Applicant's Responses to the Examining Authority's First Written Questions

Abergelli Power Project

EN010069

Deadline 1 – 9 November 2018

1 INTRODUCTION

1.1 Background

On 17 October 2018 the Examining Authority (ExA) issued a timetable for the examination in accordance with Planning Act 2008 – Section 88 and the Infrastructure Planning (Examination Procedure) Rules 2010 – Rules 8 and 13.

This Rule 8 procedural decision requested the following document submissions to be made available by Deadline 1 on 9 November 2018:

- Comments on Relevant Representations
- Written Representations
- Local Impact Reports from any Local Authorities
- Statements of Common Ground requested by the ExA
- Comments on updated application documents
- Responses to further information requested by the ExA
- Post hearing submissions including written submissions of oral case

1.2 Content

This document provides responses to the ExA's First Written Questions which have been directed to the Applicant, Abergelli Power Limited (APL). In addition, where input from the Applicant would assist the ExA, the Applicant has provided answers to questions directed to other parties.

Answers to questions are provided in numerical order as per the sections and headings outlined in the ExA First Written Questions. Questions have been repeated for ease of reference, and where a substantial response is required or where additional information or documents are provided, these have been provided as Appendices. These are clearly outlined in the relevant response, and the Appendices are attached to this submission document. Relevant cross referencing to other DCO documentation (either revised and submitted at the same time as this document or as submitted with the DCO application) has also been provided where appropriate.

Question number	Question to	Question	Response
1. 0	**General and Cross-topic Questions**		
1.0.1.	The Applicant and City and County of Swansea (CCS).	**Gas and electrical connections planning applications:** The Planning Statement [APP-007] at paragraph 1.1.5 states: *"Separately, APL will seek planning permission for the Gas Connection under the Town and Country Planning Act 1990 (TCPA 1990) and the Electrical Connection under either the TCPA 1990 or as permitted development under the Town and Country Planning (General Permitted Development) Order 1995 (GPDO)."* What is the current status of these applications?	Two separate planning applications for the Gas Connection and Electrical Connection have been submitted under the Town and Country Planning Act 1990 (TCPA) to City and Council of Swansea (CCS) (References 2018/2020/FUL and 2018/2021/FUL). These applications were validated on 25 September 2018. These two applications are currently under consideration by CCS. It is anticipated that the applications will be determined at a Planning Committee on the 4 December 2018.
1.0.2.	The Applicant	**Planning Statement [APP-007] Table 3-1(contains no key for 3 asterisks), ES Table 3-3 [APP-042] and draft DCO Table 2 [APP-014]:** Can the Applicant explain why Tables 3-1 and 3-3 Parameters for Assessment differs from Table 2 in the draft DCO?	Table 3-1 is missing a key below the table, which explains that the asterisks highlight items that are not included in the DCO. This table has been amended to include the key and can be found in Appendix 1. Table 2 in the draft DCO does not contain the Gas Pipeline, the AGI (above ground installation) or MOC (minimum offtake connection) (which have an asterisk by them) as these are not included in the DCO Application. Consent for these elements is being sought via the TCPA Application for the gas connection and therefore no parameters have been included in the DCO and will instead be secured where required through the gas connection planning permission. The Applicant can confirm that there are no further discrepancies between the Parameters for Assessment and draft DCO.
1.0.3.	The Applicant and NRW	**Operating Hours:** The ES [APP-042] at paragraph 6.4.37 states: *"The Generating Equipment Site is a peaking plant and will therefore only operate during periods of high power demand. It is therefore anticipated that the Generating Equipment will normally operate for 1,500 hours per year, estimated as a rolling average over 5 years, but may operate for up to a maximum of 2,250 hours per year as a realistic worst-case for any given year. The maximum number of hours that the plant can operate will be set out in the site's Environmental Permit and this operating period cannot be exceeded."* Where in the draft DCO [APP-014] is it secured that operation of the gas turbine generators will not exceed 1500 hours in any calendar year?	The Draft DCO does not secure the operational hours of the generating station, and it does not need to as the environmental permit will do so, and overlapping controls in different regimes are unnecessary and should be avoided. APL submitted its application for an environmental permit alongside the DCO application (22 May 2018), and NRW has confirmed it was 'duly made' on 29 May 2018. NRW has issued a draft environmental permit to APL for its review (without prejudice to the decision NRW may make on the application), and that draft includes the following paragraph as is standard for such peaking plants: "The plant has been designed and will run as a peaking power station supplying electricity to the National Electricity Transmission System for up to 2250 hours per year (1500 hours per 5-year rolling average) at times of high demand or during periods of instability in the grid".

