tanfor fyddai'r mwyaf costus o'r holl ddewisiadau a ystyriwyd gennym.

Am y rhesymau hynny, nid ydym yn cynnig y dylid cael cysylltiad tanfor. Ceir rhagor o fanylion yn ein Strategic Options Report a'n Llyfryn Gwybodaeth.



### Coridor llwybr



### C Beth yw coridor llwybr?

**A** Stribed llydan o dir y gellid gosod cysylltiad oddi mewn iddo yw coridor llwybr. Fe wnaethom ni bennu coridorau trwy ystyried y nodweddion, yn cynnwys cymunedau a lleoliadau amgylcheddol, yr oeddem am eu hosgoi. Buom yn ystyried hefyd a ellid lleihau effaith cysylltiad newydd trwy ddilyn coridorau seilwaith neu rwydweithiau trydan presennol.

## C Sut byddwch chi'n croesi Afon Menai?

**A** Mae angen i ni groesi Afon Menai i gysylltu â'r is-orsaf sydd gennym eisoes ym Mhentir. Gwyddom fod AHNE Ynys Môn ac Afon Menai yn dirweddau sy'n cael eu gwerthfawrogi'n fawr ac felly rydym wedi gwrandao ar yr ymateb a gawsom ac wedi penderfynu peidio â defnyddio peilonau yma.

O'r gwaith a wnaethom hyd yma, bwriadwn roi'r ceblau ar wely Afon Menai neu oddi tano.

Mae ein gwaith yn yr ardal yn parhau, ond gwyddom eisoes bod llawer o faterion i'w hystyried. Mae hyn yn cynnwys anawsterau amgylcheddol a thechnegol, yn ogystal â ffactorau cymdeithasol fel twristiaeth. Mae rhai o'r heriau penodol yn cynnwys cerhyntau cyflym, bywyd morol

ar wely Afon Menai, daeareg yr ardal, eiddo'r Ymddiriedolaeth Genedlaethol a safleoedd treftadaeth eraill gerllaw.

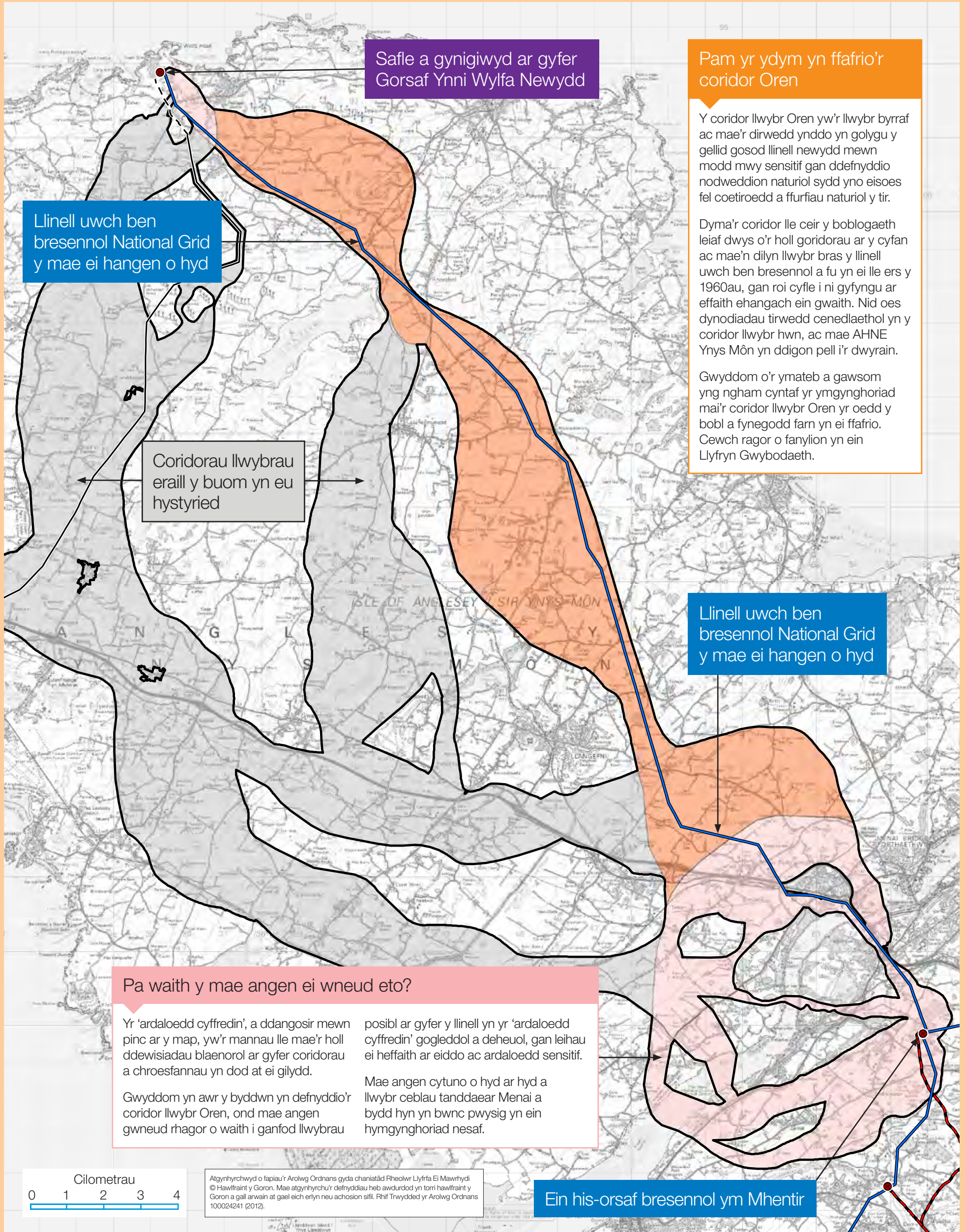
Mae angen compowndiau pennau selio i newid y llinell uwch ben yn gebl tanddaear neu fel arall ar y naill ochr a'r llall i Afon Menai. Mae angen i ni ganfod ardaloedd i roi'r rhain a bydd hynny'n ein helpu i benderfynu lle gall y llinell fynd yn yr 'ardal gyffredin' i'r de (gweler tudalen tri).

Rydym yn cydweithio ag arbenigwyr o Brifysgol Bangor sydd â'r cyfuniad o adnabyddiaeth leol ac arbenigedd forl i'n helpu i ddeall cymhlethdod yr amgylchedd naturiol yn ardal Afon Menai. Yn ogystal, byddwn yn ystyried barn y llu o sefydliadau a busnesau sy'n defnyddio Afon Menai a'r glannau.



# Penderfynu ar goridor llwybr a ffefrir

Yng ngham cyntaf ein hymgynghoriad, cyflwynwyd pedwar coridor llwybr posibl y gallem roi'r cysylltiad y tu mewn iddynt. Yn ogystal, dangoswyd sawl man lle gallai cysylltiad groesi Afon Menai a symud ymlaen i'n his-orsaf ni ym Mhentir, Gwynedd.



Safle a gynigiwyd ar gyfer Gorsaf Ynni Wylfa Newydd

Linell uwch ben bresennol National Grid y mae ei hangen o hyd

Coridorau llwybrau eraill y buom yn eu hystyried

Pam yr ydym yn ffafrio'r coridor Oren

Y coridor llwybr Oren yw'r llwybr byrraf ac mae'r dirwedd ynddo yn golygu y gellid gosod llinell newydd mewn modd mwy sensitif gan ddefnyddio nodweddion naturiol sydd yno eisoes fel coetiroedd a ffurfiau naturiol y tir.

Dyma'r coridor lle ceir y boblogaeth leiaf dwys o'r holl goridoriau ar y cyfan ac mae'n dilyn llwybr bras y llinell uwch ben bresennol a fu yn ei lle ers y 1960au, gan roi cyfle i ni gyfyngu ar effaith ehangach ein gwaith. Nid oes dynodiadau tirwedd cenedlaethol yn y coridor llwybr hwn, ac mae AHNE Ynys Môn yn ddigon pell i'r dwyrain.

Gwyddom o'r ymateb a gawsom yng ngham cyntaf yr ymgynghoriad mai'r coridor llwybr Oren yr oedd y bobl a fynegodd farn yn ei ffafrio. Cewch ragor o fanylion yn ein Llyfryn Gwybodaeth.

Linell uwch ben bresennol National Grid y mae ei hangen o hyd

**Pa waith y mae angen ei wneud eto?**

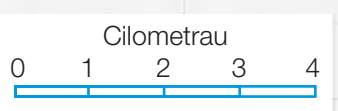
Yr 'ardaloedd cyffredin', a ddangosir mewn pinc ar y map, yw'r mannau lle mae'r holl ddeisiadau blaenorol ar gyfer coridoriau a chroesfannau yn dod at ei gilydd.

Gwyddom yn awr y byddwn yn defnyddio'r coridor llwybr Oren, ond mae angen gwneud rhagor o waith i ganfod llwybrau

posibl ar gyfer y llinell yn yr 'ardaloedd cyffredin' gogleddol a deheuol, gan leihau ei heffaith ar eiddo ac ardaloedd sensitif.

Mae angen cytuno o hyd ar hyd a llwybr ceblau tanddaear Menai a bydd hyn yn bwnc pwysig yn ein hymgynghoriad nesaf.

Ein his-orsaf bresennol ym Mhentir



Atgynhychwyd o fapiau'r Arolwg Ordnans gyda chaniatâd Rheolwr Llyfrla Ei Mawrhydi © Hawlfraint y Goron. Mae atgynhychu'r defnyddiau heb awdurdod yn torri hawlfraint y Goron a gall arwain at gael eich erlyn neu achosion sifil. Rhif Trwydded yr Arolwg Ordnans 100024241 (2012).



## C Beth sy'n digwydd nesaf?



**A** Byddwn yn cysylltu â phobl sydd â buddiant yn y tir fel y gallwn gydweithio â nhw i gynnal rhagor o astudiaethau amgylcheddol ac astudiaethau eraill yn y maes. Bwriad hyn yw ein helpu i edrych yn fwy manwl ar ardaloedd amgylcheddol-sensitif ac anawsterau technegol posibl yn y coridor Oren ac yn yr 'ardaloedd cyffredin'.

Byddwn yn dal i siarad â chynghorau Ynys Môn a Gwynedd hefyd ac â sefydliadau eraill sydd â buddiant yn y prosiect.

Ar ôl i ni gynnal arolwg o'r holl waith hwn yn nes ymlaen eleni, byddwn yn ymgynghori â phobl ynglŷn â llwybr(au) posibl ar gyfer y llinell yn y coridor Oren.

Ar yr un pryd, byddwn yn gallu rhoi rhagor o wybodaeth am ffyrdd posibl o groesi

Afon Menai a'r ffyrdd y bwriadwn leihau effeithiau cyffredinol ein gwaith.

Mae angen i ni symud ymlaen â'n cynlluniau er mwyn sicrhau bod y cysylltiad yn barod pan fydd ei angen ar Wylfa Newydd. Ni fyddwn yn adeiladu dim os nad oes angen ac, os bydd pethau'n newid eto, byddwn yn adolygu ein cynlluniau er mwyn bod yn hollol sicr eu bod yn dal yn addas.

## Amserlin y prosiect

Mae hwn yn brosiect hir a chymhleth. Bydd sawl cyfle eto i chi gyflwyno'ch barn am ein cynlluniau wrth i'r prosiect symud ymlaen, yn cynnwys eich barn am lwybrau posibl, yn nes ymlaen yn 2015.

2015

2016 – 2019

2020 – 2025

### Arolygon a'r ail ymgynghoriad

- Astudiaethau amgylcheddol yn y maes ac astudiaethau cychwynnol eraill.
- Ail ymgynghoriad ar y dewisiadau ar gyfer llwybr llinell uwch ben, yn cynnwys y ceblau tanddaear ar draws Afon Menai ac AHNE Ynys Môn.

### Dylunio a Chynllunio

- Eich cyfle i ymateb i'r cynllun terfynol a gynigir cyn gwneud y ceisiadau cynllunio.
- Aseiad manwl o'r effeithiau tebygol ar gymunedau a'r amgylchedd.
- Paratoi a chyflwyno ceisiadau cynllunio lleol a Gorchymyn Caniatâd Datblygu (DCO).

### Y Gwaith Adeiladu

- Y cyfnod adeiladu os rhoddir caniatâd gan yr Ysgrifennydd Gwladol.



## i Dogfennau allweddol y prosiect

Ymhlith dogfennau'r prosiect sy'n rhoi rhagor o wybodaeth am Brosiect Cysylltiad Gogledd Cymru:

- **Need Case:** Mae'n esbonio pam y mae angen y prosiect. Mae wedi'i ddiweddarau i adlewyrchu newidiadau yn y cynlluniau ynni a bwriedir eu cysylltu yng Ngogledd Cymru ers cam cyntaf ein hymgyngoriad tua diwedd 2012.

- **Strategic Options Report:** Wedi'i ddiweddarau i esbonio ein dewis ac asesu'r opsiynau y buom yn eu hystyried ar gyfer cysylltu'r cynlluniau arfaethedig i gynhyrchu ynni.

- **Llyfryn gwybodaeth:** Crynodeb sy'n rhoi rhagor o wybodaeth am ein technoleg ni a'r penderfyniad am y coridor llwybr. Mae'n cynnwys sut y gwnaethom ni asesu'r dewisiadau strategol a phob un o'r dewisiadau ar gyfer y coridor llwybr.

**Mae'r rhain i gyd ar gael ar ein gwefan neu drwy gysylltu â ni gan ddefnyddio'r manylion isod.**



## Cysylltu â ni:

Mae sawl ffordd o gael rhagor o wybodaeth:



Mynd i wefan ein prosiect:  
[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)



Anfon neges ebost i:  
[nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)



Ffonio ein rhif rhadffôn: **0800 990 3567**.  
Mae'r llinellau'n agored rhwng 9am a 5pm Llun - Gwener



Ysgrifennu i'n cyfeiriad rhadbost:  
**FREEPOST NATIONAL GRID  
NW CONNECTION**

FSC  
LOGO

## **6.2.6**

### **Appendix 6**

#### **January 2015 Summary of Key Project Changes and Updates**



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## **North Wales Connections**

# **Summary of Key Project Changes and Updates**

National Grid

National Grid House

Warwick Technology Park

Gallows Hill

Warwick

CV34 6DA

9 January 2015

## **1 Introduction**

- 1.1 As part of the ongoing North Wales Connections project, National Grid published updated versions of the Project Need Case and Strategic Options Report (SOR) on 9 January 2015. The original Need Case and SOR were published in October 2012.
- 1.2 This summary of key project changes and updates (the “update summary”) states the key changes that have occurred since October 2012 which have required a review of the selection of a preferred strategic option and that are now reflected in the January 2015 version of the SOR.
- 1.3 All versions of the Need Case and SOR documents can be found at the project website (see end of document for link).
- 1.4 The system need for reinforcement in North Wales is driven by the generation and demand developments in this area.
- 1.5 If changes to generation or demand proposals that could have a material impact on National Grid’s strategic options occur, National Grid will reassess the design and cost of previously proposed strategic options to ensure that these remain valid.
- 1.6 The following sections summarise the main changes to the generation background in North Wales that have occurred since October 2012 and also the resulting changes to the system need, strategic option designs, and estimated costs.



## **2 North Wales Generation Developments**

- 2.1 Table 1 shows the contract generation position on which the 2012 system need and strategic options were based and the latest position as of January 2015.
- 2.2 It can be seen that the total contracted generation in North Wales (existing and future) has fallen by approximately 2,200MW since 2012. The most significant changes have been the termination of the Celtic Array wind farm project and the reduction in proposed capacity of the Wylfa Newydd nuclear generation project. There has also been the addition of a new project, Codling Park wind farm, which offsets some of this generation reduction. Other smaller changes to the capacity of existing or planned generators have also taken place.
- 2.3 It can also be seen that the connection dates for some proposed generators, most notably Wylfa Newydd, have moved back. This does not affect the design or cost of proposed strategic options but would potentially change the required delivery date for reinforcement.
- 2.4 For full analysis of the impact of these changes please see the January 2015 version of the North Wales Connections Project Need Case, available at the project website (see end of document for link).

North Wales Connections

Generation Name	Generation Type	Connection Point	2012 Contracted Position		2015 Contracted Position	
			Completion Date	Transmission Entry Capacity (MW)	Completion Date	Transmission Entry Capacity (MW)
Wylfa	Nuclear	Wylfa	Existing	890	Existing	450
Dinorwig	Pumped Storage	Dinorwig	Existing	1,644	Existing	1,644
Ffestiniog	Pumped Storage	Ffestiniog	Existing	360	Existing	360
Dolgarrog	Hydro	Embedded (Pentir)	Existing	39	Existing	39
Maentwrog	Hydro	Embedded (Trawsfynydd)	Existing	30	Existing	30
Cwm Dyli	Hydro	Embedded (Trawsfynydd)	Existing	10	Existing	10
Gwynt y Môr	Offshore Wind	Bodelwyddan	2012 - 2014	574	Completed 2014	565
Burbo Bank Extension	Offshore Wind	Bodelwyddan	2015	234	2016	254
Celtic Array Wind Farm	Offshore Wind	Wylfa	2017 – 2021	2,000	Terminated	
Greenwire Wind Farm	Offshore Wind	Pentir	2018	1,000	2018	1,000
Codling Park Wind Farm	Offshore Wind	Pentir	Not Contracted		2018	1,000
Wylfa Newydd	Nuclear	Wylfa	2020 - 2022	3,600	2024 - 2025	2,800
<b>Total Generation (MW)</b>				<b>10,381</b>		<b>8,152</b>

Table 1 – Comparison of 2012 and 2015 Contract Generation in North Wales

### **3 Design and Cost of Strategic Options**

- 3.1 As a result of the fall in generation development in North Wales, National Grid has concluded that less additional transmission capacity is now required to meet the system need.
- 3.2 The general design (i.e. how and where to transmit the power e.g. connection points, technology, and location) of the strategic options presented in the 2012 SOR remain unchanged. However, due to the lower amount of additional capacity now required, National Grid has been able to refine the specific components (e.g. rating of circuits or number of cables).
- 3.3 National Grid has also updated its assumptions around unit prices for equipment. This has been done to ensure that these assumptions reflect the latest market prices, and also National Grid's agreed regulatory allowances.
- 3.4 These updates have resulted in a change to the estimated costs for the strategic options.
- 3.5 National Grid has also taken account of feedback received during the stage 1 consultation process undertaken in 2012. As a result of this, National Grid has now included a new strategic option (Strategic Option 6) in the latest version of the SOR. This option has been proposed following consultation with stakeholders and primarily consists of the replacement of an existing 132 kV overhead line route between Wylfa and Valley with a 400kV connection, a subsea connection to the mainland (landing on the west Gwynedd coast), and an onshore connection to a new substation in west Gwynedd.
- 3.6 Table 2 shows the estimated cost for all strategic options presented in the 2012 SOR, the updated estimate costs published in the 2015 SOR (which reflect the refined designs and price assumptions), and also the estimated costs for the new Strategic Option 6.



Strategic Option	Description		Cost by Technology Type (£m)			
			OHL	AC Cable	HVDC	GIL
SO1	HVDC Subsea connection Wylfa – Deeside	2012	–	–	1,641	–
		2015	–	–	1,134	–
SO2	HVDC Subsea connections Wylfa – Deeside and Wylfa - Pembroke	2012	–	–	1,877	–
		2015	–	–	1,378	–
SO3	Onshore connection Wylfa – Pentir and Mainland reinforcement works	2012	749	1,673	1,862	1,672
		2015	519	940	1,131	1,153
SO4	Subsea connection Wylfa – Pentir (east) and Mainland reinforcement works	2012	–	2,157	1,909	–
		2015	–	1,255	1,282	–
SO5	Subsea connection Wylfa – Pentir (west) and Mainland reinforcement works	2012	–	2,532	1,993	–
		2015	–	1,468	1,282	–
SO6	Onshore connection Wylfa – Valley, subsea connection Valley – west Gwynedd coast, and onshore connection to west Gwynedd and Mainland Reinforcement Works	2012	–	–	–	–
		2015	915	1,191	1,231	1,328

Table 2 – Comparison of 2012 and 2015 Strategic Option Estimated Costs

- 3.7 It can be seen that the 2015 estimated cost for all strategic options is lower than the 2012 estimates. This is primarily due to the reduction in additional transmission capacity that is required which allows National Grid to use lower rated (and less expensive) equipment.
- 3.8 Although the updates to National Grid's unit price assumptions do have some effect on these changes to estimated cost, the reduction in generation (resulting in for lower capacity requirements) is by far the dominant factor.
- 3.9 Options that include AC Cables or HVDC links show the greatest change in estimated costs. This is due to the fact that the reduced level of transmission capacity required has allowed National Grid to utilise fewer cables in the strategic option design (e.g. three HVDC links have been reduced to two for Strategic Options 1 and 2, and only a single core per phase for the AC Cables in Strategic Options 3, 4 and 5 is now required).
- 3.10 For a full description of the updated strategic option design and cost calculations please see the January 2015 SOR, available at the project website (see end of document for link).