<table>
<tr><th>Question number</th><th>Question to</th><th>Question</th><th>Response</th></tr>
<tr><td></td><td></td><td>How is it proposed to calculate the rolling average level of hours of operation in each of the first five calendar years of operation?</td><td>In terms of the 5 year rolling average, this provides some flexibility for the operator to exceed 1,500 hours in a calendar year, but ensuring that over any 5 year period that 1,500 hours per annum is not exceeded on average. The maximum permitted operation in a single year is 2,250 hours. Over 5 years the average must still remain at 1,500 hours and hence not exceed a total of 7,500 hours. The following table provides an example of how the generating station could be operated, remaining within those parameters:

<table>
<tr><td>Year</td><td>Operational hours</td><td>Cumulative hours</td></tr>
<tr><td>1</td><td>2,250</td><td>2,250</td></tr>
<tr><td>2</td><td>1,600</td><td>3,850</td></tr>
<tr><td>3</td><td>1,600</td><td>5,450</td></tr>
<tr><td>4</td><td>750</td><td>6,200</td></tr>
<tr><td>5</td><td>1,300</td><td>7,500</td></tr>
<tr><td>Total</td><td>7,500</td><td></td></tr>
<tr><td>Average</td><td>(7,500 / 5) = 1,500</td><td></td></tr>
</table></td></tr>
<tr><td>1.0.4.</td><td>The Applicant and CCS</td><td>Decommissioning strategy Requirement 27 of draft DCO [APP-014]:

The Project has a design life of 25 years and this is stated throughout the ES [APP-042] and several management plans [APP-036] are written to last for the duration of the Project. In addition, the project has been designed for this design life, for example in terms of the attenuation requirements for surface water discharge.

Does the Applicant consider that there should be a requirement limiting the lifetime of this Order, and if not provide reasons?</td><td>The Applicant does not consider it necessary to impose a time limit for the operation of the plant. This is further explained in Agenda Item 6.5 of the Applicant's Written Summary of Oral Representations for Issue Specific Hearing 1 (submitted by the Applicant at Deadline 1).

Appendix 7 of the Applicant's Written Summary of Oral Representations for Issue Specific Hearing 1 provides a sensitivity test of a scenario in which the operational life of the Project is over 25 years – the technical note specifically considers an operational life of 35 years and (an undefined) longer period. In every case the conclusions in the ES as to the magnitude and significance of effects would remain the same, for all topics.</td></tr>
<tr><td>1.0.5.</td><td>The Applicant and CCS</td><td>Bond for Decommissioning of Plant:

CCS [RR-022] believe that a bond should be provided to cover the full cost of decommissioning, repayable upon completion of this element, to ensure that there is funding available to dismantle/ decommission the project in the future.

Does the Applicant propose to put such a bond in place, and if not provide reasons?</td><td>The Applicant does not consider that it is necessary to provide a bond or other financial security for future decommissioning costs. This is further explained in Agenda Item 6.6 of the written summary of the Applicant's oral case put at the development consent order issue specific hearing on Wednesday 10 October 2018.</td></tr>
</table>

Question number	Question to	Question	Response
1.0.6.	The Applicant and CCS	**Discharge, monitoring and enforcement costs:** CCS [RR-022] the Local Planning Authority will be responsible for discharging, monitoring and enforcing any requirements imposed on the development as well as any planning obligations. Currently there is no provision for charging in the draft DCO [APP-014]. What is the Applicants view on this proposal?	The draft DCO submitted by the Applicant at Deadline 1 now includes provisions at paragraph 3 of Schedule 12 for the payment of a fee to the local planning authority on submission of an application for the discharge of requirements under the DCO. The payment is based upon the current fee payable to local planning authorities in Wales for the discharge of conditions under the Town and Country Planning (Fees for Applications, Deemed Applications and Site Visits) (Wales) Regulations 2015 (as amended from time to time). At present, this is a fee of £95 per submission. The use of the standard fee scale has been discussed and agreed with CCS. CCS has not raised with the applicant the question of payment for monitoring compliance with the DCO, nor for enforcement costs should enforcement become necessary, and these are not provided for in the draft DCO. The Applicant considers that it is the statutory responsibility of the local planning authority to monitor the implementation of developments within their area and to take what steps they consider are necessary in relation to enforcement.
1.0.7.	CCS	**Refusal of planning permission on land adjacent to the west of the site:** Paragraph 3.7.5 of the Planning Statement [APP-007] states: *"In October 2015, planning permission was refused for an "Emergency standby electricity generation facility comprising: modern modular diesel generator units (up to 14 in total), transformers, diesel storage tanks, boundary treatment including acoustic screening, access improvements and associated works" at land adjacent to the west of the Project Site (see application boundary in Figure 3-5) (CCS Ref: 2015/1716). The application was refused on the basis that, in the Council's view, the positive benefits of the development would not outweigh the visual harm to the countryside caused by it."* Can CCS provide the detailed reasons behind their refusal of this planning application?	
1.0.8.	CCS	**CCS LDP up to 2025:** CCS submitted the Deposit LDP to the Ministers of the Welsh Government for independent Examination on the 28 July 2017. Following formal acceptance on 4 August 2017, the Welsh Ministers appointed Inspectors to conduct the Examination and to assess the soundness of the LDP. Examination hearings commenced on 6 February 2018 and ran until late March 2018 [APP-007].	

<table>
<tr><th>Question number</th><th>Question to</th><th>Question</th><th>Response</th></tr>
<tr><td></td><td></td><td>What is the current status of the LPD Examination and when do CCS anticipate the LDP being adopted?</td><td></td></tr>
<tr><td>1.0.9.</td><td>The Applicant and NRW</td><td>Environmental Permit (EP):

a) What is the current status of the Project’s EP application?

b) Are there any reasons of which NRW are aware why an EP should not be forthcoming for the Project as described in the ES [APP-042]?

c) Are there any reasons of which NRW are aware why an EP for the Project would be granted subject to conditions or operational limitations that are not anticipated in the ES?

d) Are any additional controls needed in the draft DCO [APP-014] to ensure that the air emissions Rochdale Envelope as assessed in the ES (see paragraph 6.4.35 [APP-042]) is not exceeded and relevant IED / EPR emissions limit values and benchmarks are met?

e) Does NRW believe these matters will be satisfactorily addressed by the EP process?</td><td>a) The application was submitted to Natural Resources Wales and was duly made on the 29/05/18. Two separate schedule 5 requests have been made by NRW, the first on 14 June 2018 and the second on the 03 August 2018. The Applicant has responded to both requests in full. A draft permit was issued on the 22 October 2018 and is currently being reviewed by the Applicant.

The Status log of the draft permit is provided below which has been copied from the draft permit.

<table>
<tr><th colspan="3">Status Log of the permit</th></tr>
<tr><th>Detail</th><th>Date</th><th>Comments</th></tr>
<tr><td>Application PAN-002743</td><td>Duly made 29/05/18</td><td>Application for a new 748MW gas-fired power station</td></tr>
<tr><td>Schedule 5 request for more information</td><td>14/06/18</td><td>Further information sought regarding air quality modelling and environmental impact assessment</td></tr>
<tr><td>Schedule 5 Information received</td><td>03/07/18</td><td></td></tr>
<tr><td>Schedule 5 request for more information</td><td>03/08/18</td><td>Further information sought regarding noise assessment and modelling</td></tr>
<tr><td>Schedule 5 Information received</td><td>10/08/18</td><td></td></tr>
</table>
b) The Applicant has provided all the required information and any additional clarification in order to aid the Duly Made application. The Applicant is unaware of any impediment and awaits NRW’s comments on this matter.

c) NRW question – no comments

d) Under Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (the Industrial Emissions Directive (IED)), the Power Generation Plant will be limited to “not operate for more than 1500 hours per year as a rolling average over a period of five years”. This will be monitored by NRW under the environmental permit for the Project.

In July 2015 a protocol was adopted under the IED, stipulating how this is to be applied in practice, a copy of which is provided at Appendix 2 of this document. The adopted protocol</td></tr>
</table>

<table>
<tr><th>Question number</th><th>Question to</th><th>Question</th><th>Response</th></tr>
<tr><td></td><td></td><td></td><td>set a cap of 2,250 hours for the number of operating hours in any one year and this is the basis on which the EIA for the Project has been carried out. The Applicant does not consider that any additional controls are needed in the draft DCO, and reference should be made to the Applicant's response to question 1.0.3 above.

e) NRW question – no comments.</td></tr>
<tr><td>1.0.10.</td><td>The Applicant</td><td>Detailed CVs:

Can the Applicant provide detailed CVs of the principal author of each assessment chapter in the ES [APP-042] and of the principal author of the rest of the ES?</td><td>The principal authors of ES (APP-042) technical and general chapters are listed below. Detailed CVs are provided in Appendix 3.
<table>
<tr><td>General Chapters</td><td>Catherine Anderson, AECOM</td></tr>
<tr><td>Chapter 2: Regulatory and Policy Background</td><td>Dermot Scanlon, PBA</td></tr>
<tr><td>Chapter 6: Air Quality</td><td>Patrick Froggatt, AECOM</td></tr>
<tr><td>Chapter 7: Noise & Vibration</td><td>Michael Hewett, AECOM</td></tr>
<tr><td>Chapter 8: Ecology</td><td>Kevin Webb, AECOM</td></tr>
<tr><td>Chapter 9: Water Quality and Resources and Flood Risk</td><td>Jane Sladen, AECOM</td></tr>
<tr><td>Chapter 10: Geology, Ground Conditions and Hydrogeology</td><td>Richard Knott, AECOM</td></tr>
<tr><td>Chapter 11: Landscape and Visual Effects</td><td>Ruth Mauritzen, AECOM</td></tr>
<tr><td>Chapter 12: Traffic, Transport and Access</td><td>Spiro Panagi, AECOM</td></tr>
<tr><td>Chapter 13: Historic Environment</td><td>Andrew Pearson, AECOM</td></tr>
<tr><td>Chapter 14: Socio-Economics</td><td>Nick Skelton, PBA</td></tr>
</table></td></tr>
<tr><td>1.0.11.</td><td>The Applicant</td><td>EU Directive 2014/52/EU:

The ES [APP-042] at paragraph 2.2.1 states European Commission Directive 2014/52/EU May 2014 is relevant to the project.

Can the Applicant expand on how they regard it as relevant to the project?</td><td>EU Directive 2014/52/EU was transposed into UK planning legislation on the 16 May 2017 through various sets of regulations applying to different consenting regimes. Those of relevance to DCO applications were the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. These 2017 EIA Regulations state that, where a scoping opinion has already been requested, or an application or an ES submitted, before the commencement of the 2017 EIA regulations on 16 May 2017, the previous EIA regulations and regime will continue to apply. Therefore, as a Scoping Report was submitted for the Project in June 2014, the Environmental Statement has been undertaken in line with the</td></tr>
</table>

Question number	Question to	Question	Response
			previous (2011/92/EU) EIA Directive and associated EIA Regulations (the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009. The Applicant recognises that the EU Directive 2014/52/EU is the most recent legislation; however, this is only made in reference and they are not directly applicable to the DCO application.
1.0.12.	The Applicant	**Planning and the Welsh Language:** Paragraph 2.10.25 of the ES [APP-042] states: *"….. The appropriate use of the Welsh language has been considered throughout pre-application consultation and in the preparation of the DCO Application."* Can the Applicant provide further details on how the Welsh language has been considered in this application?	Appropriate consideration has been given to the Welsh language through the evolution of the Project and during consultation, as explained in the Consultation Report (APP-059), in accordance with the principles of TAN 20. From the outset of the Project in 2014 this has included provision of a range of materials in Welsh language for statutory consultation as agreed in advance with CCS. Following a period during which the Project was put "on hold" (between March 2015 and March 2017), and ahead of Phase 2 Statutory Consultation in 2018, the approach to provision of Welsh Language consultation materials was reconfirmed in consultation with CCS via email on 8 November 2017 (see Consultation Report Appendix 9.A, APP-062). The pre-application consultation documents and materials provided in Welsh Language were: • The Project Website • Pre-application consultation leaflets • Statement of Community Consultation (SoCC) • SoCC Notice • Exhibition Adverts and Posters • Main Information Board for Pre-application Exhibitions • Preliminary Environmental Information Report Non-Technical Summary • Cover letter for s42 consultees • Feedback Forms at exhibitions In addition to the above, the Applicant arranged for a Welsh Language speaker to be in attendance at the pre-application exhibition events in October 2014 and February 2018. Finally, the provision of consultation materials in Welsh Language, the Applicant also consulted with CCS regarding the provision of DCO Application documents in Welsh. The following DCO Application documents were provided in Welsh Language: • Introduction to the Applicant, • Consultation Report Executive Summary, • Environmental Statement Non-Technical Summary, and