#### **4 Appraisal of Updated Strategic Options**

- 4.1 In order to select a preferred strategic option, the updated strategic options have been subject to the same appraisal process as described in the 2012 SOR. This process examines and compares the environmental and socio-economic impacts, the technical challenges, and the cost of each option to determine which option provides the best balance of all these factors.
- 4.2 The full appraisal process and its conclusions are described in the January 2015 SOR, available at the project website:

<http://www.northwalesconnection.com>





nationalgrid

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**6.2.7**

**Appendix 7**

**January 2015 Information Booklet (English)**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

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# North Wales Connection Project

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## Information Booklet



**Securing our energy supply  
for future generations.**



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If you would like an alternative version of this document please contact us on **0800 990 3567** or go to our website: **[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)**

# 1. Summary

## **We are proposing a new overhead line with underground cables at the Menai Strait to connect Horizon Nuclear Power's Wylfa Newydd power station to the electricity network. We are putting this option forward after reviewing our work and considering all of the comments we received.**

Our proposed new connection will broadly follow the existing overhead line from Wylfa on Anglesey to our substation at Pentir in Gwynedd, within the Orange corridor on Anglesey that we identified in our 2012 consultation. You can see a map of the Orange corridor, together with the other options we looked at, on pages 12 to 19.

People told us that the Menai Strait is particularly sensitive, so we've decided to put the cables on or beneath the bed of the Menai Strait and use underground cables within the Anglesey Area of Outstanding Natural Beauty (AONB) to minimise the impact on views here.

For a number of important technical and economic reasons, we are not putting forward a subsea connection. You can read more about this on page 9.

Our proposal is based on:

- A review of our work in light of all the changes to proposed energy generation in North Wales
- Technical, environmental and economic considerations
- Consultation feedback from the public and from organisations such as Isle of Anglesey and Gwynedd councils, Natural Resources Wales and many others
- Our further assessment work, and consideration of national and local planning requirements
- Our obligation to develop and maintain an efficient, co-ordinated and economical system
- Consultation with the energy generators, including Horizon Nuclear Power.

Since our first stage of consultation in 2012, there have been a number of changes to the proposed sources of energy in North Wales (see pages 10 to 11 for more details). This document provides an overview to explain why a new connection is still needed and the large number of factors we took into account.

### **Next steps**

We are now going to look in much more detail at exactly where pylons and underground cables could go and how we can minimise the impact of these. We will talk to landowners, community councils, county councils and others about this, before holding a wider consultation with the public later in 2015.

We will also carry out in-depth studies to look at where and how we might cross the Menai Strait and Anglesey AONB using underground cables.

Your feedback when we consult will be really important to us. It will be your chance to let us know whether you have any comments on our proposals and whether there is anything else that we should take into account before they are finalised.

## 2. Introduction

### National Grid – who we are and what we do

**Our job is to connect people to the energy they use, safely. While we do not generate electricity ourselves, we are at the heart of one of the greatest challenges facing our society: delivering clean energy to support our world long into the future.**

We operate the systems that deliver electricity and gas across Great Britain and own the network across Wales and England. That means we hold a vital position at the centre of the energy system. We join everything up.

We need to find ways of connecting new low carbon generation to meet the UK's future energy needs and climate change targets. These new power sources all have to be connected to the transmission network so the electricity

they generate can be transported to where it is used. It is our job to propose how and where a new connection goes back to the existing grid from where a developer wants to build a power station.

#### The changing mix of power generated in the UK

In Wales and England, much of the new electricity generation will be sited on the coast or offshore where the National Grid network doesn't currently extend to, or where the network may need upgrading or reinforcing to carry more power.

Deciding on where and how to build new high voltage electricity lines is a complex decision. Most of the existing network takes the form of overhead lines. Overhead lines provide the most economic solution for transporting

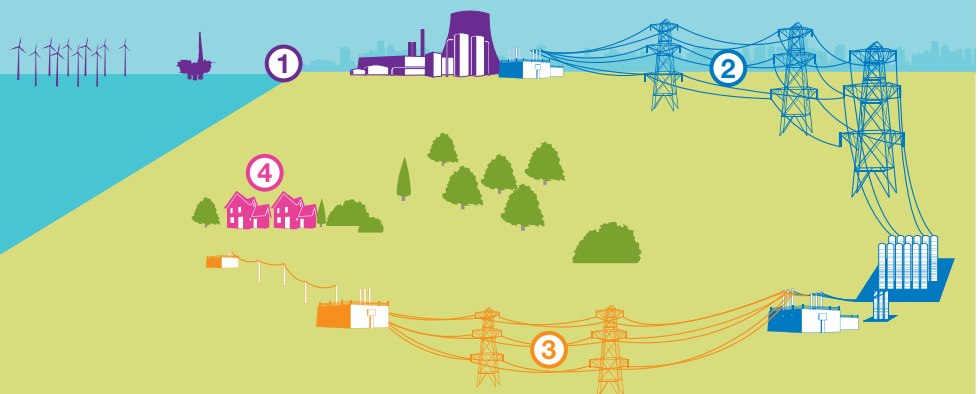
electricity here in the UK and around the world, so they have the least impact on our bills. All of our proposals have been developed taking into account a range of factors, including the environment, people's feedback, technical requirements and cost. We seek to balance the effects on all of them.

Find out more about the energy challenge and how National Grid is helping find solutions to some of the challenges we face at

[www.nationalgridconnecting.com](http://www.nationalgridconnecting.com)

### How the electricity network operates

- 1 Electricity generators
- 2 Electricity transmission
- 3 Electricity distribution
- 4 Electricity supply



**The energy industry transports electricity from where it is generated by power stations via the transmission system and distribution network.**





“ The national electricity transmission network can be compared to motorways; high capacity network linking major towns and cities, while local distribution companies look after the smaller A-roads that bring electricity to our homes and businesses. ”

## Our duties and obligations

**We are regulated by Ofgem, which looks to make sure customers get value for money. There are also some things we are required to do by legislation. Under the Electricity Act (1989) we are required to develop and maintain an efficient, coordinated and economical transmission system, and to facilitate competition in the supply and generation of electricity. We need to carefully consider the environmental effects of our works, together with the cost of our projects as this is ultimately paid for by consumers in their energy bills.**

Satisfying all our duties can be complicated. Each project must be treated on a case by case basis so we strike an appropriate balance of the potential social, economic and environmental impact it may have.

We believe this balance is best achieved by:

- Consulting widely and effectively from an early stage in our project development process
- Being open with information and transparent with the judgements we make
- Developing plans that deliver what society needs from us.



### Who decides if our proposal should go ahead?

The Secretary of State for Energy and Climate Change will decide whether our proposal should ultimately go ahead. He or she will decide whether we have struck the right balance before making a decision.

### Who decides where connections for new energy projects are built?

National Grid has a statutory obligation to connect new energy generation facilities to the electricity network. Anyone can ask us to connect to their project and we must respond with a connection offer.



This project is a Nationally Significant Infrastructure Project (NSIP) because it involves the development of an electricity transmission connection operating at over 132 kV. This means we have to submit an application for what is known as ‘development consent’ to the Planning Inspectorate. The Secretary of State for Energy and Climate Change will then make the final decision on whether to grant or refuse consent.

### More information

Information about **National Grid and the Electricity Industry** and **The Energy Challenge** is available from our Project website or we can provide it on request (see back cover for contact details).

# 3. Summary of our first stage of consultation

## Our Stage One consultation in 2012



**Between October and December 2012, we held our first stage of consultation on connecting proposed low carbon energy projects to the electricity network in North Wales.**

A total of 736 people came along to our 35 exhibitions across Anglesey and Gwynedd. We received 1,549 pieces of feedback during this first stage of consultation, which included 1,057 campaign postcards and responses from 38 stakeholder organisations.

We looked at a number of potential ways to make a connection, including cables in the sea, on land and a combination of both (see page 8 for details). We also consulted people on our proposal, which was for an overland connection comprised of three key packages of work:

- An additional underground connection at the Glaslyn Estuary, to strengthen the network so it could handle the increased amount of energy to be transported on the network.

At the time, this was based on our need to connect Horizon's proposed nuclear power station at Wylfa, generating up to 3.6 gigawatts (GW), together with 2 GW from Celtic Array's proposed Rhiannon wind farm in the Irish Sea. Both of these were contracted with us to connect on Anglesey.

Since 2012, there have been significant changes to the energy generation being proposed in North Wales (see page 10 for more details). So we've needed to review our work to make sure we took forward the most appropriate option.



- An additional overhead connection between Wylfa on Anglesey and Pentir in Gwynedd, to connect new low-carbon generation sources at Wylfa and in the Irish Sea to our existing network in North Wales
- A new substation in West Gwynedd, to maintain reliable supplies in the area

**i More information**

In June 2014, we published our Stage One Feedback Report, which summarises all of the feedback we received together with our responses to all of the issues and themes that were raised. You can find a copy on our project website – [www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)

**Our transmission system in England and Wales consists of about:**

- 22,000 pylons (or towers)\***
- 1,400km (870m) of underground cable\***
- 7,200 km (4,470m) of overhead lines\***

\*Figures correct as of 31 March 2014





## Summary of feedback received

**It was clear from the feedback we received that many people felt we should put the connection in the sea. People asked us to consider this because it was felt that it would have the least visual impact and the least impact on tourism and the wider economy, as well as being a better option environmentally.**

Many people and organisations also told us that the Menai Strait and Anglesey Area of Outstanding Natural Beauty (AONB) are particularly special places, and that we should not put an overhead line here. Of those who expressed a preference from the four route corridor options we presented –

Yellow, Purple, Blue and Orange – most people preferred the Orange corridor, which broadly follows the existing line across the middle of Anglesey.

Of the five Menai Strait crossing options presented - A, B, C, D and E – the highest number felt Option B, which runs alongside the existing line that closely parallels the Britannia Bridge, was the most suitable.

You can read more about all of the route corridors options on pages 12 to 19.



### What is a Gigawatt (GW)?

A watt is a measurement of electricity. A typical household kettle has a power rating of up to 3,000 watts (3 kW). One gigawatt is equal to one billion watts.

**1 gigawatt = 1,000,000,000 watts**

1 GW is the amount of electricity that would be needed if approximately 400,000 kettles all turned on at the same time.





# 4. Our strategic options in 2012

In 2012 we looked at how and where we might connect proposed energy generation from Horizon and Celtic Array to the network. We considered subsea and overland options and combinations of the two. We also looked at what each of these would cost and what impacts they might have.

## Subsea



**Subsea:** Two subsea connection options. Three cables between Wylfa and Deeside, or alternatively two cables between Wylfa and Deeside and one between Wylfa and Pembroke.

## Subsea/Overland



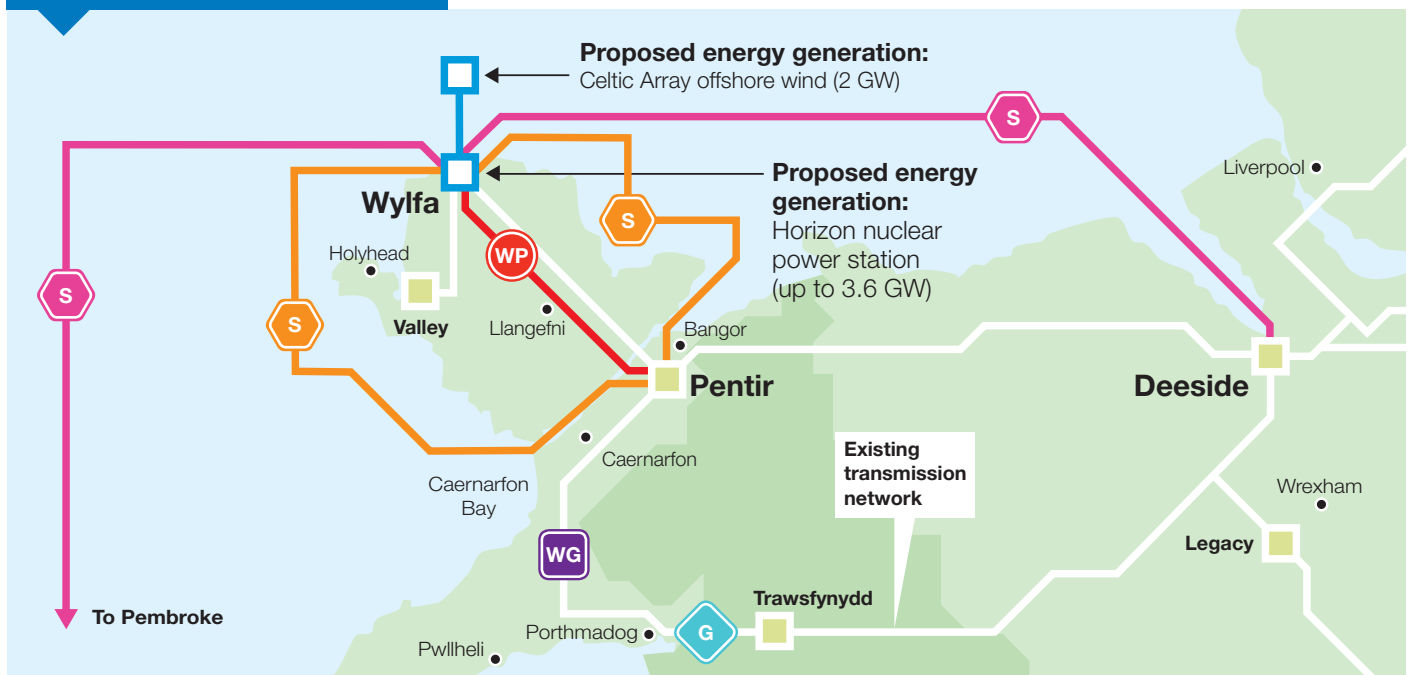
**Subsea/Overland:** A new subsea connection around either the west or east coast of Anglesey between Wylfa and Pentir. Other work would also be needed, including an additional connection underground to strengthen the network at the Glaslyn Estuary and a new substation in West Gwynedd. Some additional work on the existing system.

## Overland



**Overhead/underground between Wylfa-Pentir-Trawsfynydd:** An additional connection, either overhead or underground, between Wylfa and Pentir. An additional connection underground to strengthen the network at the Glaslyn Estuary a new substation in West Gwynedd, and some additional work on the existing system. From all these options, this was our preference in 2012.

The diagram below sets out all of the different connection options we assessed in 2012:





## How we assessed the subsea options

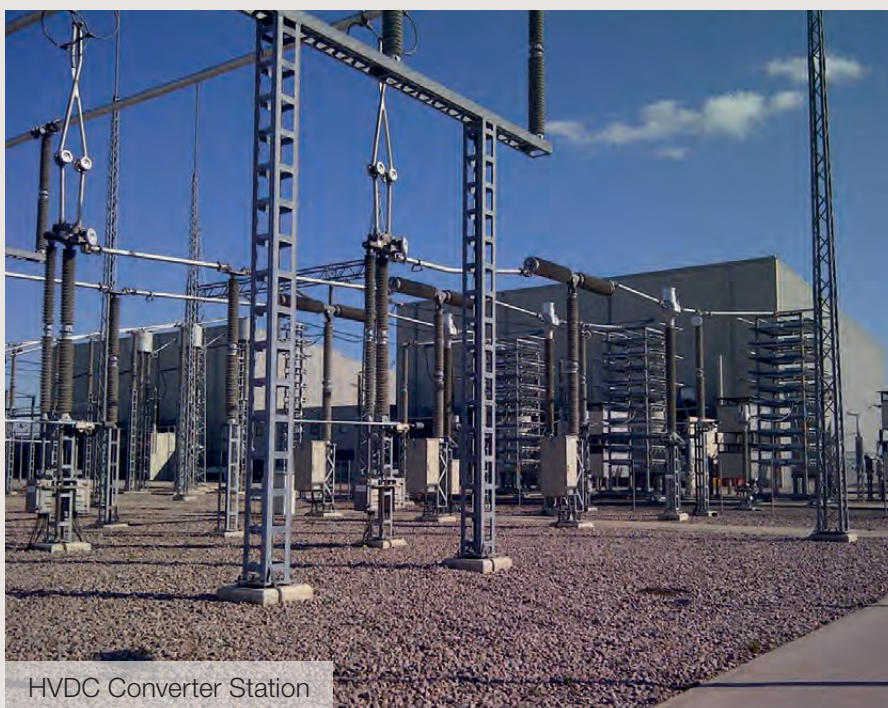
**Most people who responded to our 2012 consultation asked us to make the connection in the sea, mainly because of concerns about the visual impact of an overhead line. Since then, there have been several changes to energy generation proposals in the North Wales area (see pages 10 and 11) and we have reviewed all the options again, including subsea.**

We understand why people would like us to use subsea cables and we have looked very carefully at what this would involve. We've also looked at a part-overland and part-subsea option which some people asked us to consider when they gave us feedback in 2012.

We recognise the benefits of a subsea connection in reducing much of the visual impact of the connection. However, this is just one consideration that we must take into account.

There are technical issues that make a connection entirely under the sea a challenge. No nuclear power station in the world is currently connected using only high-voltage direct current (HVDC) subsea cable and proposals to do this would require many checks from nuclear safety authorities.

In addition to this, a fault in one of the subsea cables or its operating system could result in it being out of service for up to six months while it's repaired. Until the line is working again we would not be able to take all of the power generated from the nuclear station to the grid.



HVDC Converter Station

Subsea HVDC cables are designed to carry power over very long distances and need very large and expensive converter stations at either end of the two cables. This made all of the subsea options we investigated many hundreds of millions of pounds more expensive than our preferred option. This is an important consideration as the cost ends up being passed on to all of us through our energy bills.

Converter stations are very large – around the size of a DIY warehouse – and we'd need to find a suitable site to place each of these at either end of each cable. That would mean finding space for two on Anglesey. There is limited space at the Wylfa Newydd site to put these. Building them elsewhere would need a new connection between the two sites as well as a link to the coast.

Alternative subsea options using AC (alternating current) cables around the coast of Anglesey would be the most expensive of all the options we considered.

It is for these reasons that we are not proposing a subsea connection. For more details please see our Strategic Options Report.

# 5. Update on energy generation in North Wales and our work

## What's changed since we consulted?

Since we drew up our initial options in 2012 there have been several changes to the proposed energy generation in the North Wales area. These are explained below.

We originally needed to connect 5.6 GW of energy in the wider North Wales area. This included connecting:

- 3.6 GW from Horizon Nuclear Power's Wylfa Newydd power station in 2020.
- 2 GW from the Celtic Array offshore windfarm in 2020.

Since then there have been a number of changes to what we need to connect and when:

- Two Irish wind farm projects, Greenwire and Codling Park, have both asked to connect to the network at our substation in Pentir, Gwynedd in 2018.
- Celtic Array cancelled its 2 GW offshore Rhiannon Wind Farm project. This means we no longer need to build a local connection to our existing line on Anglesey at Rhosgoch.
- Horizon Nuclear Power has reduced the amount of energy it intends to generate to 2.8 GW. The first reactor will begin generating in 2024 and the second in 2025.

This means that the total amount of power we now need to connect to our network in North Wales is 4.8 GW. So we looked again at what is needed, comparing offshore and onshore alternatives. We have reviewed our work against a large number of different factors and we are confident that our proposed option is still the most appropriate.

In June 2014 we split this work into two projects along different timescales:

- One project to connect Wylfa Newydd in the mid 2020s.

- One project to connect the Irish wind farms in 2018. We may need to strengthen the existing connection between Pentir and Trawsfynydd, including new underground cables at the Glaslyn Estuary and a new substation in the vicinity of Bryncir.

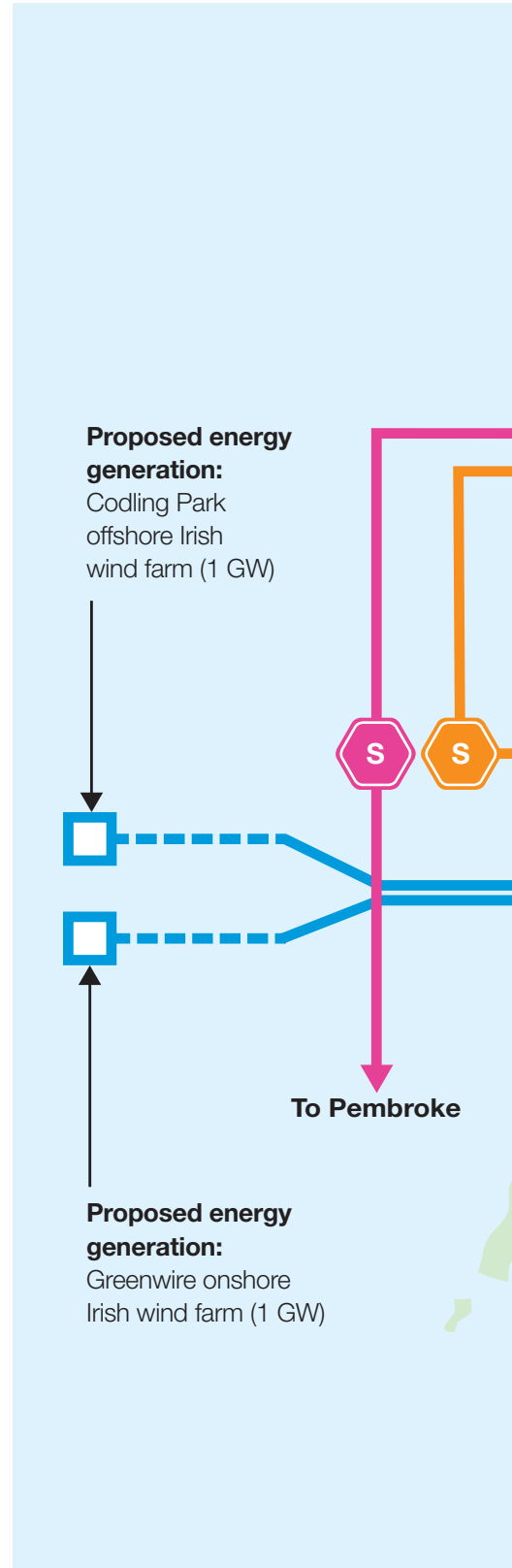
We have looked at what all these changes mean, and a new connection from Wylfa is still needed along with the existing line to connect Wylfa Newydd. The potential ways to do this are set out in our updated Strategic Options Report.

Some people asked us to look at a hybrid option in response to our consultation, primarily focusing on a combination of an overhead connection from Wylfa to the Valley area, then a cable in the sea from here to a new substation at a location in West Gwynedd. This is a new option that is assessed in our revised Strategic Options Report.

Having considered this suggested option we do not believe that the environmental benefits that it offers would justify the significantly higher costs.

After carefully reviewing all of the options to connect the new nuclear power station, we are proposing a new overland connection between Wylfa and Pentir, with underground cables at the AONB and Menai Strait.

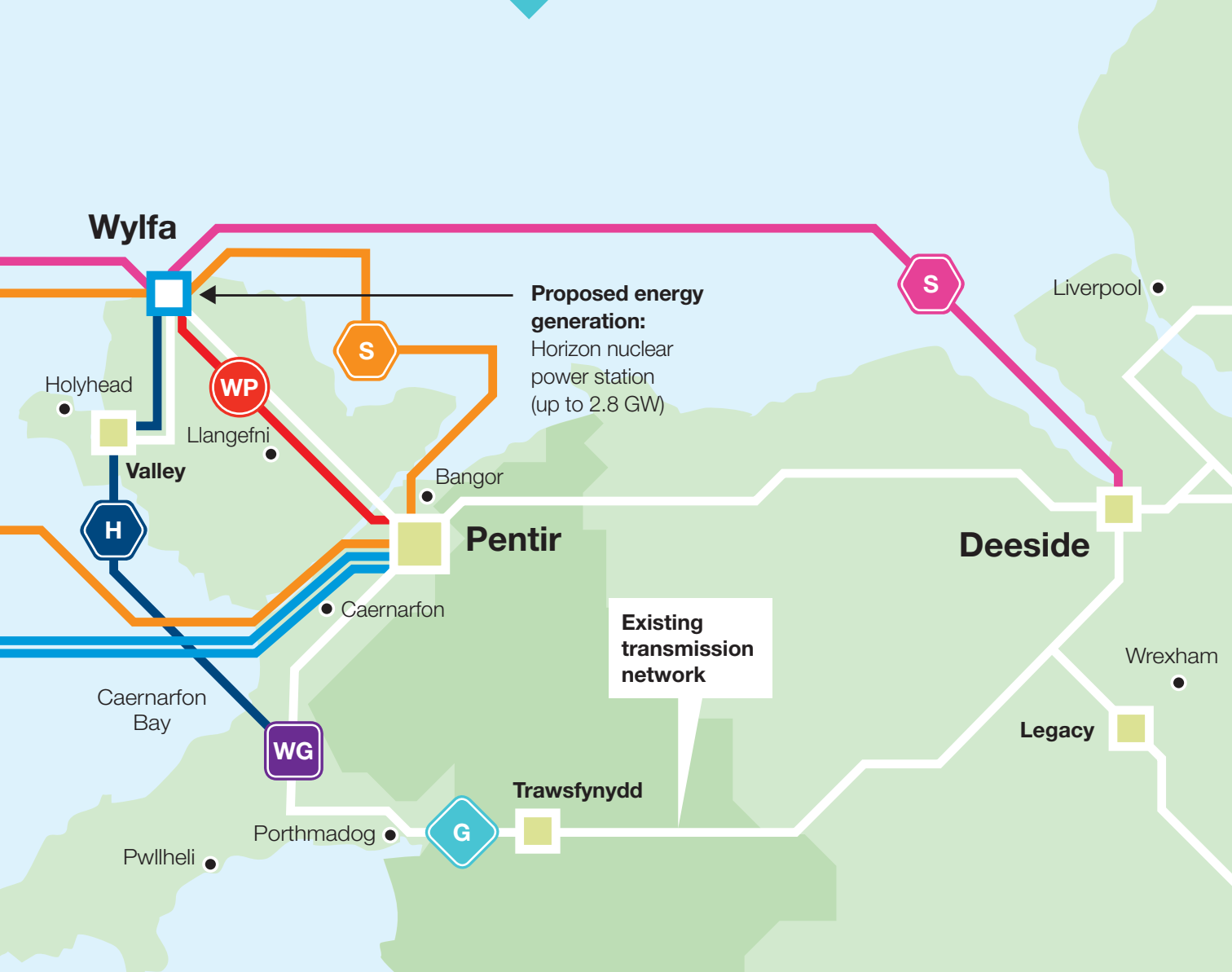
For this proposal we also assessed each of the route corridor options we identified at our first stage of consultation, and evaluated each of these against a large number of criteria (see pages 12-20).












The diagram below sets out all the potential energy connection options in the North Wales area



Key	
	Subsea HVDC Wylfa-Deeside and/or Wylfa-Pembroke
	Subsea Wylfa-Pentir AC cables
	Overland Wylfa-Pentir
	Hybrid Wylfa-Valley area-West Gwynedd
	Underground cables at the Glaslyn Estuary
	New substation(s) in West Gwynedd

# 6. Review of route corridors

## Yellow route corridor option

**The Yellow corridor is approximately 29 kilometres long and provides an option to route a line to the west of the island.**

It leaves Wylfa in a southerly direction, largely mirroring the direction of the existing 132 kV overhead line and A5025 that runs along the west of the island down to the area near Valley and the A55. At that point, the corridor turns east and broadly follows the line of the A55 and A5 to the Menai Strait.

The corridor passes, but does not include, the three settlements of Bodedern, Bryngwran and Llanddeusant. There are no national landscape designations within this corridor, but it does border the Anglesey Area of Outstanding Natural Beauty (AONB) to the west.

Within the Yellow corridor, there are:

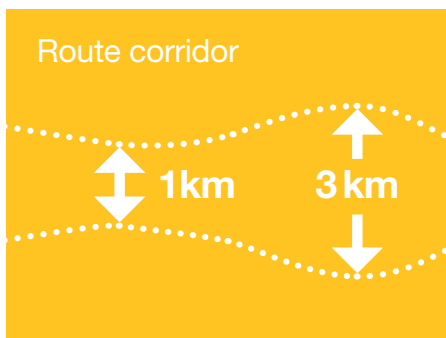
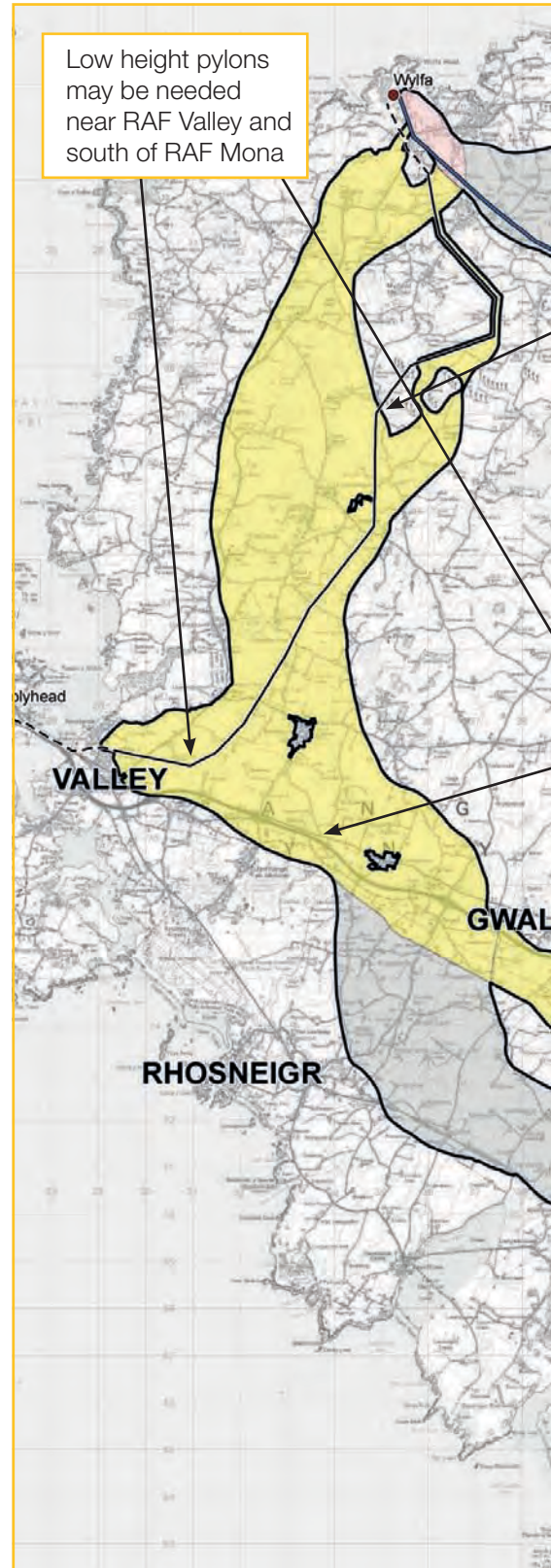
- Five Sites of Special Scientific Interest
- 11 Scheduled Monuments.

The Yellow route corridor would need to cross the A55 at multiple locations and could potentially affect long range views to Snowdonia National Park. Due to the path the new line of pylons would need to take and the landscape of the corridor, there would be less opportunities to use any natural screening. We could remove some of the existing 132 kV pylon line.

In the first stage of consultation, people told us they felt this route would affect the views to and from the AONB, the Anglesey Coastal Path, and the National Cycle Network. People also told us that they were concerned about potential restrictions on aviation activities at RAF Mona and RAF Valley.

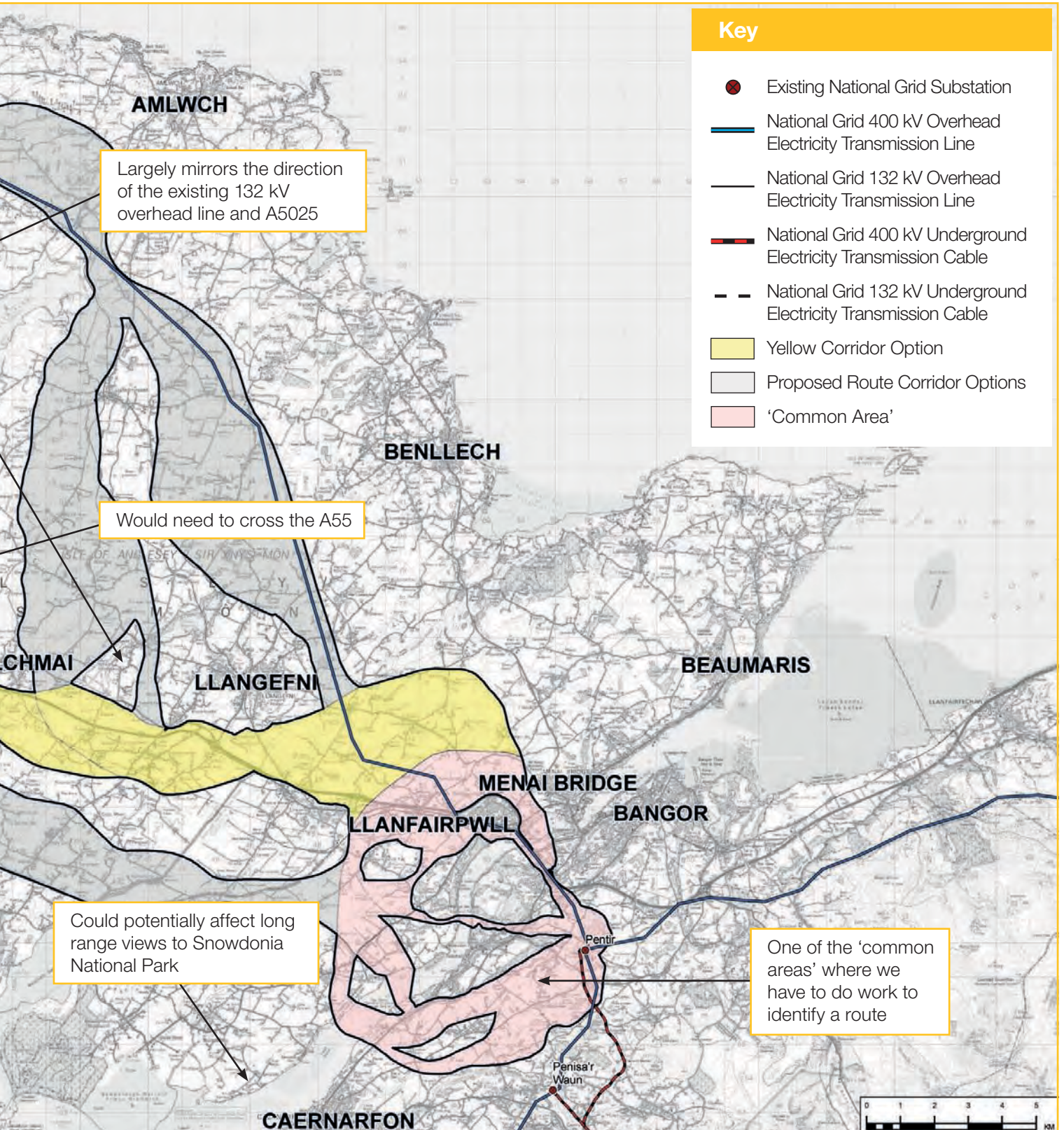
People told us they did not favour this route because it was longer and more expensive than others. Respondents to the consultation also said that it would be detrimental to the Menai Strait because it links most closely to crossing options in sensitive areas.

Taking all of this into account, we will not be taking forward the Yellow corridor option.



**A route corridor is a broad swathe of land, wider in some parts and narrower in others, within which a connection could be built. We identify corridors by considering the features, including communities and environmental sites, that we would seek to avoid.**







# 6. Review of route corridors

## Purple route corridor option

**The Purple corridor is approximately 33 kilometres long and would route the line to the west of the island.**

It leaves Wylfa in a southerly direction, largely mirroring the direction of the existing 132 kV overhead line and A5025 that runs along the west of the island down to the area near Valley and the A55. The corridor then runs toward the southern coast and away from the A55 to broadly follow the railway line toward the Menai Strait.

The purple corridor borders the distinctive landform of Mynydd Mechell at the north and passes (but does not include) the three settlements of Bodedern, Bryngwran and Llanddeusant. A section of it runs close to RAF Valley. It crosses Malltraeth Marsh towards the southern end of the corridor.

There are no national landscape designations within this corridor but it does border the Anglesey Area of Outstanding Natural Beauty (AONB) to the west and south.

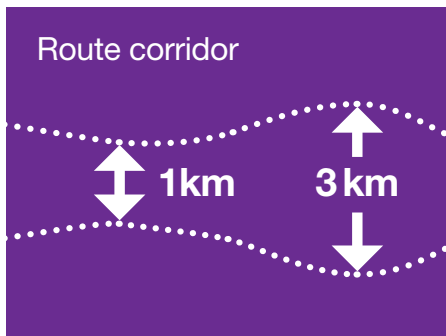
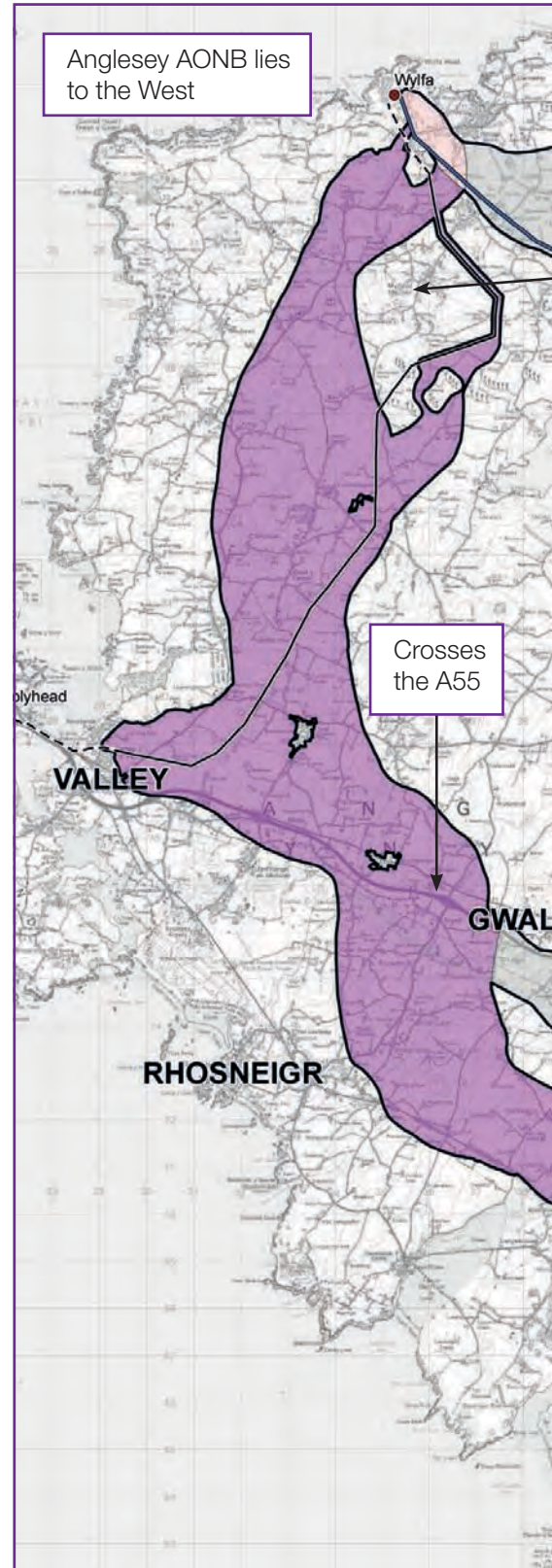
Within the corridor, there are:

- Six Site of Special Scientific Interest (SSSI)
- Seven Scheduled Monuments.

Similar to the Yellow route corridor, the Purple route corridor may also need to cross the A55 at multiple locations. This could affect the view, and the landscape would not allow us to screen a line very effectively. Much of this corridor is undeveloped land and it would have potential effects on the landscape of Malltraeth Marsh. As it's the longest route corridor, it would also require the construction of more new pylons than other routes.

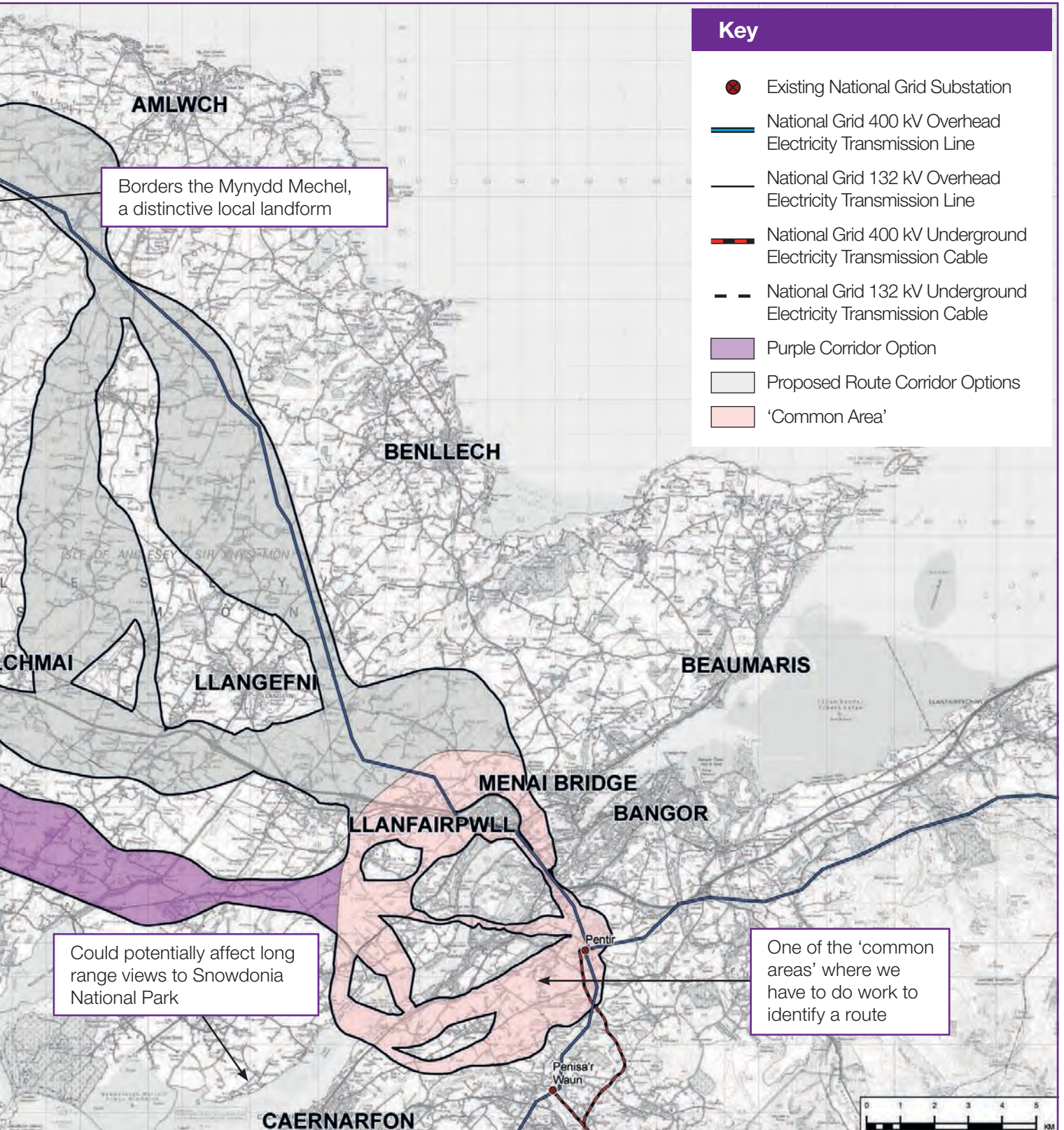
In the first stage of consultation, people told us in their feedback that they felt the Purple route would damage wildlife and sensitive landscapes. Respondents also said they were concerned that the corridor was too narrow in some areas.