Question number	Question to	Question	Response
			• Planning Statement Executive Summary.
1.0.13.	The Applicant and CCS	**Green Infrastructure:** At paragraph 2.11.58 of the ES [APP-042] it states: *"Draft Policy ER 2 requires that development seeks to maintain or enhance the County's multi-functional green infrastructure network."* How does the Applicant believe it conforms with draft policy ER 2? What is the CCS view?	As originally worded, Draft Policy ER 2 – Strategic Green Infrastructure Network within the City and County of Swansea Local Development Plan (LDP) Deposit Document (2016) required development proposals to *"maintain or enhance the extent, quality and connectivity of the County's multi-functional green infrastructure network, and where appropriate:* *i. Create new interconnected areas of green infrastructure between the proposed site and the existing strategic network;* *ii. Fill gaps in the existing network to improve connectivity; and/or* *iii. In instances where loss of green infrastructure is unavoidable, provide mitigation and compensation for the lost assets".* These policy requirements have since been clarified through the Examination of the LDP Deposit Document. Taking account of proposed Matters Arising Changes (MAC) (October 2018) to the LDP Deposit Document, Policy ER2 now reads: "*Green infrastructure will be provided through the protection and enhancement of existing green spaces that afford valuable ecosystem services. Development that compromises the integrity of such green spaces, and therefore that of the overall green infrastructure network, will not be permitted.* *Development will be required to take opportunities to maintain and enhance the extent, quality and connectivity of the County's multi-functional green infrastructure network, and where appropriate:* *i. Create new interconnected areas of green infrastructure between the proposed site and the existing strategic network;* *ii. Fill gaps in the existing network to improve connectivity; and/or* *iii. In instances where loss of green infrastructure is unavoidable, provide mitigation and compensation for the lost assets*". Paragraph 2.9.9 of the LDP Deposit (which supports Draft Policy ER2) identifies a range of green infrastructure ecosystem services which should be taken into account. Of relevance to the proposed development, this includes "mitigating for and adapting to the impacts of climate change", "protecting and enhancing biodiversity", "preventing flooding" and "assisting in economic regeneration". With reference to the latest version of Draft Policy ER2, the technical assessments presented within the ES (APP-042) demonstrate that the construction and operation of the Project is not considered likely to result in any residual adverse effects which would be significant in the context of the EIA Regulations. This has been achieved through careful siting and design to minimise effects on sensitive receptors, including green infrastructure assets. As detailed in Chapter 8 - Ecology of the ES (App-042), a residual minor adverse

Question number	Question to	Question	Response
			effect is predicted in relation to the loss of and disturbance to habitats within the Site during construction, although this would be compensated for through the provision of replacement woodland/scrub planting in appropriate locations (as secured through the draft DCO). Paragraph 6.2.104 of the Planning Statement (APP-007) confirms that a Flood Consequences Assessment has been undertaken for the Project in accordance with paragraph 5.7.4 of NPS EN-1, with the Flood Consequences Assessment concluding that the Project has been designed to address flood risks and is considered to have a low or negligible impact on flooding in the wider area. Chapter 14 – Socio-economics of the ES (APP-042) also concludes that the construction and operational phases of the Project would result in beneficial but not significant employment effects and presents an opportunity to develop the skills of the local workforce and increase the value of the construction industry, especially given the identified importance of this industry to baseline employment conditions within the assessed Study Area. Drawing this evidence together, whilst the design characteristics of the Project limit its ability to directly enhance green infrastructure, it is clear from the Planning Statement (APP-007) and ES (APP-042) that the Project would appropriately support the maintenance of green infrastructure ecosystem services and would help to maintain the extent, quality and connectivity of the County's multi-functional green infrastructure network, including through the provision of compensatory planting. The Project therefore accords with Draft Policy ER2 of the emerging City and County of Swansea LDP. The Applicant also notes that Policy ER2 remains in draft at present and therefore that the weight to be attached to it is more limited.
1.0.14.	The Applicant	**Discharge point of Afon Llan/Lliw and River Loughor:** At paragraph 3.3.5 of the ES [APP-042] it states: *"Within the Project Site there are springs, with their associated streams and drainage ditches which discharge into the Afon Llan (see Figure 3.1). The Afon Llan links with the Afon Lliw and the River Loughor, which discharges into the Bristol Channel."* At paragraph 9.5.20 of the ES it states: *"The Afon Llan links with the Afon Lliw and the River Loughor, which discharges into Carmarthen Bay."* Can the Applicant confirm that the 3 watercourses discharge into Carmarthen Bay as shown in Figure 8.2 [APP-024]?	The Applicant confirms that the three watercourses discharge into the Carmarthen Bay (part of the Bristol Channel). ES Figure 9.1 (APP-024) illustrates the surface water bodies across the Project Site and surrounding area. It is acknowledged that this figure does not extend as far as the coast. ES Figure 8.2 (APP-024) presents ecological designated sites although due to the scale does not clearly show these watercourses.