Taking all of this into account, we will not be taking forward the Purple corridor option.



A route corridor is a broad swathe of land, wider in some parts and narrower in others, within which a connection could be built. We identify corridors by considering the features, including communities and environmental sites, that we would seek to avoid.







# 6. Review of route corridors

## Blue route corridor option

**The Blue corridor is approximately 28 kilometres long and gives an option to avoid running alongside the majority of the existing two overhead lines on Anglesey, through relatively sparsely populated landscape in the centre of the island.**

It leaves Wylfa in the same direction as the existing National Grid 400 kV overhead line and proposed Orange corridor, before splitting and running southwards towards RAF Mona. The corridor then passes either side of RAF Mona before turning east toward the Menai Strait. It then runs to the north of Malltraeth Marsh and along part of the A55. This corridor could have impacts on views from the A55.

There are no national landscape designations within this corridor.

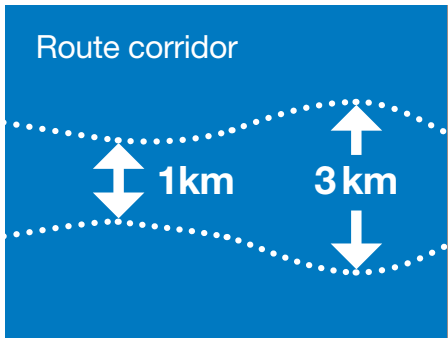
Within the corridor, there are:

- Three Sites of Special Scientific Interest (SSSI)
- Ten Scheduled Monuments
- The Anglesey Showground.

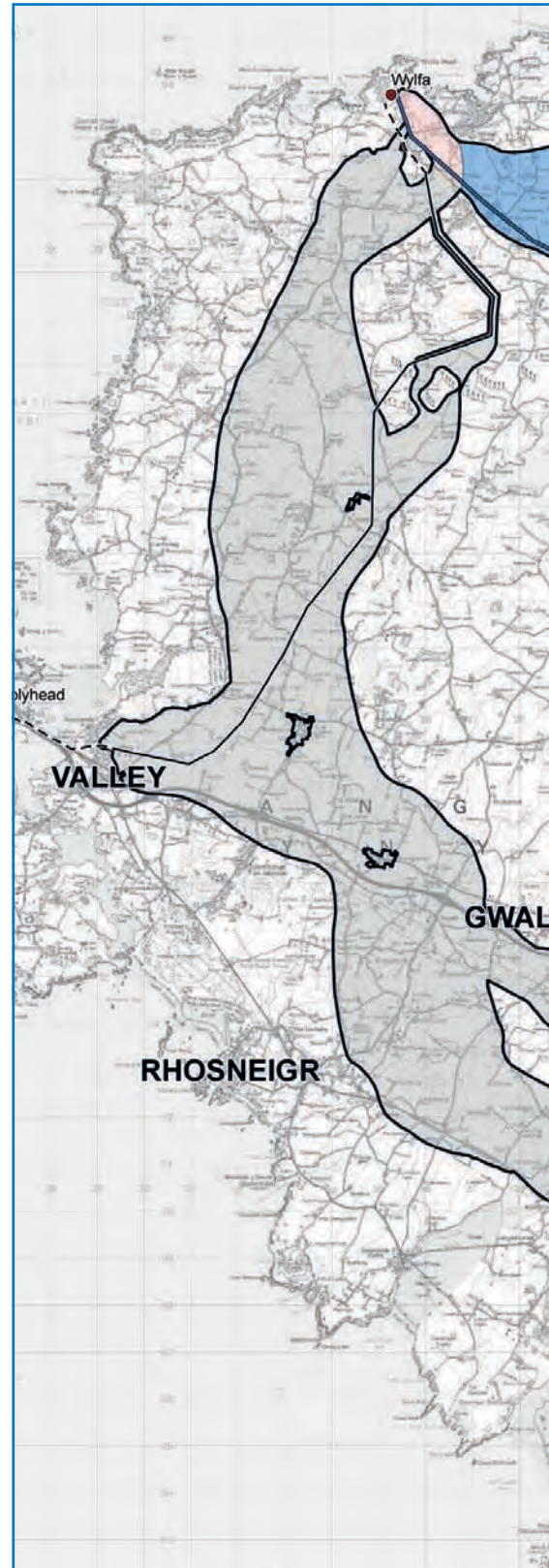
Much of the Blue corridor is within a largely undeveloped landscape and there is no other network equipment in this area.

During our consultation in 2012, people told us that we should avoid this route because it fell within the Anglesey Special Landscape Area. Respondents also said they were worried about the potential effect on holiday rental businesses as well as SSSIs. The likely Menai Strait crossing points that would result from using this corridor were also raised as a concern.

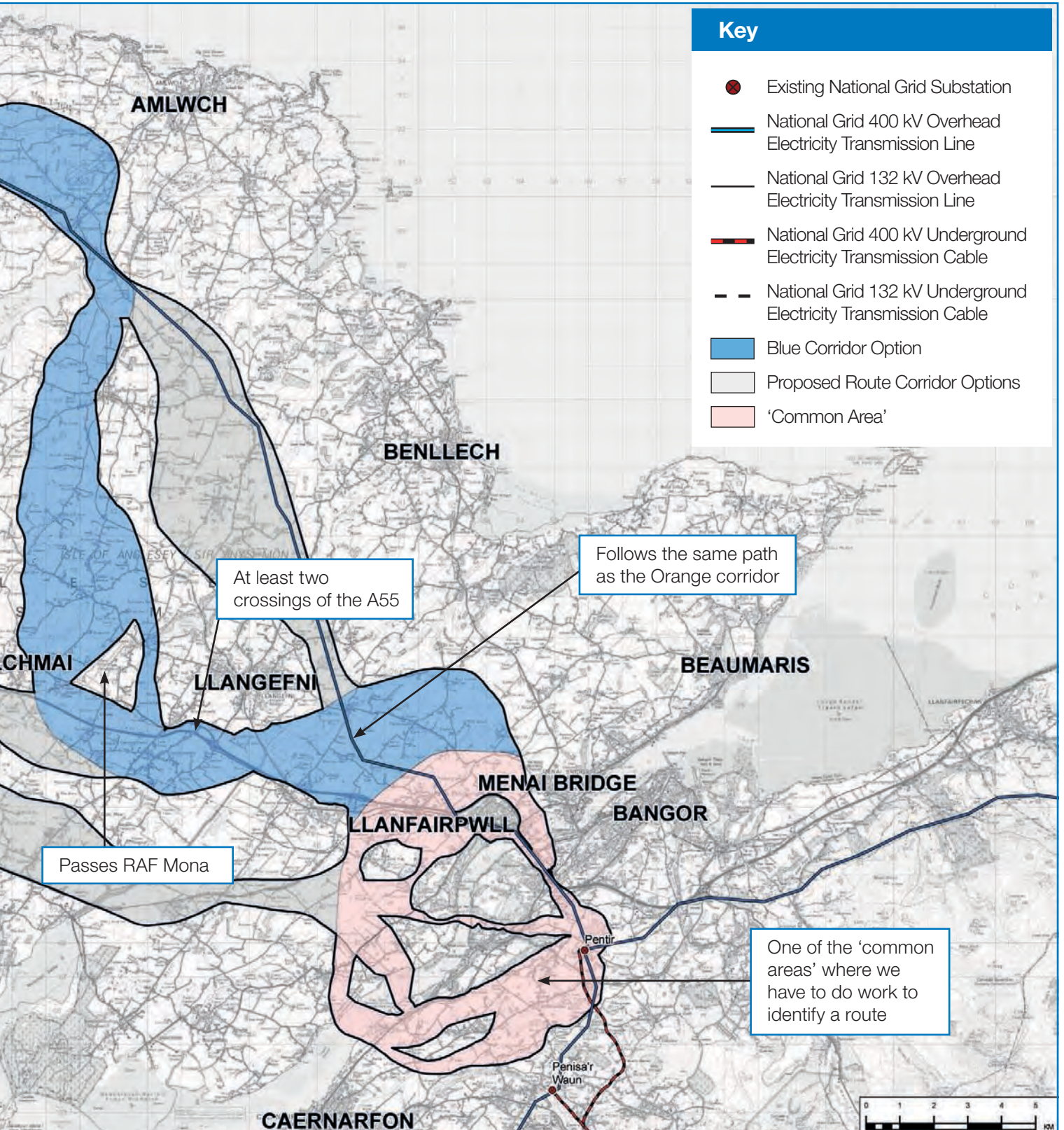
Taking all of this into account, we will not be taking forward the Blue corridor option.



A route corridor is a broad swathe of land, wider in some parts and narrower in others, within which a connection could be built. We identify corridors by considering the features, including communities and environmental sites, that we would seek to avoid.









# 6. Review of route corridors

## Orange route corridor option

**The Orange corridor is approximately 23 kilometres long and is broadly based on the route of the existing 400 kV overhead line as it runs from Wylfa power station to Pentir substation.**

This corridor is the shortest and least densely populated overall of all those identified, providing an opportunity to limit impacts on the island to where they already exist as a result of the existing overhead line. It passes near to Llangefni.

It contains the existing 400 kV line and a number of environmental designations, including a protected wetland and Special Area of Conservation (SAC).

There are no national landscape designations located within the corridor, but it does border the Anglesey AONB to the east.

Within the corridor, there are:

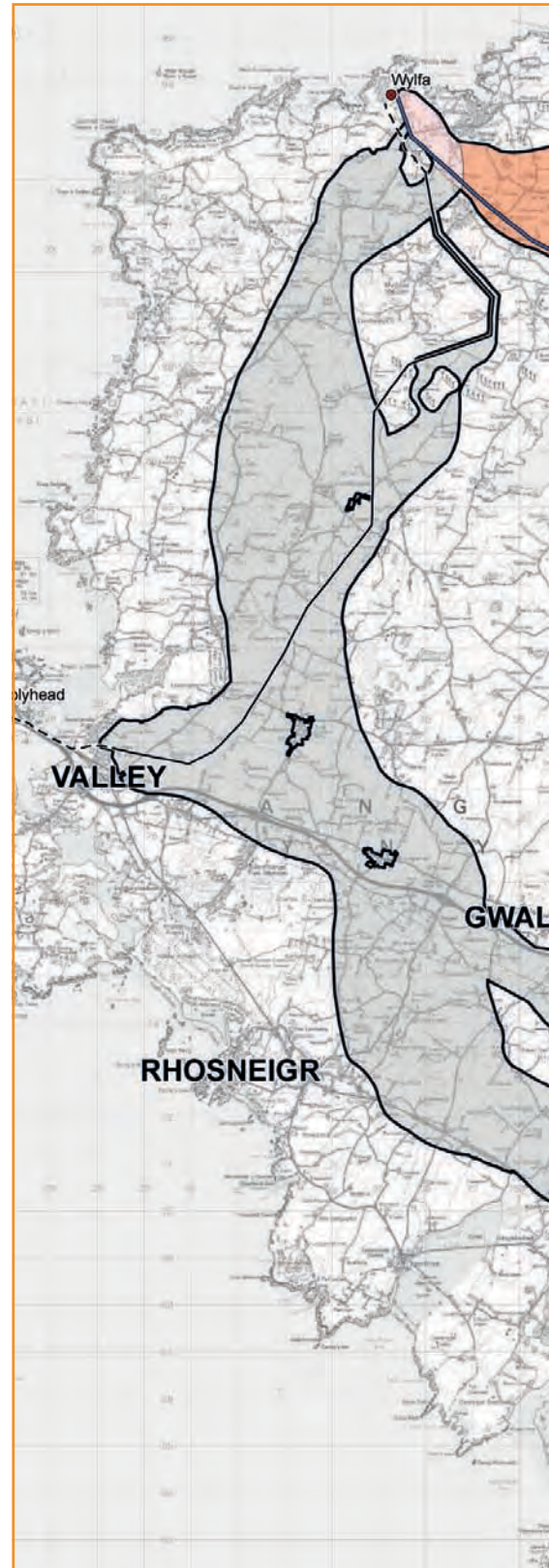
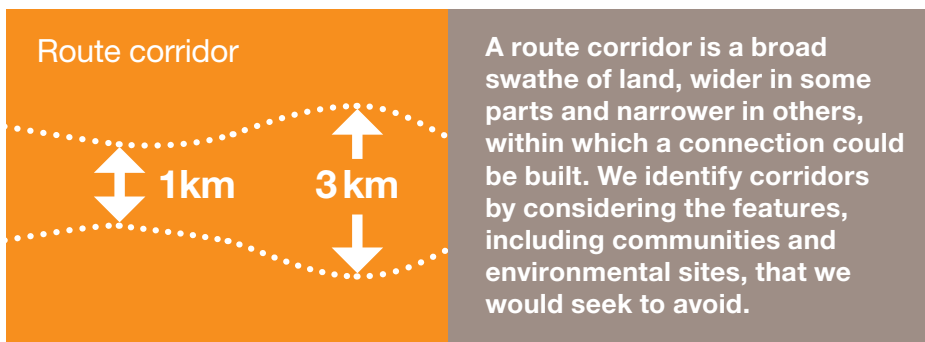
- One site designated as a wetland of international importance, Special Area of Conservation, National Nature Reserve and Site of Special Scientific Interest
- One other Site of Special Scientific Interest
- 11 Scheduled Monuments.

Of those who expressed a preference in our first stage of consultation, from the four corridor options the highest number chose the Orange corridor. People told us that they preferred this route because it was the shortest and would have the least impact on local communities. Respondents also said that they felt it was desirable to follow the path of the existing 400 kV overhead line.

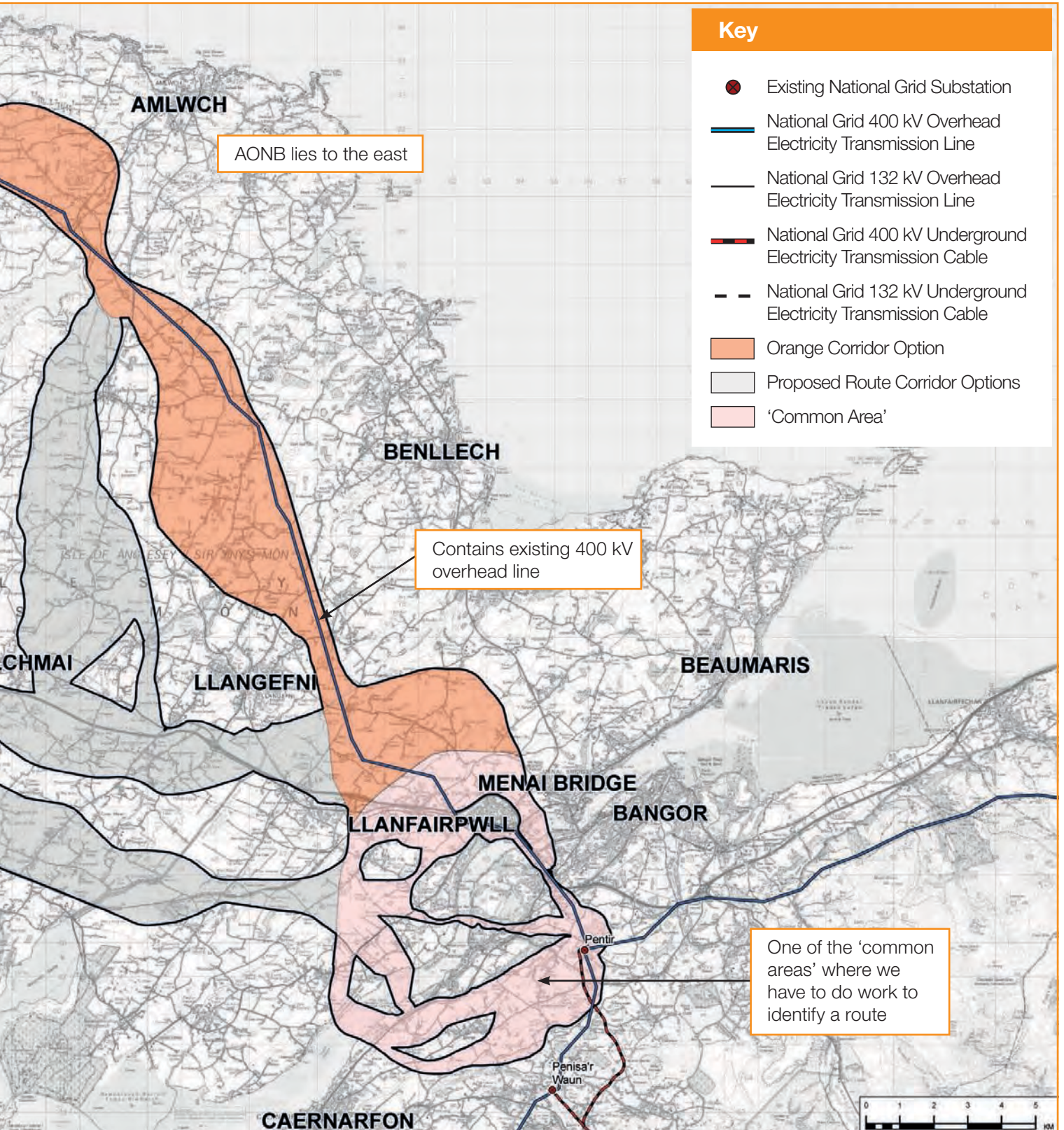
The Orange corridor would keep the new overhead line alongside the existing one. All other corridors would introduce a new line into parts of the island that do not have one at the moment.

In places the corridor narrows and our options may be limited. We will be looking very carefully along the whole route at where our works could have a significant effect and how we can minimise these.

Taking all of this into account, we propose to take forward the Orange route corridor.









# 7. How we reached our decision

## The factors we considered

Alongside feedback from local people and stakeholders, we have carried out a wide range of assessments and considered a number of important factors to develop our plans. These include:

- **Landscape:** including the character and value of the landscape and possible views to any new line
- **Cultural heritage:** such as archaeology and areas of historical significance
- **Ecology:** such as protected plant and animal species, important habitats and sites
- **Socio-economic factors:** including tourism in the area and other important activities
- **Construction:** how we would build the connection and associated infrastructure
- **Technical:** making sure the connection will operate securely
- **Cost:** making sure our proposals strike the right balance between cost and environment, in line with Ofgem's requirements to keep bills as low as possible
- **Planning rules:** national and regional planning rules. Our final proposals will need to agree with these policies.



## Our proposed route corridor

After assessing each of the route corridor options against all of these criteria, our proposal is to make a new overhead connection within the Orange corridor.

The Orange corridor is proposed for a number of reasons, including:

- It is the shortest of all the corridor options we identified
- It offers good opportunities to route a new overhead line more sensitively, using the natural contours of the landscape
- It is the least densely populated overall, avoiding many of the larger population centres on Anglesey
- The corridor follows the route of the existing overhead line between Wylfa and Pentir, minimising the visual impact of a new line on the island as a whole
- It would allow us to avoid sensitive areas such as wildlife reserves and wetlands, and would allow us to route a line away from cultural heritage assets
- It would reduce any impact on views into Snowdonia National Park, compared with other options
- It aligns with the feedback we received from members of the public and organisations.

The feedback we received told us that, of those that expressed a preference, most people felt that the Orange corridor was the most acceptable, because it was the shortest and the least populated and so would have the least impact on local communities.

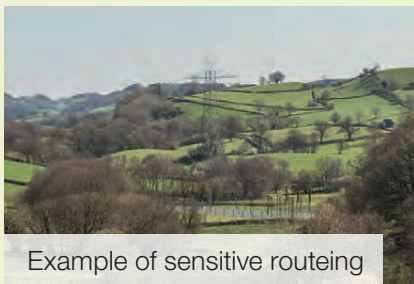
Feedback also told us that the landscape in the Orange corridor lends itself well to screening a new line from view using natural features such as existing woodlands, and that it was far enough away from aviation sites such as RAF Valley and RAF Mona.

You also told us that we should look to avoid homes, playing fields, sites of historic and cultural interest and environmentally sensitive areas if the Orange corridor is being proposed.

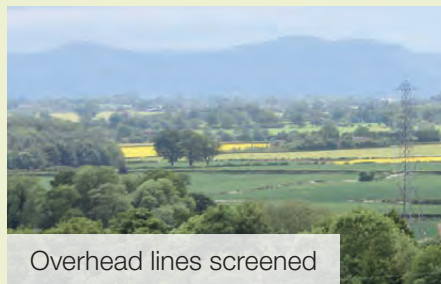
We will continue to review our decisions, so we can listen to any new information and make sure that we take the most appropriate option forward.



## Reducing the impact of our work



Example of sensitive routing



Overhead lines screened



Underground cables

**There are a number of ways that we will look carefully to reduce the impact of an overhead line on local communities, views and the landscape:**

- **Sensitive routing:** Where we propose pylons, we can use landscape features such as hills and valleys to limit how much of the overhead line can be seen from different viewpoints

- **Screening and landscaping:** We will look at where there are opportunities to plant trees and shrubs in the wider area around an overhead line to screen long-distance views of any new connection

- **Alternative pylon designs:** We will look at whether different pylon designs can help lessen the visual impact of a new connection

- **Placing new lines underground:** Where we cannot avoid a very sensitive landscape, we will consider putting sections of an overhead line underground.

## Crossing the Menai Strait

**We've looked carefully at all the different ways of crossing the Menai Strait, which many of you told us is very valued both locally and more widely. We know from feedback that many people felt that a connection here should not be made using pylons.**

As a result, we plan to bury the cables underground at the Anglesey Area of Outstanding Natural Beauty and put them on or beneath the Menai Strait. We will need to identify the appropriate points at which the overhead line should end on either side of the Strait.

Our work in the area is ongoing, but we already know that there are many issues to take into account. This includes environmental and technical challenges, as well as social factors such as tourism.

The fast flowing currents, marine life on the Menai Strait bed, the geology of the area, nearby National Trust properties and other heritage assets are important factors for further investigation.

Sealing end compounds are needed to change the overhead line to an underground one or vice versa at each side of the Menai Strait in Anglesey and Gwynedd. We need to find areas to put these which will help us decide where the line can go.

We are working with Bangor University who have the combination of local knowledge and marine expertise to help make sure that we understand the complex natural environment and technical constraints around the Menai Strait. We also want to consider the views of the many other organisations and businesses that use the Menai Strait and coastline.

# 8. What happens next

## We are now looking in much more detail at the exact route we could take.

We will also consider ways we can minimise the effects of an overhead line. This will include environmental surveys and talking to landowners, to Anglesey and Gwynedd councils and to others about where pylons and underground cables might go.

If you live or work within the Orange corridor, we understand you may have particular questions about our work, and we will make sure we keep you updated with more information as our studies progress.

We will also be carrying out more in-depth studies at the Menai Strait and within the AONB to look at how we could best put the connection underground here. We're also continuing to carry out comprehensive environmental studies to assess the potential effects of our plans on the environment, so that these can be avoided or carefully managed.

When we have completed a review of all of this work later in the year, we will consult people on a possible route(s) the line could take.

At our next consultation, we will present more information about:

- The possible route(s) the connection could take within the Orange corridor and the 'common areas' in Anglesey and Gwynedd
- How and where we propose to cross the Menai Strait and Anglesey AONB
- The possible locations of sealing end compounds either side of the Menai Strait
- The technology that we could use in different areas of the route, including the different types of pylons that could be used
- How we propose to minimise the impact of the connection
- Other issues that people think are important.



To make sure our plans are still appropriate, we will continue to check them in response to the feedback we receive from local communities, and organisations responsible for areas including heritage, the countryside and the environment.

## Project timeline

There will a number of further opportunities for you to provide your views on our plans as the project progresses, including on route options later in 2015.







“ Should National Grid contact you, it does not mean that you will definitely have equipment sited on your land. ”

## People with an interest in land

**If you are a person with an interest in land within the Orange route corridor and common areas, we may be contacting you shortly to discuss our plans and consult with you on how we can work together.**

People with an interest in land include owners, tenants, occupiers and mortgagees and anyone who exercises rights over land. This includes private rights of way, sporting rights, or rights to receive payments in respect of land.

In some places, we may ask people for access to their land so we can carry out environmental and engineering surveys to help us decide on locations for pylons, underground cables, or sealing end compounds.

Should National Grid contact you, it does not mean that you will definitely have equipment sited on your land. Much more assessment and consultation with landowners, specialist bodies and communities is needed before our final proposals are identified.



As we develop our plans we will continue to check whether we are bringing forward the right proposals, whether the extent of works needed is right, and whether we're striking the right balance between environment and cost.

# Important documents



**Need Case** (updated 2015) – explains why the North Wales Connection Project and the work National Grid is proposing to carry out are needed, and a review of this following our first consultation.

**Strategic Options Report** (updated 2015) – our examination of the technically feasible connection options.

**Stage One Consultation Feedback Report** – sets out how we consulted and summarises the representations the first time we spoke to people, the themes and issues raised and our response to these.

**These documents are available on our website or by contacting our community relations team.**

If you would like an alternative version of this document please contact us on **0800 990 3567** or go to our website: **[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)**

**There are lots of ways to contact us and find out more information:**



Visiting our project website at:  
**[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)**



Calling our freephone number:  
**0800 990 3567**. Lines are open between  
9am – 5pm Monday – Friday



Sending an email to:  
**[nationalgrid@northwalesconnection.com](mailto:nationalgrid@northwalesconnection.com)**



Writing to our freepost address at:  
**FREEPOST NATIONAL GRID  
NW CONNECTION**

FSC  
LOGO

nationalgrid

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**6.2.7**

**Appendix 7**

**January 2015 Information Booklet (Welsh)**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA



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# Prosiect Cysylltiad Gogledd Cymru

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Llyfryn Gwybodaeth



**Sicrhau ein cyflenwad ynni ar gyfer cenedlaethau'r dyfodol.**



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# 1. Crynodeb

## Rydym yn cynnig y dylid cael llinell uwch ben newydd gyda cheblau o dan Afon Menai i gysylltu gorsaf ynni Wylfa Newydd, Pŵer Niwclear Horizon, â'r rhwydwaith trydan. Rydym yn cyflwyno'r opsiwn hwn wedi adolygu ein gwaith ac ystyried yr holl sylwadau a gawsom.

Bydd ein cysylltiad newydd arfaethedig yn dilyn y llinell uwch ben bresennol, yn fras, o'r Wylfa ar Ynys Môn i'n his-orsaf ym Mhentir yng Ngwynedd, y tu mewn i'r coridor Oren ar Ynys Môn a nodwyd gennym yn ein hymgyngoriad yn 2012. Gallwch weld map o'r coridor Oren, ynghyd â'r opsiynau eraill yr edrychom arnynt, ar dudalennau 12 i 19.

Mae pobl wedi dweud wrthym fod ardal Afon Menai yn arbennig o sensitif, felly rydym wedi penderfynu rhoi'r ceblau ar wely'r Fenai neu oddi tano a defnyddio ceblau tanddaear yn Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn i leihau'r effaith ar olygfeydd yno.

Am nifer o resymau technegol ac economaidd pwysig, nid ydym yn cynnig y dylid rhoi'r cysylltiad o dan y môr. Cewch ddarllen rhagor am hyn ar dudalen 9.

Seiliwyd ein cynnig ar:

- Adolygiad o'n gwaith yng ngoleuni'r holl newidiadau i gynlluniau cynhyrchu ynni arfaethedig Gogledd Cymru
- Ystyriaethau technegol, amgylcheddol ac economaidd
- Ymateb i'r ymgynghoriad gan y cyhoedd a gan gyrff fel cynghorau Ynys Môn a Gwynedd, Cyfoeth Naturiol Cymru a llu o sefydliadau eraill
- Gwaith asesu pellach gennym ni, ac ystyriaeth o ofynion cynllunio cenedlaethol a lleol
- Y ddyletswydd sydd arnom i ddatblygu a chynnal system effeithlon, gydgysylltiedig, ddarbodus
- Ymgynghori â'r cwmnïau cynhyrchu ynni, yn cynnwys Pŵer Niwclear Horizon.

Ers ein cyfnod ymgynghori cyntaf yn 2012, bu nifer o newidiadau i'r ffynonellau ynni y bwriedir eu cysylltu yng Ngogledd Cymru (manyion ar dudalennau 10 ac 11). Mae'r ddogfen hon yn rhoi trosolwg i esbonio pam y mae angen cysylltiad newydd o hyd, a'r ffactorau niferus a ystyriwyd gennym.

### Y camau nesaf

Yn awr, rydym am ystyried yn fwy manwl o lawer lle yn union y gallai'r peilonau a'r ceblau tanddaear fynd a sut y gallwn leihau eu heffaith. Byddwn yn trafod hyn gyda pherchnogion tir, cynghorau cymuned, cynghorau sir ac eraill, cyn cynnal ymgynghoriad ehangach gyda'r cyhoedd yn nes ymlaen yn 2015.

Byddwn yn cynnal astudiaethau manwl hefyd i weld lle a sut y gallwch groesi Afon Menai ac AHNE Ynys Môn gan ddefnyddio ceblau tanddaear.

Bydd eich ymateb chi i'n hymgyngoriad yn bwysig iawn i ni. Dyma fydd eich cyfle i roi gwybod i ni a oes gennych ryw sylwadau am ein cynigion ni ac a oes rhywbeth arall y dylem ei ystyried cyn i ni baratoi'r cynlluniau terfynol.

Os hoffech fersiwn wahanol o'r ddogfen hon, gallwch gysylltu â ni ar **0800 990 3567** neu fynd i'n gwefan: [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)



## 2. Cyflwyniad



“Gellir cymharu'r rhwydwaith trawsyrru trydan i draffyrdd: rhwydwaith eang yn cysylltu dinasoedd a threfi mawr, ac yna gwmnïau dosbarthu lleol yn gofalu am y ffyrdd llai sy'n dod â thrydan i'n cartrefi a'n busnesau.”

### National Grid – pwy ydyn ni a beth rydyn ni'n ei wneud

**Ein gwaith yw cysylltu pobl â'r ynni y maent yn ei ddefnyddio, a hynny'n ddiogel. Er nad ydym ni'n cynhyrchu trydan, mae i ni ran ganolog yn un o'r heriau mwyaf sy'n wynebu ein cymdeithas: cyflenwi ynni glân i gynnal ein byd am flynyddoedd maith i ddod.**

Ni sy'n gweithredu'r systemau sy'n cyflenwi trydan a nwy ledled Prydain a ni biau'r rhwydwaith yng Nghymru a Lloegr. Mae hynny'n golygu bod gennym waith hollbwysig sy'n ganolog i'r system ynni. Ni sy'n cysylltu popeth.

Mae angen i ni ganfod ffyrdd o gysylltu'r ynni carbon isel newydd a gynhyrchir er mwyn ateb anghenion y Deyrnas Unedig am ynni yn y dyfodol a'i thargedau o ran newid yn yr hinsawdd. Mae angen cysylltu'r

ffynonellau ynni newydd hyn i gyd â'r rhwydwaith trawsyrru fel y gellir cludo'r trydan a gynhyrchir ganddynt i'r man lle caiff ei ddefnyddio. Ein gwaith ni yw cynnig ble a sut mae cysylltiad newydd yn mynd yn ôl i'r grid presennol o ble mae datblygwyr eisïau adeiladu gorsaf bŵer.

**Y newid yn y cyfuniad o bŵer a gynhyrchir yn y Deyrnas Unedig**

Yng Nghymru a Lloegr, bydd llawer o'r prosiectau cynhyrchu trydan newydd yn cael eu lleoli ar y glannau neu yn y môr mewn mannau nad yw rhwydwaith National Grid yn cyrraedd iddynt ar hyn o bryd, neu lle gall fod angen uwchraddio neu atgyfnerthu'r rhwydwaith er mwyn cludo rhagor o bŵer.

Mae penderfynu lle a sut i godi llinellau trydan foltedd uchel newydd yn benderfyniad cymhleth. Mae'r rhan fwyaf o'r rhwydwaith presennol ar ffurf llinellau uwch ben. Llinellau uwch ben yw'r ffordd fwyaf darbodus o gludo trydan yma yn y Deyrnas Unedig a ledled y byd, ac felly nhw sy'n effeithio leiaf ar ein biliau. Mae ein holl gynlluniau wedi'u datblygu gan dalu sylw i nifer o ffactorau, yn cynnwys yr amgylchedd, ymateb pobl, y gofynion technegol a'r gost. Ceisiwn gydbwyso'r effeithiau ar bob un ohonynt.

Cewch wybod mwy am yr her ynni a sut y mae National Grid yn helpu i ganfod atebion i rai o'r heriau sy'n ein hwynebu yn [www.nationalgridconnecting.com](http://www.nationalgridconnecting.com)

### Ein dyletswyddau a'n rhwymedigaethau

**Rydym yn cael ein rheoleiddio gan Ofgem, sy'n ceisio sicrhau bod cwsmeriaid yn cael gwerth am arian. Mae yna hefyd rai pethau y mae'n ofynnol i ni eu gwneud o dan ddeddfwriaeth. O dan Ddeddf Trydan 1989, mae'n ofynnol i ni ddatblygu a chynnal system drawsyrru sy'n effeithlon, yn gydgysylltiedig a darbodus, a hwyluso cystadleuaeth ym maes cynhyrchu a chyflenwi trydan. Mae angen i ni ystyried yn ofalus effeithiau amgylcheddol ein gwaith a chost ein prosiectau gan mai'r cwsmeriaid sy'n talu am hyn yn y pen draw, yn eu biliau ynni.**

Gall cyflawni ein holl ddyletswyddau fod yn fater cymhleth. Mae'n rhaid trin pob prosiect yn unigol er mwyn sicrhau cydbwysedd priodol rhwng yr effeithiau cymdeithasol, economaidd ac amgylcheddol posibl.

Credwn mai'r ffordd orau o sicrhau'r cydbwysedd hwn yw trwy:

- Ymgynghori'n eang ac yn effeithiol o ddechrau'r broses o ddatblygu'r prosiect
- Bod yn agored â gwybodaeth ac yn dryloyw â'n penderfyniadau
- Datblygu cynlluniau sy'n cyflenwi beth y mae ar gymdeithas ei angen gennym.



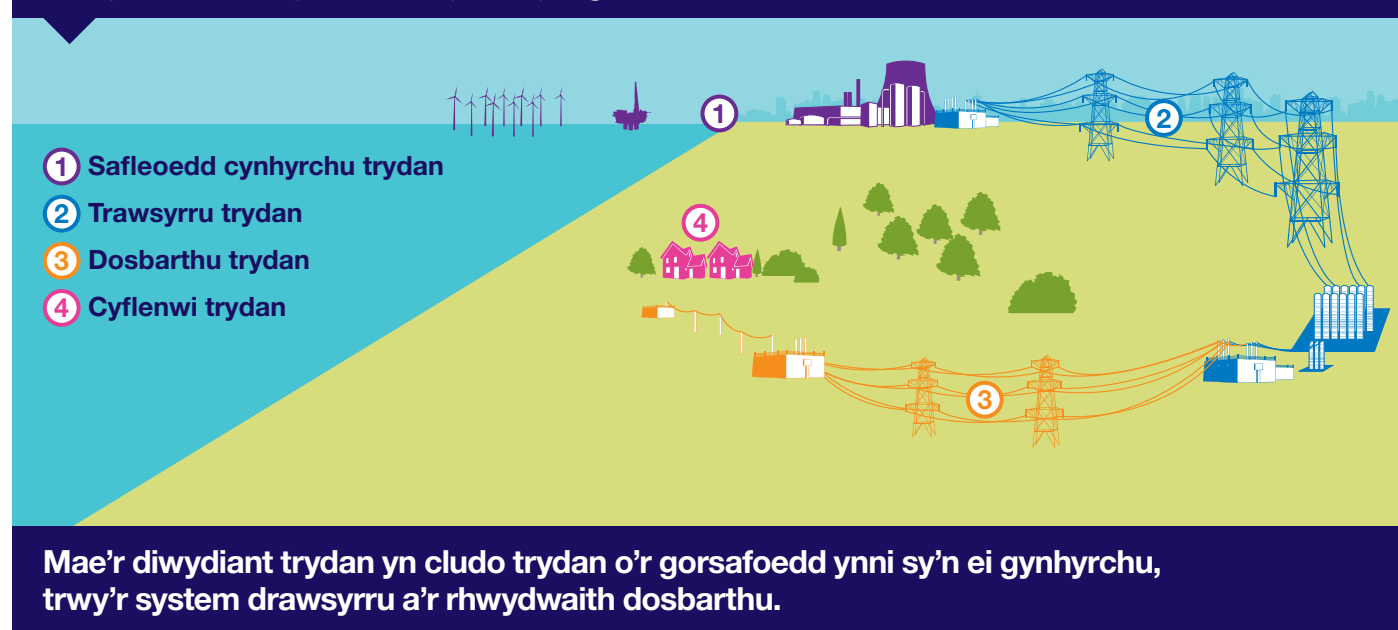
**Pwy sy'n penderfynu a fydd ein cynllun yn mynd ymlaen?**

Yr Ysgrifennydd Gwladol dros Ynni a Newid Hinsawdd fydd yn penderfynu a ddylai ein cynllun fynd yn ei flaen yn y pen draw. Bydd ef neu hi yn penderfynu a ydym wedi sicrhau'r cydbwysedd priodol cyn gwneud penderfyniad.

**Pwy sy'n penderfynu lle mae cysylltiadau ar gyfer prosiectau ynni newydd yn cael eu hadeiladu?**

Mae rhwymedigaeth statudol ar National Grid i gysylltu cyfleusterau cynhyrchu ynni newydd â'r rhwydwaith trydan. Gall unrhyw un ofyn i ni gysylltu eu prosiect a rhaid i ni ymateb gyda chynnig i gysylltu.

### Sut y mae'r rhwydwaith trydan yn gweithio



Mae'r prosiect hwn yn Brosiect Seilwaith Cenedlaethol ei Arwyddocâd (NSIP) gan ei fod yn cynnwys datblygu cysylltiad trawsyrru trydan sy'n gweithredu ar fwy na 132 kV. Mae hyn yn golygu ei bod yn rhaid i ni gyflwyno cais i'r Arolygiaeth Gynllunio am yr hyn a elwir yn 'ganiatâd datblygu'. Yr Ysgrifennydd Gwladol dros Ynni a Newid Hinsawdd fydd yn penderfynu'n derfynol a ddylid caniatáu ynteu wrthod caniatâd.

### **i** Rhagor o wybodaeth

Mae taflenni gwybodaeth o'r enw **National Grid and the Electricity Industry a The Energy Challenge** ar gael o wefan y Prosiect neu gallwch gysylltu â ni i ofyn amdanynt (manyllion cysylltu ar y cefn).



# 3. Crynodeb o gam cyntaf ein hymgyngoriad



## Cam cyntaf yr ymgynghoriad yn 2012



### Rhwng mis Hydref a mis Rhagfyr 2012, cynhaliwyd cam cyntaf ein hymgyngoriad ynghylch cysylltu prosiectau ynni carbon isel arfaethedig â'r rhwydwaith trydan yng Ngogledd Cymru.

Daeth cyfanswm o 736 o bobl i 35 o arddangosfeydd a gynhaliwyd gennym ledled Ynys Môn a Gwynedd. Cawsom 1,549 darn o ymateb yn ystod y cam cyntaf hwn o'n hymgyngoriad, yn cynnwys 1,057 o gardiau post ymgyrchu ac ymatebion gan 38 o sefydliadau oedd yn rhanddeiliaid yn y mater.

Buom yn edrych ar sawl ffordd bosibl o wneud cysylltiad, yn cynnwys ceblau yn y môr, ceblau ar y tir a chyfuniad o'r ddau (manylion ar dudalen 8). Yn ogystal, buom yn ymgynghori â phobl ar ein cynllun ar gyfer cysylltiad dros y tir a oedd yn cynnwys tri phecyn allweddol o waith:

- Cysylltiad ychwanegol uwch ben, rhwng yr Wylfa ar Ynys Môn a Phentir yng Ngwynedd, i gysylltu prosiectau cynhyrchu ynni carbon isel newydd yn yr Wylfa a Môr Iwerddon â'n rhwydwaith presennol yn y gogledd.

- Is-orsaf newydd yng Ngorllewin Gwynedd i gynnal cyflenwadau dibynadwy i'r ardal
- Cysylltiad tanddaear ychwanegol yn Aber Afon Glaslyn, i gryfhau'r rhwydwaith fel y gall ymdopi â'r cynnydd yn yr ynni i'w gludo yn y rhwydwaith.

Ar y pryd, seiliwyd hyn ar ein hangen i gysylltu atomfa arfaethedig Horizon yn yr Wylfa, a fyddai'n cynhyrchu hyd at 3.6 gigawat (GW), ynghyd â 2 GW o fferm wynt arfaethedig Celtic Array, Rhiannon, ym Môr Iwerddon. Roedd y ddau brosiect hyn wedi contractio gyda ni i gysylltu ar Ynys Môn.

Ers 2012, bu newidiadau sylweddol yn y cynlluniau cynhyrchu ynni y bwriedir eu cynnal yng ngogledd Cymru (manylion ar dudalen 10). Felly, bu'n rhaid i ni adolygu ein gwaith er mwyn sicrhau ein bod yn dewis yr opsiwn mwyaf addas.



**i Rhagor o wybodaeth**

Ym mis Mehefin 2014, fe gyhoeddwyd ein Stage One Consultation Feedback Report, sy'n rhoi crynodeb o'r holl ymateb a gawsom ynghyd â'n hymatebion ni i'r holl faterion a themâu a godwyd. Fe welwch gopi ar wefan y prosiect – [www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)

Mae ein system drawsyrro yng Nghymru a Lloegr yn cynnwys tua:

**22,000 o beilonau** (neu dyrau)\*

**7,200 km (4,470m) o linellau uwch ben\***

**1,400km (870m) o gebl tanddaear\***

\*Ffigurau'n gywir ar 31 Mawrth 2014

## Crynodeb o'r ymateb a gawsom

**Roedd yn glir o'r ymateb a gawsom fod llawer o bobl yn teimlo y dylem roi'r cysylltiad yn y môr. Gofynnodd pobl i ni ystyried hyn oherwydd teimlwyd mai dyma fyddai'n cael yr effaith weledol leiaf a'r effaith ehangach, ac y byddai'n well i'r amgylchedd.**



Dywedodd llawer o bobl a sefydliadau wrthym fod Afon Menai ac Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn yn llefydd arbennig iawn ac na ddylem roi llinell uwch ben yno. O'r rhai a fynegodd farn am y pedwar opsiwn a gyflwynwyd gennym ar gyfer y coridor llwybr – Melyn, Piws, Glas



ac Oren – roedd y rhan fwyaf o bobl yn ffafrio'r coridor Oren, sy'n dilyn y llinell bresennol yn fras trwy ganol Ynys Môn.