Question number	Question to	Question	Response
1.0.15.	The Applicant and NRW	**Operational Matters:** Paragraph 3.4.30 of the ES [APP-042] states the power generation plant will have a rated electrical output of, or less than, 299MWe. Schedule 1 of the draft DCO [APP-014] states up to 299MWe. Paragraph 3.4.31 of the ES states that: *"APL will be required to demonstrate that it would not be possible for the operating plant to exceed 299 MWe, in order to comply with the IED that requires all new combustion plants with a rated electrical output of 300 MW or more to have met a number of conditions and ensured space is available for carbon capture and storage."* Is there any operating scenario where rated electrical output could be >299MWe? Can the Applicant and NRW confirm that an EP (if granted) will reflect this operational regime described in the ES?	Schedule 1 of the draft DCO defines the Project as "a generating station with a gross rated electrical output of up to 299MWe" Therefore the Project consented by the DCO must have a "rated electrical output" of less than 300MWe. The wording "rated electrical output" has been chosen to clarify that the 299MWe limit refers to the "rated" output of the generating station, and to provide a measurable and objective limit. Because gas turbines are air breathing machines, with air and combustion gases being the working fluid, the "actual" output varies with the density of air according to ambient temperature as well as altitude/barometric pressure and, to a lesser extent, humidity. To facilitate standardised plant procurement and testing, there is an industry accepted method to determine the "rating" of a generating station. This is set out in British Standard BS ISO 2314:2009 (based on previous recommendations by the International Council on Combustion Engines (CIMAC): Recommendations for Gas Turbine Acceptance Test, CIMAC, 1968). BS ISO 2314 defines standard reference conditions (as defined in ISO 2533 Standard Atmosphere) equal to the following (for the ambient air or intake air at the compressor flange (alternatively, the compressor intake flare)): • absolute pressure of 101,325 kPa (1.01325 bar; 760 mm Hg) • temperature of 15 °C • relative humidity of 60 % The Applicant proposes to procure a generating station with a rated electrical output of no more than 299MW according to BS ISO 2314:2009. At times when the actual site conditions are 'better' than the reference conditions in BS ISO 2314:2009, a plant with a "rated electrical output" of 299MWe could have an "actual" output of more than 299MWe, however, the "rated" output will always remain 299MWe so Schedule 1 of the DCO will always be complied with. It is noted that the Carbon Capture Readiness (Electricity Generating Stations) Regulations 2013 (the "CCR Regulations") provide that the Secretary of State must not make a DCO for the construction of a combustion plant with a "rated electrical output" of 300 megawatts or more unless he has determined whether the "CCR conditions" are met in relation to that combustion plant. Determining whether the CCR conditions are met requires an assessment of the matters prescribed in regulation 2(2) of the CCR Regulations. The Applicant considers that the term "rated electrical output" in the CCR Regulations (which is not defined) must mean the electrical output rated by using the UK industry standard approach (i.e. BS ISO 2314:2009). The terminology in the draft DCO matches that in the CCR Regulations to ensure that the DCO does not engage the provisions of the CCR Regulations requiring such an assessment of the CCR conditions.

Question number	Question to	Question	Response
			It would be technically possible to place an artificial limit on the plant so that the "actual" output (as opposed to the "rated" output) could never exceed 299MWe, however, it is not considered this is necessary to comply with the draft DCO, nor the CCR Regulations. To do so would be to stifle the efficiency of the plant in favourable conditions (which also tend to be when it is cold and the need for power is greatest). No such artificial limit is proposed in the draft DCO. It is also noted that the output can be measured at different points within a generating station. British Standard BS ISO 2314 sets out definitions for electrical power measurement and provides for the calculation of both "gross electrical power" (the gross output of the gas turbine generators measured at the generator terminals) and "net electrical power" (the net output of the generating station taking account of step-up transformer losses measured at the point of connection to the National Electricity Transmission System (which is also the point of sale)). The Applicant considers that the reference in the CCR Regulations to "rated electrical output" of a "combustion plant" is the gross output – this is reflected in the draft DCO (Schedule 1), and is similar to a number of previous DCOs for peaking plants, being the Wrexham Gas Fired Generating Station Order 2017 and the Hirwaun Generating Station Order 2015.
1.0.16.	The Applicant	**Missing Number:** At paragraph 3.11.20 of the ES [APP-042] there appears to be a missing number?	The Applicant acknowledges this and has compiled a Schedule of Corrections in Appendix 4.
1.0.17.	The Applicant	**Environmental Concerns in Relevant Representations (RRs):** Mr David Edwards, Mr Paul Northcote, Mawr Ward Councillor, Peter Rasbridge, Ms Kirsty Dando Thomas, Mr Mark Adams, Ms Alyson Adams and Ms Claire Thatcher [RR-001, 003, 004, 005, 015, 016, 017 and 020] respectively raise concerns regarding: • Noise pollution; • Air pollution; • Wildlife; • Dust; • Green belt; • Flooding; • Construction traffic; • Visual Impact and	The Applicant has responded to each of the Relevant Representations listed. Please see "The Applicant's Response to Relevant Representations" submitted for Deadline 1 on Friday 9 November.

Question number	Question to	Question	Response
		• Benefits to local people. Can the Applicant respond to each of the concerns raised in these RRs?	
1.0.18.	The Applicant	**Property Blight:** Mawr Ward [RR-004], Ms Kirsty Dando Thomas [RR-015] and Ms Alyson Adams [RR-017] all raise concerns regarding property blight. Can the Applicant respond to these concerns?	The Applicant has responded to the concerns raised by the Mawr Ward, Ms Kirsty Dando Thomas and Ms Alyson Adams in their Relevant Representations. Please see "The Applicant's Response to Relevant Representations" submitted for Deadline 1 on Friday 9 November.
1.1	**Alternatives**		
1.1.1.	The Applicant	**Feasibility Assessment:** At paragraph 6.2.19 of the Planning Statement [APP-007] the Applicant states *"a range of sites"* were looked at. Can the Applicant provide a suitably anonymised tabulated strategic, technical and environmental comparison of these sites against the Project site?	Chapter 5 of the ES and specifically section 5.2 sets out the factors which influenced the site selection decision made by the Applicant. APL is not in a position to provide the requested tabulated presentation of how individual sites were assessed, as the information on the sites considered is commercially sensitive. The site selection process was completed prior to the acquisition of APL by Drax Group plc. The intellectual property in relation to the other sites considered is not owned by Drax Group plc and remained with the previous owner of APL. Drax purchased a portfolio of four sites, the other three of which were considered alongside the application site. DCO applications have already been brought forward on those sites, as follows: Hirwaun Power Limited (granted in the form of the Hirwaun Generating Station Order 2015) Progress Power Limited (granted in the form of the Progress Power (Gas Fired Generating Station) Order 2015 Millbrook Power Limited (which is currently awaiting decision by the Secretary of State). Paragraph 2.2.1 of NPS EN-2 states that "*Factors influencing site selection by applicants for fossil fuel NSIPs are set out below. These are not a statement of Government policy, but are included to provide the IPC and others with background information on the criteria that applicants consider when choosing a site. The specific criteria considered by applicants, and the weight they give to them, will vary from project to project. The choices which energy companies make in selecting sites*

Question number	Question to	Question	Response
			reflect their assessment of the risk that the IPC, following the general points set out in Section 4.1 of EN-1, will not grant consent in any given case. But it is for energy companies to decide what applications to bring forward and the Government does not seek to direct applicants to particular sites for fossil fuel generating stations". The factors detailed in Chapter 5 of the ES in relation to Site Selection are consistent with the factors identified in part 5.2 of NPS EN-2. Paragraph 18 of Schedule 1 to the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (which are the applicable regulations for this Application, not the 2017 Regulations, see more on this point below) requires that the Applicant must include "*an outline of the main alternatives studied by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects*". The information set out in Chapter 5 of the ES fulfils this requirement.
1.1.2.	The Applicant	**Reasonable Alternatives:** How has the Applicant taken into account the requirements of section 14(1)d of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 on the assessment of reasonable alternatives?	The Project falls under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (EIA Regulations 2009) and not the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations 2017). This is because a scoping opinion was requested from the Secretary of State under the EIA Regulations 2009 before the commencement of the EIA Regulations 2017. This means that, in accordance with the transitional arrangements at Regulation 37 of the EIA Regulations 2017, the EIA Regulations 2009 will continue to apply to the Project. This is explained in paragraph 1.4.4 of the Environmental Statement (APP-042). Chapter 5 of the Environmental Statement (APP-042) provides an outline of the main alternatives studied by the Applicant and an indication of the main reasons for the Applicant's choice, taking into account the environmental effects. This meets the requirements set out in the EIA Regulations 2009.
1.1.3.	The Applicant	**Site Selection – Swansea Friends of Earth [RR-007] and Peter Rasbridge [RR-005]:** Can the Applicant respond to the points raised on site selection in these two RRs?	The Applicant has responded to the comments regarding Site Selection raised by Swansea Friends of the Earth and Peter Rasbridge in their respective Relevant Representations. Please see "The Applicant's Response to Relevant Representations" submitted for Deadline 1 on Friday 9 November.
1.2	**EIA Methodology**		
1.2.1.	The Applicant	**NTS Tables 1 and 2 [APP-020]:**	The generic guidelines within NTS Tables 1 and 2 (APP-020) have been developed from the EIA Significance Evaluation Matrix from the Institute of Environmental Management