O'r pum opsiwn a gyflwynwyd ar gyfer croesi Afon Menai, - A, B, C, D ac E – roedd y nifer fwyaf yn teimlo mai Opsiwn B, sy'n rhedeg ochr yn ochr â'r llinell bresennol sy'n cydreddeg yn agos â Phont Britannia, oedd y mwyaf addas.

Cewch ddarllen mwy am yr holl ddewisiadau ar gyfer coridorau llwybrau ar dudalennau 12 i 19.



**Beth yw Gigawat (GW)?**

Uned ar gyfer mesur trydan yw wat. Mae tegell arferol yn defnyddio hyd at 3,000 wat (3 kW). Mae un gigawat yn cyfateb i un biliwn wat.

**1 gigawat = 1,000,000,000 wat**

Byddai angen 1 GW o drydan pe bai tua 400,000 o degellau'n cael eu troi ymlaen ar yr un pryd.



# 4. Ein hopsiynau strategol yn 2012



**Yn 2012, buom yn ystyried sut a lle y gellid cysylltu'r trydan yr oedd Horizon a Celtic Array yn bwriadu ei gynhyrchu â'r rhwydwaith. Buom yn ystyried rhoi'r cysylltiad o dan y môr, dros y tir a chyfuniadau o'r ddau. Buom yn edrych hefyd ar gost y gwahanol opsiynau a'u heffeithiau posibl.**

O dan y môr S

**O dan y môr:** Dau opsiwn ar gyfer cysylltu o dan y môr. Tri chebl rhwng yr Wylfa a Glannau Dyfrdwy, neu ddau gebl rhwng yr Wylfa a Glannau Dyfrdwy ac un rhwng yr Wylfa a Phenfro.

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Dan y môr/Dros y tir S WG G

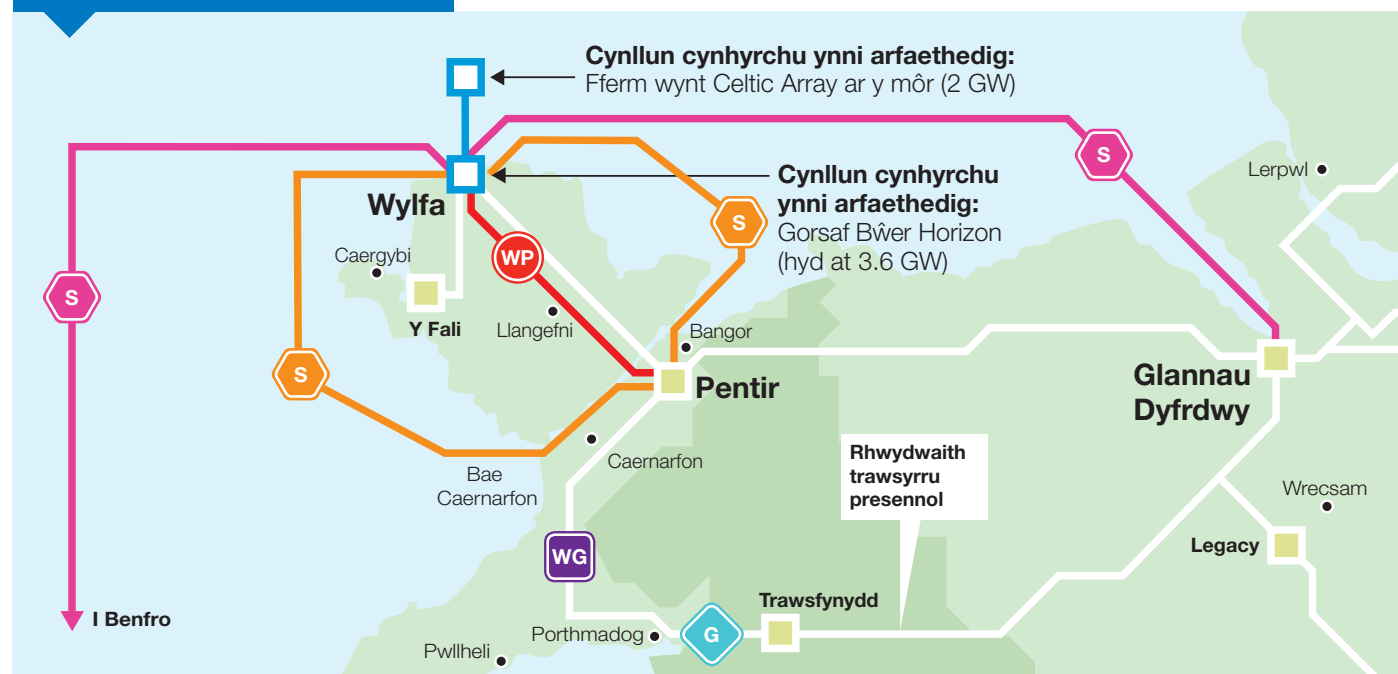
**Dan y môr/Dros y tir:** Cysylltiad newydd o dan y môr o gwmpas naill ai arfordir gorllewinol neu arfordir dwyreiniol Ynys Môn rhwng yr Wylfa a Phenfro. Byddai angen gwaith arall hefyd, yn cynnwys cysylltiad tanddaearol ychwanegol i gryfhau'r rhwydwaith yn Aber Afon Glaslyn ac is-orsaf newydd yng Ngorllewin Gwynedd. Gwaith ychwanegol ar y system bresennol.

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Dros y tir WP WG G

**Uwch ben / o dan y ddaear rhwng yr Wylfa, Pentir a Thrawsfynydd:** Cysylltiad ychwanegol, naill ai uwch ben neu o dan y ddaear, rhwng yr Wylfa a Phenfro. Cysylltiad tanddaearol ychwanegol i gryfhau'r rhwydwaith yn Aber Afon Glaslyn ac is-orsaf newydd yng Ngorllewin Gwynedd, a gwaith ychwanegol ar y system bresennol. O'r holl opsiynau hyn, dyma yr oeddem yn ei ffafrio yn 2012.

Mae'r diagram isod yn nodi'r holl wahanol opsiynau y gwnaethom eu hasesu yn 2012 ar gyfer y cysylltiad



## Sut y gwnaethom ni asesu'r opsiynau tanfor

**Gofynnodd y rhan fwyaf o'r bobl a ymatebodd i'n hymgyngoriad yn 2012 i ni roi'r cysylltiad yn y môr, yn bennaf oherwydd pryderon am effaith weledol llinell uwch ben. Ers hynny, bu nifer o newidiadau i'r cynlluniau cynhyrchu ynni yn ardal Gogledd Cymru (gweler tudalennau 10 ac 11) ac rydym wedi adolygu'r holl opsiynau eto, yn cynnwys yr opsiwn tanfor.**



Gorsaf Drawsnewid HVDC

Rydym yn deall pam yr hoffai pobl i ni ddefnyddio ceblau tanfor ac rydym wedi edrych yn ofalus iawn i weld beth y byddai hyn yn ei olygu.

Rydym hefyd wedi edrych ar opsiwn a fyddai'n golygu rhoi'r cysylltiad yn rhannol dros y ddaear ac yn rhannol o dan y môr oherwydd roedd rhai pobl wedi gofyn i ni ystyried hyn yn 2012.

Rydym yn cydnabod manteision cysylltiad tanfor yn lleihau llawer o effaith weledol y cysylltiad. Fodd bynnag, dim ond un o'r ystyriaethau y mae'n rhaid i ni dalu sylw iddynt yw hyn.

Mae yna broblemau technegol a fyddai'n golygu bod gosod y cysylltiad i gyd o dan y môr yn her. Nid oes yr un atomfa yn y byd yn cael ei chysylltu â chebl tanfor foltedd uchel cerrynt uniongyrchol (HVDC) yn unig a, chyn gwneud hynny, byddai'n rhaid i awdurdodau diogelwch niwclear gynnal llawer o archwiliadau.

Yn ogystal, pe bai nam yn un o'r ceblau tanfor neu ei system weithredu, mae'n bosib na fyddai modd ei ddefnyddio am hyd at chwe mis tra byddai'n cael ei drwsio.

Nes y byddai'r llinell yn gweithio eto, ni fyddem yn gallu cymryd yr holl bŵer a gynhyrchwyd o'r orsaf niwclear i'r grid.

Mae ceblau HVDC wedi'u cynllunio i gario pŵer dros bellter hir iawn ac mae angen gorsafoedd trawsnewid mawr a chostus iawn ar naill ben a'r llall i'r ddau gebl. Mae hyn yn gwneud yr holl opsiynau tanfor a ystyriwyd gennym gannoedd o filiynau o bunnoedd yn fwy costus na'r cynllun yr ydym yn ei ffafrio. Mae hon yn ystyriaeth bwysig gan fod y gost yn cael ei phasio ymlaen i bawb ohonom ni trwy ein biliau ynni.

Mae'r gorsafoedd trawsnewid yn fawr iawn – tua maint warws DIY – a byddai angen i ni ganfod safle addas ar gyfer un o'r rhain ar y naill ben a'r llall i bob chebl. Byddai

hynny'n golygu canfod lle ar gyfer dwy ohonynt ar Ynys Môn. Ychydig o le sydd ar safle Wylfa Newydd i roi'r rhain. Er mwyn eu hadeiladu yn rhywle arall, byddai angen cysylltiad newydd rhwng y ddau safle ynghyd â chysylltiad i'r arfordir.

Y dewis o ddefnyddio ceblau AC (cerrynt eiddol) tanfor o gwmpas arfordir Môn fyddai'r mwyaf costus o'r holl ddewisiadau a ystyriwyd gennym.

Am y rhesymau hynny, nid ydym yn cynnig y dylid cael cysylltiad tanfor. Ceir rhagor o fanylion yn ein Strategic Options Report.



# 5. Diweddariad ar gynhyrchu ynni yng Ngogledd Cymru a'n gwaith



## Beth sydd wedi newid ers yr ymgynghoriad?

Ers i ni lunio ein dewisiadau cychwynnol yn 2012, bu nifer o newidiadau i'r cynlluniau ar gyfer cynhyrchu ynni yn ardal Gogledd Cymru. Ceir esboniad o'r rhain isod.

Yn wreiddiol, roedd angen cysylltu 5.6GW o ynni yn ardal Gogledd Cymru yn gyffredinol. Roedd hyn yn cynnwys cysylltu:

- 3.6 GW o atomfa Wylfa Newydd, Pŵer Niwclear Horizon yn 2020.
- 2 GW o fferm wynt Celtic Array yn y môr yn 2020.

Ers hynny rydym wedi gweld nifer o newidiadau i beth sydd angen i ni gysylltu a phryd:

- Mae dau brosiect ffermydd gwynt Gwyddelig, Greenwire a Codling Park, wedi gofyn am gael cysylltu â'r rhwydwaith yn ein his-orsaf ym Mhentir, Gwynedd yn 2018.
- Rhoddodd Celtic Array y gorau i'w brosiect ar gyfer Fferm Wynt 2 GW Rhiannon yn y môr. Mae hyn yn golygu nad oes angen i ni adeiladu cysylltiad lleol â'n llinell bresennol yn Rhos-goch, Ynys Môn.
- Mae Pŵer Niwclear Horizon yn bwriadu cynhyrchu llai o ynni, sef dim ond 2.8 GW. Bydd yr adweithydd cyntaf yn dechrau cynhyrchu yn 2024 a'r ail yn 2025.

Mae hyn yn golygu mai 4.8 GW yw cyfanswm yr ynni y bydd angen i ni ei gysylltu â'n rhwydwaith yng Ngogledd Cymru. Felly fe edrychom ni eto ar yr anghenion, gan gymharu'r dewisiadau yn y môr ac ar y tir. Rydym wedi adolygu ein gwaith yn erbyn nifer o wahanol ffactorau ac rydym yn hyderus mai'r cynllun a gynigir gennym ni yw'r mwyaf addas o hyd.

Ym Mehefin 2014, fe rannom y gwaith hwn yn ddau brosiect gyda gwahanol amserlenni:

- Un prosiect i gysylltu Wylfa Newydd yng nghanol y 2020au.
- Un prosiect i gysylltu'r ffermydd gwynt Gwyddelig yn 2018. Efallai y bydd angen i ni gryfhau'r cysylltiad presennol rhwng Phentir a Thrawsfynydd, yn cynnwys ceblau tanddaear newydd yn Aber Afon Glaslyn ac is-orsaf newydd yn ardal Bryncir.

Rydym wedi edrych ar beth mae'r holl newidiadau yn golygu, ac mae'n dal angen cysylltiad newydd o'r Wylfa ynghyd â'r llinell bresennol i gysylltu Wylfa Newydd. Mae'r Strategic Options Report sydd wedi'i ddiweddarau yn nodi ffyrdd posibl o wneud hyn.

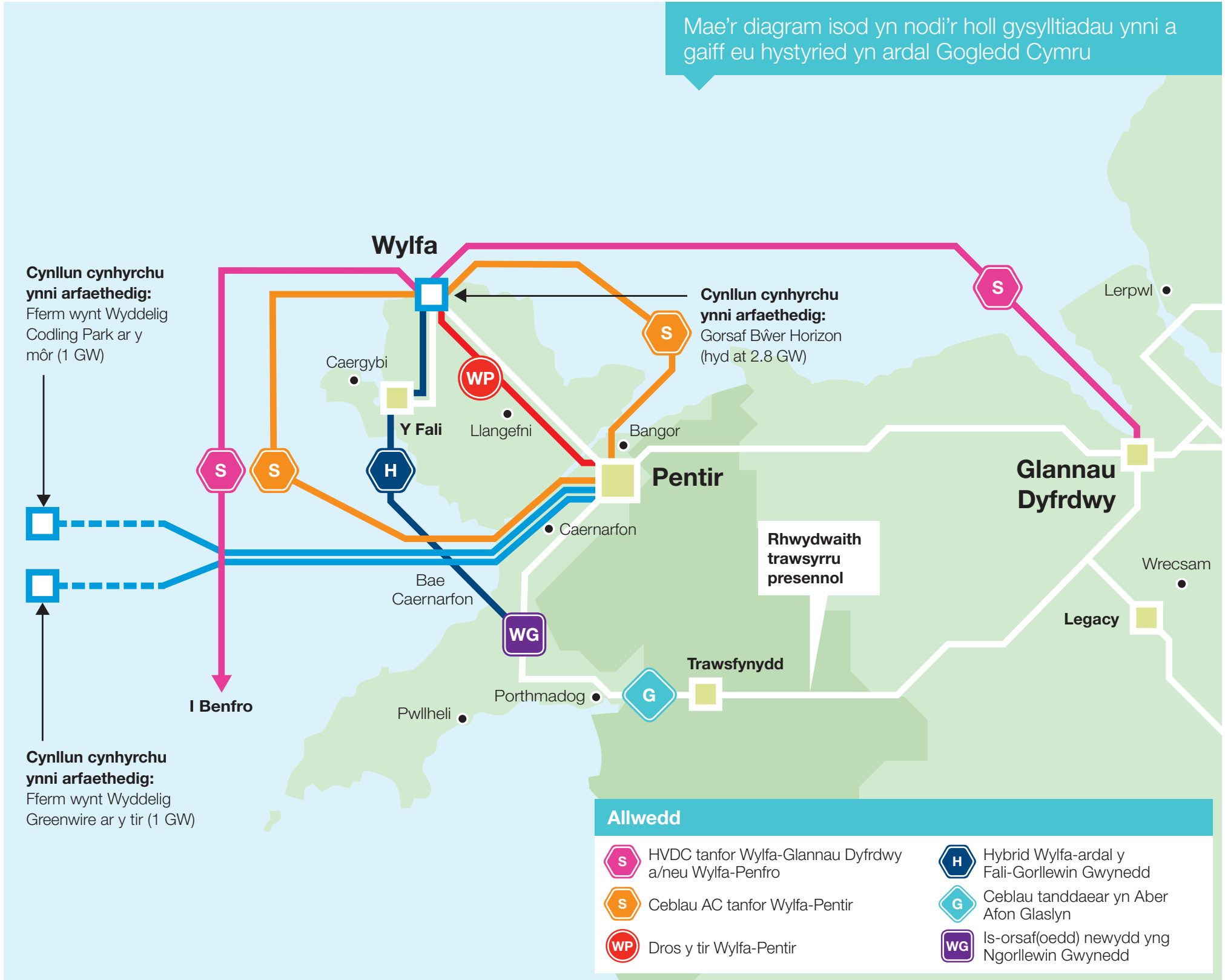
Gofynnodd rhai pobl i ni edrych ar opsiwn hybrid mewn ymateb i'n hymgyngoriad, gan ganolbwyntio'n bennaf ar gyfuniad o gysylltiad uwch ben o'r Wylfa i ardal y Fali, ac yna gebl yn y môr oddi yma i is-orsaf newydd mewn man yng Ngorllewin Gwynedd. Mae hwn yn opsiwn newydd sy'n cael ei asesu yn ein Strategic Options Report diwygiedig.

Wedi ystyried yr opsiwn awgrymedig hwn, nid ydym o'r farn y byddai'r manteision amgylcheddol a gynigir yn cyfiawnhau'r gost a fyddai'n sylweddol uwch.

Ar ôl cynnal adolygiad gofalus o'r holl opsiynau ar gyfer cysylltu'r atomfa newydd, rydym yn cynnig y dylid cael cysylltiad newydd dros y tir rhwng yr Wylfa a Phentir, gyda cheblau tanddaear yn yr AHNE ac Afon Menai.

Ar gyfer y cynnig hwn, fe asesom hefyd bob un o'r coridorau llwybrau a nodwyd gennym yng ngham cyntaf ein hymgyngoriad, gan asesu pob un o'r rhain yn erbyn nifer fawr o feini prawf (gweler tudalennau 12-20).

Mae'r diagram isod yn nodi'r holl gysylltiadau ynni a gaiff eu hystyried yn ardal Gogledd Cymru





# 6. Adolygiad o'r coridorau llwybrau



## Opswn y coridor llwybr Melyn

**Mae'r coridor Melyn tua 29km o hyd ac mae'n golygu creu llwybr yng ngorllewin yr ynys.**

Mae'n gadael yr Wylfa tua'r de, gan adlewyrchu cyfeiriad y llinell uwch ben 132 kV bresennol a'r A5025 sy'n rhedeg ar hyd gorllewin yr ynys i lawr i'r ardal ger y Fali a'r A55 i raddau helaeth. Yno, mae'r coridor yn troi tua'r dwyrain ac yn dilyn llinell yr A55 a'r A5 yn fras hyd at Afon Menai.

Mae'r coridor yn pasio, ond nid yw'n cynnwys, aneddiadau Bodedern, Bryngwran a Llanddeusant. Nid oes dynodiadau tirwedd cenedlaethol yn y coridor hwn ond mae'n ffinio ar Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn i'r gorllewin.

Within the Yellow corridor, there are:

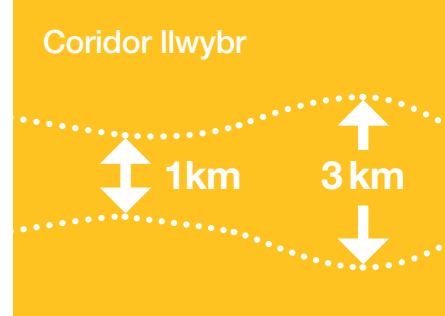
- Pum Safle o Ddiddordeb Gwyddonol Arbennig
- 11 Heneb Gofrestredig.

Byddai angen i'r coridor llwybr Melyn groesi'r A55 mewn sawl man a gallai effeithio ar y golygfeydd pell tuag at Barc Cenedlaethol Eryri. Oherwydd y llwybr y byddai angen i'r llinell newydd o beilonau ei gymryd a thirwedd y coridor, byddai llai o gyfleoedd ar gyfer sgrinio naturiol. Gallen gael gwared ar rywffaint o'r llinell peilonau 132 kV presennol.

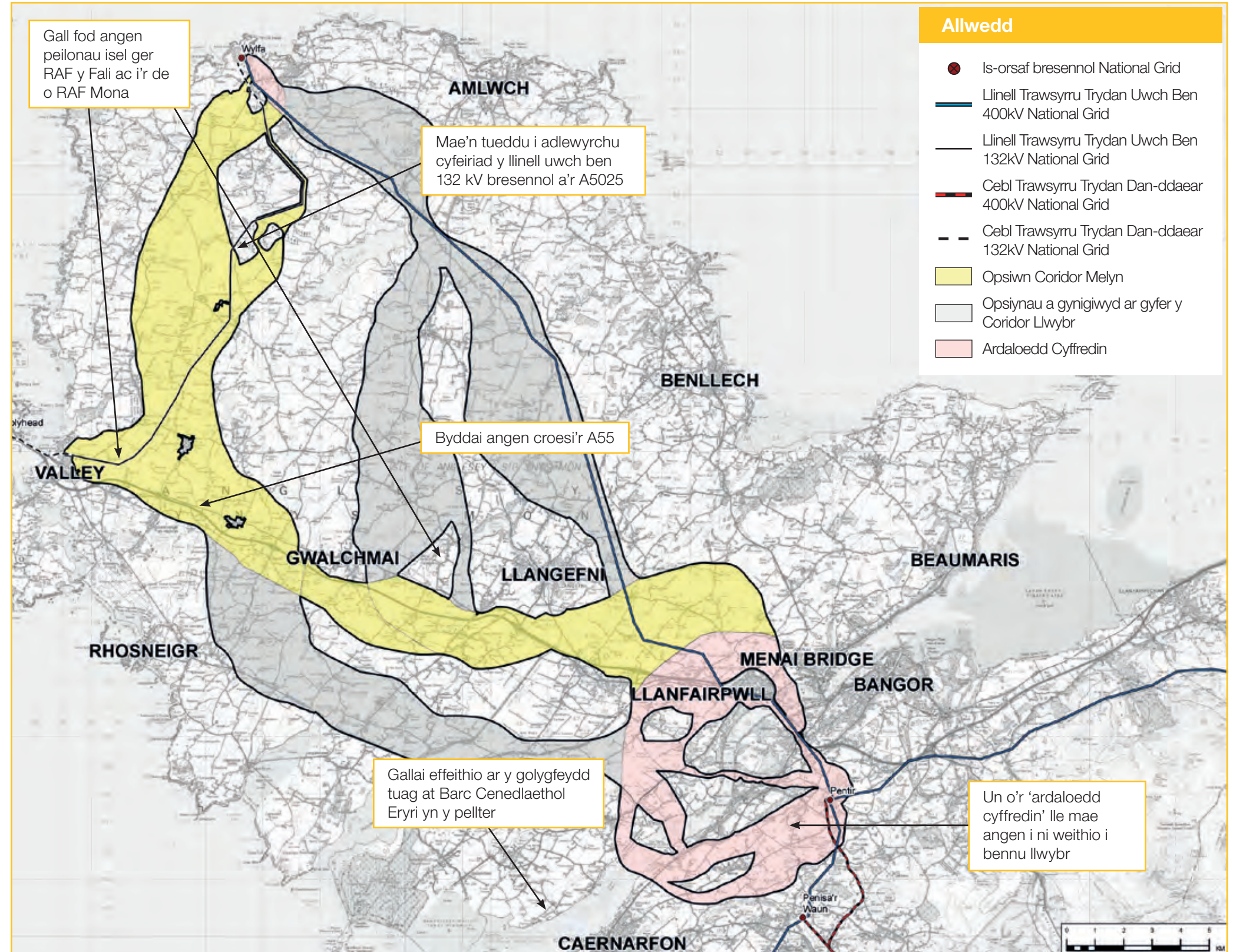
Yng ngham cyntaf yr ymgynghoriad, dywedodd pobl wrthym eu bod yn teimlo y byddai'r llwybr hwn yn amharu ar y golygfeydd tuag at yr AHNE ac ohono, Llwybr Arfordir Môn a'r Rhwydwaith Beicio Cenedlaethol. Dywedodd pobl wrthym hefyd eu bod yn poeni am gyfyngiadau posibl ar weithgareddau hedfan yn RAF Mona ac RAF y Fali.

Dywedodd pobl wrthym nad oeddent yn ffafrio'r llwybr hwn am ei fod yn hwy ac yn fwy costus nag eraill. Dywedodd ymatebwyr i'r ymgynghoriad hefyd y byddai'n amharu ar Afon Menai am ei fod yn cysylltu agosaf â'r llwybrau croesi mewn mannau sensitif.

O ystyried hyn i gyd, ni fyddwn yn symud ymlaen ag opsiwn y coridor Melyn.



Stribed llydan o dir, sy'n lletach mewn rhai mannau ac yn gulach mewn mannau eraill, ac y gellid gosod cysylltiad oddi mewn iddo yw coridor llwybr. Rydym yn pennu coridorau trwy ystyried nodweddion yr ydym am eu hosgoi, yn cynnwys cymunedau a safleoedd amgylcheddol.





# 6. Adolygiad o'r coridorau llwybrau



## Opswn y coridor llwybr Piws

**Mae'r coridor Piws tua 33km o hyd a byddai'n mynd â'r llinell ar hyd ochr orllewinol yr ynys.**

Mae'n gadael yr Wylfa tua'r de, gan adlewyrchu cyfeiriad y llinell uwch ben 132 kV bresennol a'r A5025 sy'n rhedeg ar hyd gorllewin yr ynys i lawr i'r ardal ger y Fali a'r A55 i raddau helaeth. Yna, mae'r coridor yn rhedeg i lawr tua'r arfordir deheuol gan adael yr A55 ac yn dilyn y rheilffordd yn fras i gyfeiriad Afon Menai.

Mae'r coridor piws yn ffinio â thirffurf nodedig Mynydd Mechell yn y gogledd ac yn pasio (ond nid yn cynnwys) aneddiadau Bodedern, Bryngwran a Llanddeusant. Mae rhan ohono'n rhedeg yn agos at RAF y Fali. Mae'n croesi Cors Malltraeth wrth gyrraedd y pen deheuol.

Nid oes dynodiadau tirwedd cenedlaethol yn y coridor hwn ond mae'n ffinio ag Ardal o Harddwch Naturiol Eithriadol (AHNE) Ynys Môn i'r gorllewin a'r de.

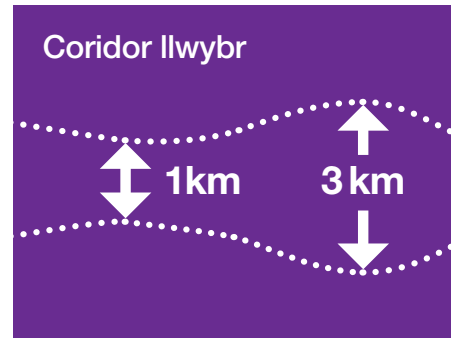
Yn y coridor, mae:

- Chwe Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA)
- Saith Heneb Gofrestredig.

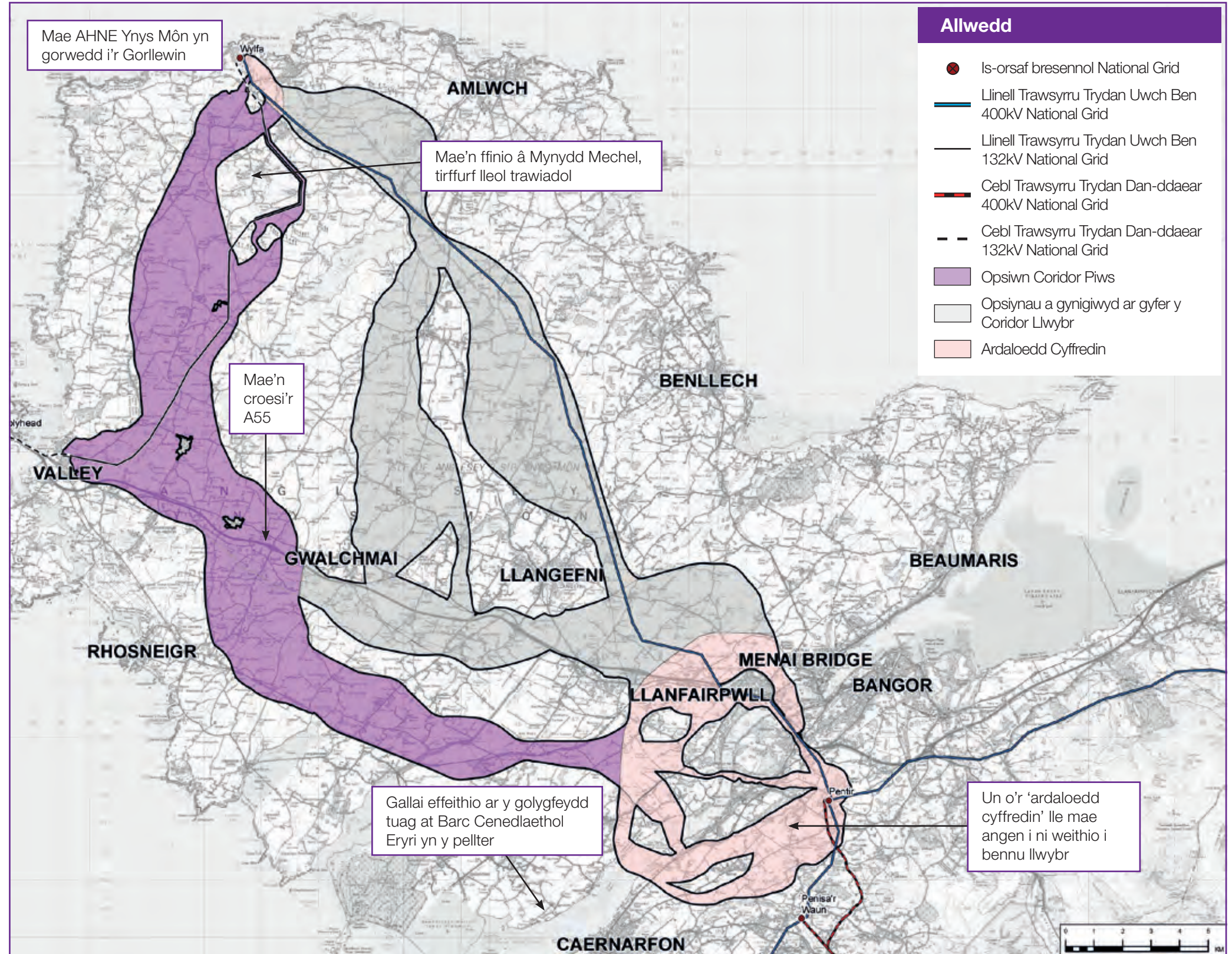
Fel y coridor llwybr Melyn, gall fod angen i'r coridor llwybr Piws groesi'r A55 mewn sawl man. Gallai hyn effeithio ar yr olygfa, ac ni fyddai'r dirwedd yn caniatáu i ni sgrinio'r llinell yn effeithiol iawn. Mae llawer o'r coridor hwn yn dir sydd heb ei ddatblygu a gallai amharu ar dirwedd Cors Malltraeth. Gan mai hwn yw'r coridor llwybr hwyaf, byddai angen adeiladu rhagor o beilonau newydd ar gyfer hwn na'r llwybrau eraill.

Yng ngham cyntaf yr ymgynghoriad, dywedodd pobl wrthym yn eu hadborth eu bod yn teimlo y byddai'r llwybr Piws yn gwneud drwg i fywyd gwylt a thirweddau sensitif. Dywedodd ymatebwyr hefyd bod y coridor yn rhy gul mewn rhai manau.

O ystyried hyn i gyd, ni fyddwn yn symud ymlaen ag opsiwn y coridor Piws.



Stribed llydan o dir, sy'n lletach mewn rhai manau ac yn gulach mewn manau eraill, ac y gellid gosod cysylltiad oddi mewn iddo yw coridor llwybr. Rydym yn pennu coridorau trwy ystyried nodweddion yr ydym am eu hosgoi, yn cynnwys cymunedau a safleoedd amgylcheddol.





# 6. Adolygiad o'r coridorau llwybrau



## Opswn y coridor llwybr Glas

**Mae'r coridor Glas tua 28km o hyd ac mae'n rhoi'r dewis o beidio â rhedeg ochr yn ochr â'r rhan fwyaf o'r ddwy linell uwch ben bresennol ar Ynys Môn, a mynd trwy dirwedd lle ceir poblogaeth gymharol wasgaredig yng nghanol yr ynys.**

Mae'n gadael yr Wylfa yn yr un cyfeiriad â llinell uwch ben 400 kV bresennol National Grid a'r coridor Oren a gynigir, cyn hollti a rhedeg tua'r de i gyfeiriad RAF Mona. Yna, mae'r coridor yn pasio ar y naill ochr a'r llall i RAF Mona cyn troi tua'r dwyrain i gyfeiriad Afon Menai. Yna, mae'n rhedeg i'r gogledd o Gors Malltraeth ac ar hyd rhan o'r A55. Gallai'r coridor hwn effeithio ar olygfeydd o'r A55.

Nid oes dynodiadau tirwedd cenedlaethol yn y coridor hwn.

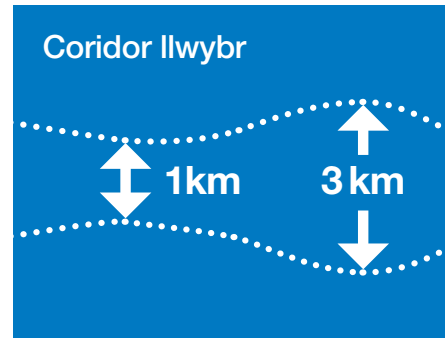
Yn y coridor, mae:

- Tri Safle o Ddiddordeb Gwyddonol Arbennig (SoDdGA)
- Deg Heneb Gofrestredig
- Maes Sioe Môn.

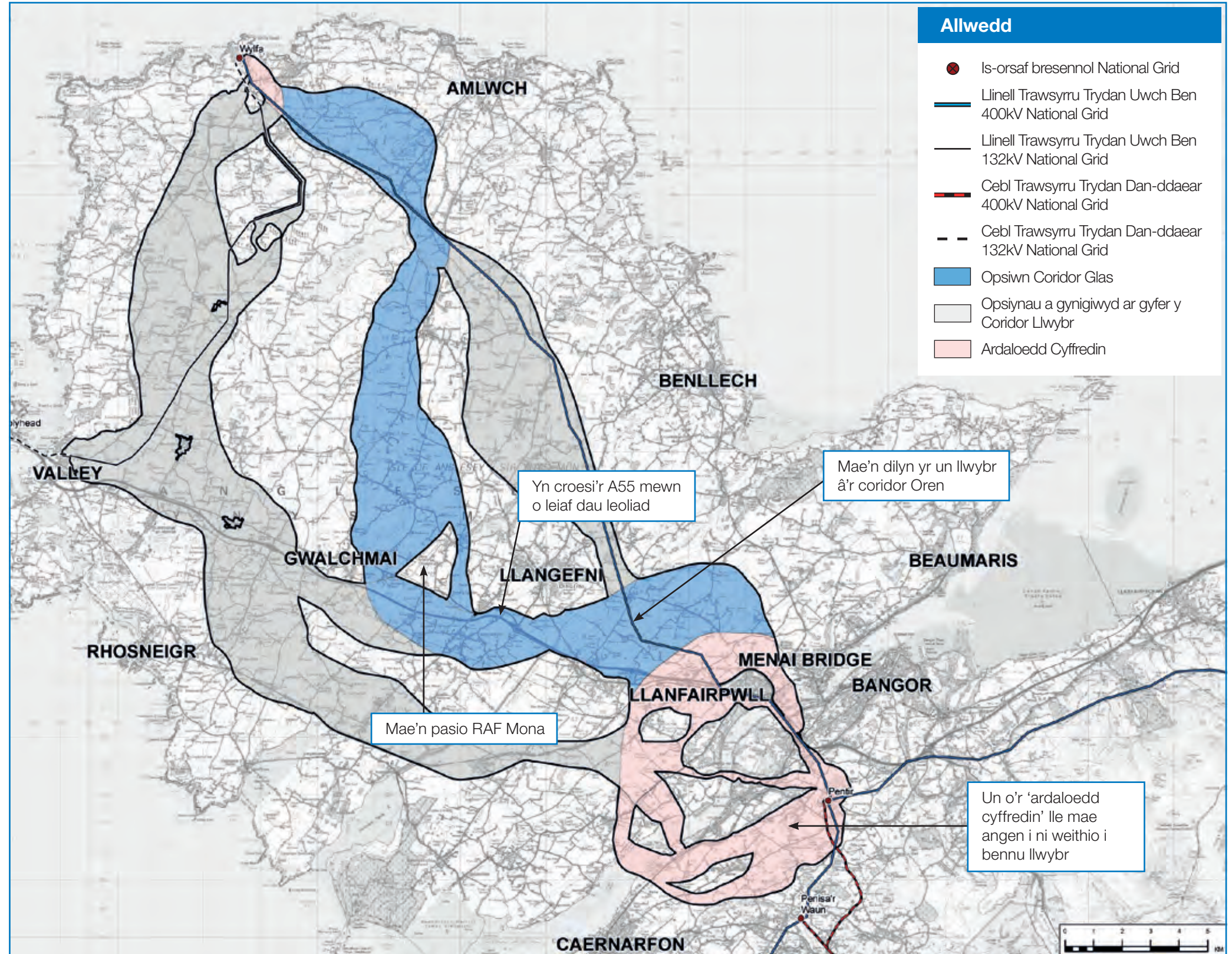
Mae llawer o'r coridor Glas mewn tirwedd sydd heb ei ddatblygu i raddau helaeth ac nid oes rhagor o offer rhwydwaith yn yr ardal.

Yn ystod ein hymgyngoriad yn 2012, dywedodd pobl wrthym y dylem osgoi'r llwybr hwn gan ei fod yn Ardal Tirwedd Arbennig Ynys Môn. Dywedodd ymatebwyr hefyd eu bod yn poeni am yr effaith bosibl ar fusnesau rhentu llety gwyliau yn ogystal â Safleoedd o Ddiddordeb Gwyddonol Arbennig. Codwyd pryder hefyd am y manau tebygol ar gyfer croesi Afon Menai a fyddai'n deillio o ddefnyddio'r coridor hwn.

O ystyried hyn i gyd, ni fyddwn yn symud ymlaen ag opsiwn y coridor Glas.



Stribed llydan o dir, sy'n lletach mewn rhai manau ac yn gulach mewn manau eraill, ac y gellid gosod cysylltiad oddi mewn iddo yw coridor llwybr. Rydym yn pennu coridorau trwy ystyried nodweddion yr ydym am eu hosgoi, yn cynnwys cymunedau a safleoedd amgylcheddol.





# 6. Adolygiad o'r coridorau llwybrau



## Opswn y coridor llwybr Oren

**Mae'r coridor Oren tua 23km o hyd ac mae wedi'i seilio'n fras ar lwybr y llinell uwch ben 400 kV bresennol sy'n rhedeg o atomfa'r Wylfa i is-orsaf Pentir.**

Hwn yw'r coridor byrraf a'r un â'r boblogaeth leiaf dwys ar y cyfan o'r holl rai a nodwyd ac mae'n cynnig cyfle i gyfyngu ar yr effeithiau ar yr ynys i'r manau lle ceir effeithiau eisoes o ganlyniad i'r llinell uwch ben bresennol. Mae'n pasio ger Llangefni.

Mae'n cynnwys y llinell 400 kV bresennol a nifer o ddynodiadau amgylcheddol, yn cynnwys gwlyptir gwarchoddedig ac Ardal Cadwraeth Arbennig (SAC).

Nid oes dynodiadau tirwedd cenedlaethol yn y coridor, ond mae'n ffinio ag AHNE Ynys Môn i'r dwyrain.

Yn y coridor, mae:

- Un safle wedi'i ddynodi'n wlyptir o bwysigrwydd rhyngwladol, Ardal Cadwraeth Arbennig, Gwarchodfa Natur Genedlaethol a Safle o Ddiddordeb Gwyddonol Arbennig
- Un Safle arall o Ddiddordeb Gwyddonol Arbennig
- 11 Heneb Gofrestredig.

O'r rhai a ddywedodd pa goridor yr oeddent yn ei ffafrio yng ngham cyntaf ein hymgyngoriad, o'r pedwar coridor y coridor Oren a ddewiswyd gan y nifer fwyaf. Dywedodd pobl wrthym eu bod yn ffafrio'r llwybr hwn am mai hwn oedd y byrraf ac y byddai'n cael llai o effaith ar gymunedau lleol. Dywedwyd hefyd eu bod yn teimlo y byddai'n well dilyn llwybr y llinell uwch ben 400 kV bresennol.

Byddai'r coridor Oren yn cadw'r llinell uwch ben newydd ochr yn ochr â'r un bresennol. Byddai pob coridor arall yn cyflwyno llinell newydd i rannau o'r ynys ble nad oes un ar hyn o bryd.

Mewn manau mae'r coridor yn culhau ac mae'n bosibl y bydd ein hopsiynau yn gyfyngedig. Byddwn yn

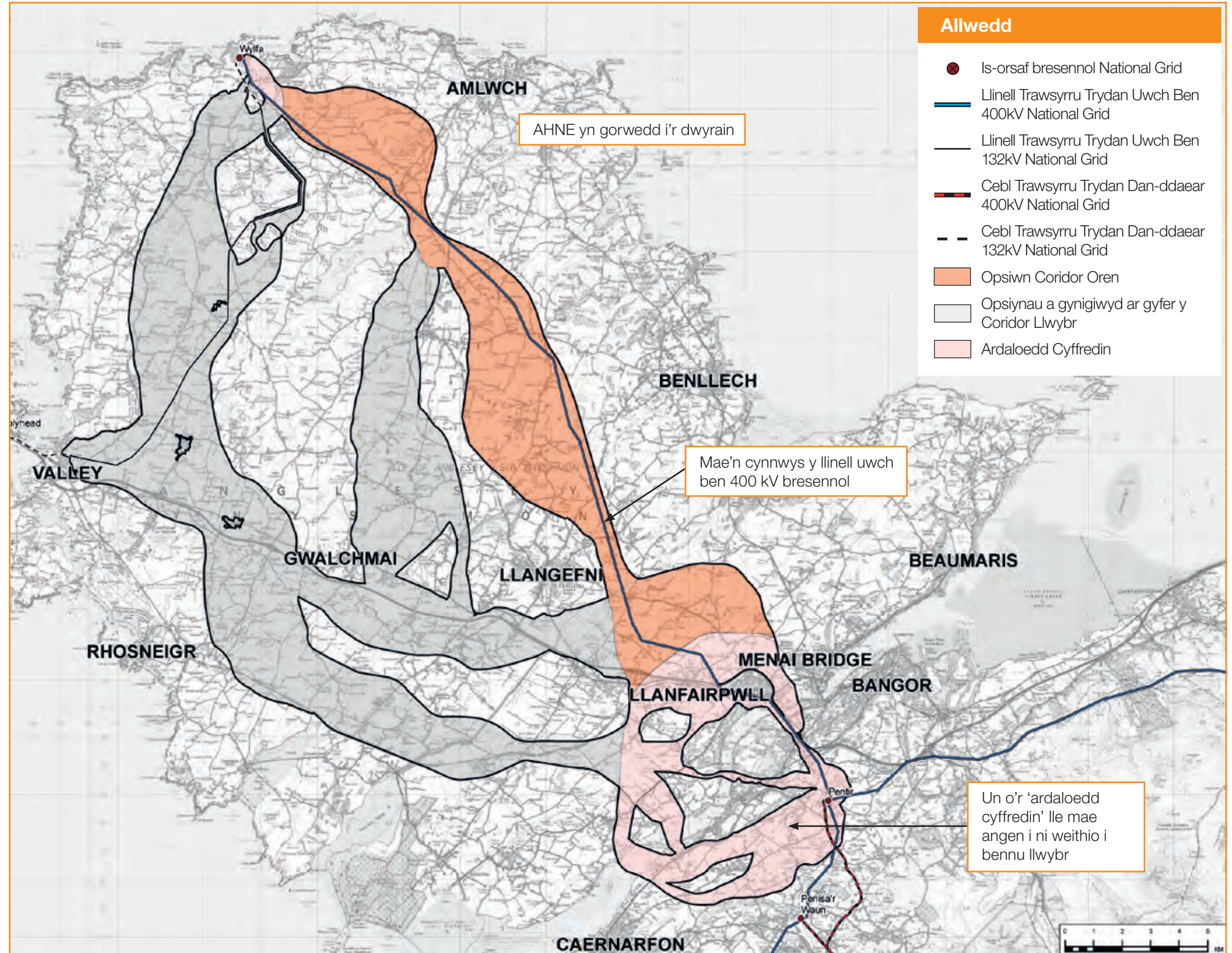
edrych yn ofalus iawn ar hyd y llwybr cyfan i weld ble gallai'n gwaith gael effeithiau arwyddocaol a sut y gallwn leihau'r rhain.

O gymryd hyn i gyd i ystyriaeth, rydym yn cynnig symud ymlaen â'r coridor llwybr Oren.

### Coridor llwybr



Stribed llydan o dir, sy'n lletach mewn rhai manau ac yn gulach mewn manau eraill, ac y gellid gosod cysylltiad oddi mewn iddo yw coridor llwybr. Rydym yn pennu coridorau trwy ystyried nodweddion yr ydym am eu hosgoi, yn cynnwys cymunedau a safleoedd amgylcheddol.





# 7. Sut y daethom i'n penderfyniad



## Y ffactorau y buom yn eu hystyried

**Yn ogystal ag ymateb pobl yr ardal a rhanddeiliaid, rydym wedi cynnal asesiadau amrywiol ac wedi ystyried nifer o ffactorau pwysig er mwyn datblygu ein cynlluniau. Mae'r rhain yn cynnwys:**

- **Y dirwedd:** yn cynnwys cymeriad a gwerth y dirwedd a golygfeydd posibl o linell newydd
- **Y dreftadaeth ddiwylliannol:** fel archaeoleg ac ardaloedd o bwysigrwydd hanesyddol
- **Ecoleg:** fel rhywogaethau o blanhigion ac anifeiliaid a warchodir, a chynefinoedd a safleoedd pwysig
- **Ffactorau cymdeithasol-economaidd:** yn cynnwys twristiaeth yn yr ardal a gweithgareddau pwysig eraill
- **Adeiladu:** sut y byddem yn adeiladu'r cysylltiad a'r seilwaith cysylltiedig
- **Materion technegol:** gofalu bod y cysylltiad yn gweithio'n ddiogel



- **Cost:** gofalu bod ein cynigion yn sicrhau cydbwysedd rhwng cost a'r amgylchedd, yn unol â gofynion Ofgem i gadw'r biliau mor isel ag y gallwn
- **Rheolau cynllunio:** rheolau cynllunio cenedlaethol a rhanbarthol. Bydd angen i'n cynigion terfynol gytuno â'r polisiau hyn.

## Ein coridor llwybr arfaethedig

**Ar ôl asesu pob opsiwn ar gyfer y coridor llwybr yn erbyn yr holl feini prawf hyn, ein cynnig yw i wneud cysylltiad uwch ben newydd yn y coridor Oren.**

Cynigir y coridor Oren am sawl rheswm, yn cynnwys:

- Dyma'r byrraf o'r holl goridorau posibl a nodwyd gennym
- Mae'n cynnig cyfleoedd da i bennu llwybr mwy sensitif ar gyfer llinell uwch ben newydd, gan ddefnyddio ffurfiau naturiol y dirwedd
- Dyma'r ardal leiaf dwys ei phoblogaeth ar y cyfan, ac mae'n osgoi llawer o ganolfannau poblogaeth mwyaf Môn
- Mae'r coridor yn dilyn llwybr y llinell uwch ben bresennol rhwng yr Wylfa a Phentir, gan leihau effaith weledol llinell newydd ar yr ynys yn gyffredinol

- Byddai'n caniatáu i ni osgoi ardaloedd sensitif fel gwarchodfeydd bywyd gwyllt a gwlyptiroedd a byddai'n ein galluogi i bennu llwybr sy'n ddigon pell oddi wrth safleoedd treftadaeth ddiwylliannol

- Byddai'n cael llai o effaith na'r opsiynau eraill ar y golygfeydd a welir o Barc Cenedlaethol Eryri

- Mae'n cyd-fynd â'r ymateb a gawsom gan y cyhoedd a sefydliadau.

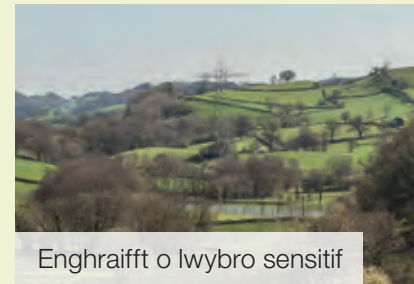
Yn ôl yr ymateb a gawsom, o'r rhai a nododd ffafriaeth, roedd y rhan fwyaf o'r farn mai'r coridor Oren oedd y mwyaf derbyniol, am mai hwn oedd y llwybr byrraf, gyda'r boblogaeth leiaf, ac felly byddai'n cael llai o effaith ar gymunedau lleol.

Yn ôl yr ymateb a gawsom hefyd, mae'r dirwedd yn y coridor Oren yn addas ar gyfer sgrinio'r llinell newydd gan ddefnyddio nodweddion naturiol fel coetiroedd sydd yno eisoes, ac roedd yn ddigon pell o safleoedd hedfan fel RAF y Fali ac RAF Mona.

Dywedoch wrthym hefyd am geisio osgoi cartrefi, meysydd chwarae, safleoedd o ddiddordeb hanesyddol a diwylliannol ac ardaloedd sensitif eu hamgylchedd pe bai'r coridor Oren yn cael ei gynni.

Byddwn yn dal i adolygu ein penderfyniadau, fel y gallwn wrando ar wybodaeth newydd a sicrhau ein bod yn gwneud y dewis gorau.

## Lleihau effaith ein gwaith



Enghraifft o lwybro sensitif



Sgrinio llinellau uwch ben



Ceblau tanddaear

**Mae sawl ffordd y byddwn yn mynd ati'n ofalus i leihau effaith llinell uwch ben ar gymunedau, golygfeydd a'r dirwedd:**

- **Pennu llwybr mewn ffordd sensitif:** Yn y manau lle bwriadwn ddefnyddio peilonau, gallwn ddefnyddio nodweddion yn y dirwedd fel bryniau a dyffrynnoedd fel bod y llinell uwch ben yn llai amlwg o wahanol gyfeiriadau

- **Sgrinio a thirlunio:** Byddwn yn chwilio i weld a oes cyfleoedd i blannu coed a llwyni yn yr ardal ehangach o gwmpas llinell uwch ben i sgrinio golygfeydd pell tuag at gysylltiad newydd

- **Peilonau gwahanol:** Byddwn yn edrych i weld a ellir defnyddio peilonau o fathau gwahanol i helpu i leihau effaith weledol y cysylltiad newydd

- **Rhoi llinellau newydd o dan y ddaear:** Lle na allwn osgoi tirwedd sensitif iawn, byddwn yn ystyried rhoi rhannau o'r llinell o dan y ddaear.

## Croesi Afon Menai

**Rydym wedi edrych yn ofalus ar yr holl wahanol ffyrdd o groesi Afon Menai ac y mae llawer ohonoch wedi dweud wrthym fod hon yn werthfawr iawn i bobl o bell ac agos. Gwyddom, o'r ymateb a gawsom, fod llawer o bobl yn teimlo na ddylid defnyddio peilonau i wneud cysylltiad yma.**

Felly, rydym yn bwriadu rhoi'r ceblau o dan y ddaear yn Ardal o Harddwch Naturiol Eithriadol Ynys Môn a'u rhoi ar neu o dan Afon Menai. Bydd angen i ni bennu'r manau priodol lle dylai'r llinell uwch ben ddod i ben ar y naill ochr a'r llall i Afon Menai.

Mae ein gwaith yn yr ardal yn parhau, ond rydym eisoes yn gwybod bod angen ystyried sawl mater. Mae hyn yn cynnwys heriau amgylcheddol a thechnegol, ynghyd â ffactorau cymdeithasol fel twristiaeth.

Mae'r cerhyntau cyflym, bywyd morol ar wely Afon Menai, daeareg yr ardal, eiddo'r Ymddiriedolaeth Genedlaethol a safleoedd treftadaeth eraill gerllaw yn ffactorau pwysig i'w hymchwilio'n bellach.

Mae angen compowndiau pennau selio i newid y llinell uwch ben yn gebl tanddaear neu fel arall ar y naill ochr a'r llall i Afon Menai ar Ynys Môn ac yng Ngwynedd. Mae angen i ni ganfod ardaloedd i roi'r rhain a bydd hynny'n ein helpu i benderfynu lle gall y llinell fynd.

Rydym yn cydweithio â Phrifysgol Bangor sydd â'r cyfuniad o ddealltwriaeth leol ac arbenigedd forol i helpu i sicrhau ein bod yn deall cymhlethdod yr amgylchedd naturiol a'r cyfyngiadau technegol yn ardal Afon Menai. Yn ogystal, rydym am ystyried barn y llu o sefydliadau a busnesau sy'n defnyddio Afon Menai a'r glannau.



# 8. Beth sy'n digwydd nesaf?



“ Os bydd National Grid yn cysylltu â chi, nid yw hynny'n golygu y byddwch yn siwr o gael offer ar eich tir. ”

## Rydym yn ystyried yn fwy manwl o lawer yr union llwybr y gallem ei ddilyn.

Byddwn hefyd yn ystyried sut y gallwn leihau effeithiau llinell uwch ben. Bydd hyn yn cynnwys arolygon amgylcheddol a siarad â pherchnogion tir, cynghorau Ynys Môn a Gwynedd, ac eraill am lefydd posibl ar gyfer peilonau a cheblau tanddaear.

Os ydych yn byw neu'n gweithio y tu mewn i'r coridor Oren, deallwn efallai bod gennych gwestiynau neilltuol am ein gwaith ac fe ofalwn ein bod yn rhoi gwybod i chi beth sy'n digwydd wrth i'n hastudiaethau symud ymlaen.

Byddwn hefyd yn cynnal rhagor o astudiaethau manwl yn ardal Afon Menai a'r AHNE i weld sut orau i roi'r cysylltiad o dan y ddaear yma. Rydym hefyd yn parhau i gynnal astudiaethau amgylcheddol cynhwysfawr i asesu effeithiau posibl ein cynlluniau ar yr amgylchedd, fel y gellir eu hosgoi neu eu rheoli'n ofalus.

Ar ôl i ni gynnal arolwg o'r holl waith hwn yn nes ymlaen yn y flwyddyn, byddwn yn ymgynghori â phobl ynglŷn â llwybr(au) posibl y gallai'r llinell ei gymryd.

Yn ein hymgyngoriad nesaf, byddwn yn cyflwyno rhagor o wybodaeth am:

- Y llwybr(au) posibl y gallai'r cysylltiad eu cymryd yn y coridor Oren a'r 'ardaloedd cyffredin' ar Ynys Môn ac yng Ngwynedd
- Sut a lle y bwriadwn groesi Afon Menai ac AHNE Ynys Môn
- Lleoliadau posibl y compowndiau pennau selio ar y naill ochr a'r llall i Afon Menai
- Y dechnoleg y gallem ei defnyddio mewn gwahanol rannau o'r llwybr, yn cynnwys y gwahanol fathau o beilonau y gallem eu defnyddio
- Sut y bwriadwn leihau effaith y cysylltiad
- Materion eraill y mae pobl yn meddwl eu bod yn bwysig.



Er mwyn sicrhau bod ein cynlluniau yn dal yn addas, byddwn yn dal i'w hystyried mewn ymateb i'r sylwadau a gawn gan gymunedau lleol, a sefydliadau sy'n gyfrifol am feysydd fel treftadaeth, cefn gwlad a'r amgylchedd.

## Pobl sydd â buddiant yn y tir

**Os oes gennych chi fuddiant mewn tir yn y coridor llwybr Oren a'r ardaloedd cyffredin, efallai y byddwn yn cysylltu â chi yn fuan i drafod ein cynlluniau ac i ymgynghori â chi ynglŷn â sut y gallwn gydweithio.**

Mae pobl sydd â buddiant mewn tir yn cynnwys perchnogion, tenantiaid, deiliaid a morgeiseion ac unrhyw un sydd â hawliau dros dir. Mae hyn yn cynnwys hawliau tramwy preifat, hawliau hela, neu hawliau i dderbyn taliadau ynglŷn â thir.

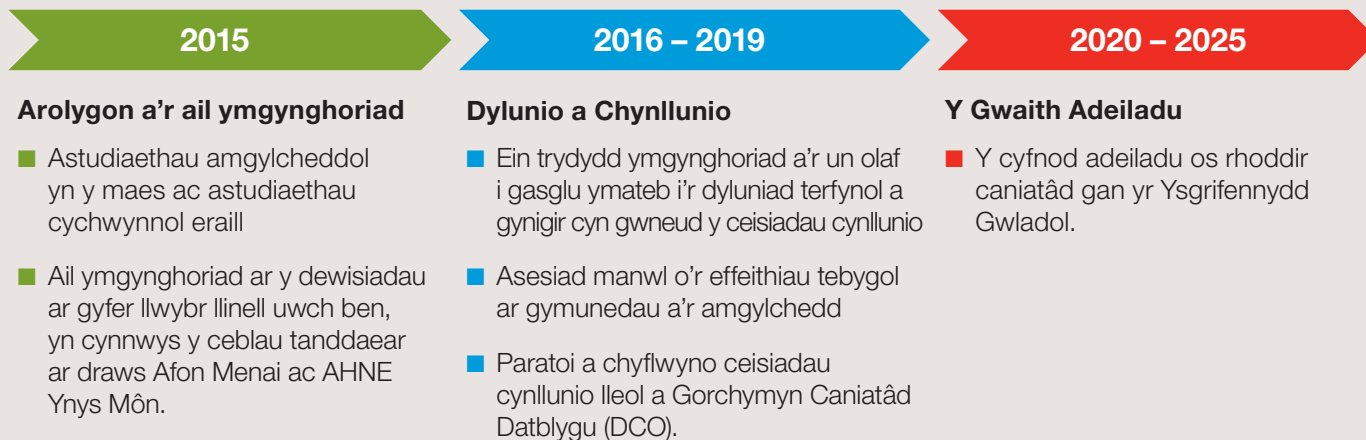
Mewn rhai manau, efallai y gofynnwn i bobl am gael mynd ar eu tir i gynnal arolygon amgylcheddol a pheiranyddol i'n helpu i benderfynu ar leoliadau ar gyfer peilonau, ceblau tanddaear, neu gompowndiau pen selio.

Os bydd National Grid yn cysylltu â chi, nid yw hynny'n golygu y byddwch yn siŵr o gael offer ar eich tir. Mae angen mwy o asesu ac ymgynghori â thirfeddianwyr, cyrff arbenigol a chymunedau cyn nodi ein cynigion terfynol.



## Amserlin y prosiect

Bydd sawl cyfle eto i chi gyflwyno'ch barn am ein cynlluniau wrth i'r prosiect symud ymlaen, yn cynnwys eich barn am lwybrau posibl yn nes ymlaen yn 2015



Wrth i ni ddatblygu ein cynlluniau byddwn yn ystyried yn barhaus a ydym yn symud ymlaen â'r cynlluniau priodol, a yw graddfa'r gwaith angenrheidiol yn gywir, ac a ydym yn sicrhau'r cydbwysedd cywir rhwng yr amgylchedd a chost.

# Dogfennau pwysig



**Need Case** (wedi'i ddiweddarau yn 2015) – mae'n esbonio pam y mae angen Prosiect Cysylltiad Gogledd Cymru a'r gwaith y mae National Grid yn bwriadu ei wneud ac mae'n rhoi arolwg o hyn yn dilyn ein hymgyngoriad cyntaf.

**Strategic Options Report** (wedi'i ddiweddarau yn 2015) – ein hasesiad o'r dewisiadau technegol-ymarferol ar gyfer y cysylltiad.

**Stage One Consultation Feedback Report** – mae'n nodi sut y buom yn ymgynghori ac mae'n rhoi crynodeb o'r sylwadau a gafwyd yn ystod cam cyntaf ein hymgyngoriad, y themâu a'r materion a godwyd a'n hymatebion ni i'r rhain.

**Mae'r dogfennau hyn ar gael ar ein gwefan neu trwy gysylltu â'n tîm cysylltiadau cymunedol.**

Os hoffech fersiwn wahanol o'r ddogfen hon, gallwch gysylltu â ni ar **0800 990 3567** neu fynd i'n gwefan: **[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)**

**Mae sawl ffordd o gysylltu â ni a chael rhagor o wybodaeth:**

Mynd i wefan ein prosiect:  
**[www.nationalgrid.com/cysylltiadgogleddcymru](http://www.nationalgrid.com/cysylltiadgogleddcymru)**

Ffonio ein rhif rhadffôn: **0800 990 3567**.  
Llinellau ar agor rhwng 9am a 5pm  
o ddydd Llun tan ddydd Gwener

Anfon neges ebost i:  
**[nationalgrid@cysylltiadgogleddcymru.com](mailto:nationalgrid@cysylltiadgogleddcymru.com)**

Ysgrifennu i'n cyfeiriad rhabost:  
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LOGO





nationalgrid

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**6.2.8**

**Appendix 8**

**Project Newsletter, Summer 2015 (English)**

National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA

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## Have your say this Autumn

We'll be holding another consultation later this year on how we propose to connect Wylfa Newydd.

The new nuclear power station could bring many billions of pounds to the North Wales economy. Our connection is a vital part of achieving this investment and making sure communities everywhere benefit from new low-carbon energy.

Over the spring and summer, our teams have been continuing their studies across Anglesey and Gwynedd. They've been looking at how we can reduce the effect of our work as much as we can.

We've been looking at options for where the new overhead line could go, and how we can route it away from towns and villages, historical sites and important areas for tourism and nature conservation as



much as possible. We've also continued our studies at the Menai Strait to look at where the underground cables could go.

All of this work, together with the feedback we've received, is helping us to develop more detailed proposals for consultation.

### Your comments count

The consultation will be your opportunity to get involved and influence where we put the connection. We will ask you if there are areas along the route that are especially important and that you want us to consider.

We'll be holding exhibitions across the area where you can see our plans in detail, talk to our team and ask questions. We'll send you a newsletter nearer the time with the dates and locations, along

with details of the proposals and how to have your say.

We'll look carefully at all the feedback we get, together with the views of specialist bodies and the findings of our own studies. We'll then consider how these can help shape our proposals and try to find the right balance with our duties to develop a connection that is safe, efficient and affordable.



### Inspiring children into engineering

It was great to meet so many people at this year's Anglesey Show. Dozens of children had fun using our VEX robots to perform a variety of challenging tasks.

But that's just the start. We'll be working with schools in Anglesey and Gwynedd to create a VEX Robotics schools programme for 11 to 18 year-olds - part of our drive to inspire more young people to consider an engineering career. In recent years, we've recruited six young people from the local area to work in our teams based in North Wales. And across Great Britain, National Grid employs nearly 9,000 people in a variety of rewarding careers.

### New Senior Project Manager

Hello, my name's Matt Durham and I'm picking up the lead from Martin Kinsey on our North Wales project.



I've worked for National Grid for many years on other large and complex projects. I've already spent time on Anglesey and in Gwynedd getting to know the area. I'm looking forward to working together with everyone, and meeting and speaking with you in our upcoming consultation.

### Keep in touch

Get all the latest news by registering for updates on our website. Or contact us in the following ways:



[www.nationalgrid.com/northwalesconnection](http://www.nationalgrid.com/northwalesconnection)



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