Question number	Question to	Question	Response
		Can the Applicant provide a source for these “generic” guidelines?	and Assessment's (IEMA’s) Report – The State of EIA Practice in the UK (2011). This is to provide a generic guideline only, where topics do not have their own specific guidance. The Environmental Statement (APP042) contains topics which have topic-specific versions of the matrix, such as the Landscape and Visual Assessment which follows Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3) (Landscape Institute and Institute of Environmental Assessment and Management, 2013). Where there is a deviation from these generic guidelines due to the existence of topic specific guidance, this is outlined in the relevant chapter of the ES.
1.2.2.	The Applicant	**Classification of effects:** At paragraph 3.3.3 of the NTS [APP-020] it states: *“Generally, effects which are Major or Moderate are considered to be significant”.* In what cases are they considered to be not significant?	As a general rule within Environmental Impact Assessment (EIA), major and moderate effects are considered to be significant, whilst minor and negligible effects are considered to be not significant. However, professional judgement can also be applied, including taking account of whether the effect is permanent or temporary, its duration/frequency (if not already considered as a factor of magnitude) and / or its likelihood of occurrence. However, within the Environmental Statement no such adjustments to the assessments of significance have been made.
1.2.3.	The Applicant, CCS and NRW	**Table 4-6 Projects [APP-042] considered within the cumulative assessment:** Are CCS and NRW satisfied with the long list of projects in Table 4-6 of the ES? Projects 26 and 27 refer to 750644 and 675490 homes respectively?	The Applicant has a Statement of Common Ground (SOCG) with both CCS and NRW which confirm agreement on the cumulative long list presented within Environmental Statement able 4-6 Projects (APP-042). At the meeting held with NRW and CCS on the 6 February 2018 (See Minutes in Appendix 5), it was agreed that the cut-off point for including projects in the list was to be the 19 February 2018, which was the end of the Abergelli Power Project Phase 2 statutory consultation period. Please see Schedule of Corrections (Appendix 4) for Project 26 and 27 housing numbers. These should have referred to 644 and 490 homes respectively.
1.3	**Compulsory Acquisition, Temporary Possession and Other Land or Rights Considerations**		
1.3.1.	The Applicant	**Michael Edwards [RR-011], Rediplay Ltd [RR-012], Wynne Watkins [RR-014] and Abergelli Solar Ltd [RR-018]:** Can the Applicant address the points raised by these four Affected Parties (APs) in their respective RRs?	The Applicant has provided a response to the points raised by the four Affected Parties in the response to the Relevant Representation at sections 12, 13, 15 and 19.
1.3.2.	The Applicant	**Compulsory Acquisition (CA):** The Applicant is requested to complete the attached Objections Schedule with information about any objections to the compulsory acquisition proposals in the application and to make any entries or delete any entries that it believes would be appropriate, taking account of the positions expressed in relevant representations and	The Objections Schedule has been completed and is found in Annex 3 of this document. The request to complete it at each examination deadline is noted and updates will be provided.

Question number	Question to	Question	Response
		written representations, giving reasons for any additions or deletions. (See Annex A of this document). Annex A should be updated at each deadline during the Examination.	
1.3.3.	The Applicant	**Temporary possession:** The Applicant is requested to complete the attached Objections Schedule with information about any objections to the temporary possession proposals in the application and to make any entries or delete any entries that it believes would be appropriate, taking account of the positions expressed in relevant representations and written representations, giving reasons for any additions or deletions (See Annex A of this document).	The Objections Schedule has been completed and is found in Annex 3 of this document.
1.3.4.	The Applicant	**Statutory Undertakers (SU):** The BoR [AS-002] includes a number of SUs with interests in land. Can the Applicant: a) Provide a progress report on negotiations with each of the SSUs listed in the BoR, with an estimate of the timescale for securing agreement from them? Table 3 of the Statement of Reasons (SoR) [APP-010] should be updated at each Examination deadline. b) State whether there are any envisaged impediments to the securing of such agreements? c) State whether any additional SUs have been identified since the submission of the BoR as an application document?	The Applicant is in the process of negotiating with National Grid Gas plc, National Grid Electricity Transmission plc, Western Power Distribution (South Wales) plc, Dwr Cymru Cyfyngedig, Wales and West Utilities Limited and Abergelli Solar Limited. The position in respect of all statutory undertakers is summarised in the following paragraphs as they are largely similar. However, Annex 2 of this document sets out the current position for each statutory undertaker. The Applicant is in discussions with all statutory undertakers regarding the terms of the Protective Provisions to be included in the draft DCO. The Applicant is also in discussions regarding commercial side agreements that may be necessary between the Applicant and the statutory undertakers to provide for any further terms to be agreed between them. The Applicant does not envisage any impediments to securing agreement from the statutory undertakers. They are at differing stages reflecting the different interactions between the Applicant and the statutory undertaker, but, in each case, the Applicant is aiming to have the protective provisions and side agreements agreed and submitted to the Examination before the end of the 6 month examination period. The Applicant has not identified any additional SUs since the submission of the BoR as an application document.
1.3.5.	The Applicant	**Funding Statement:** The Applicant is reminded that Department for Communities and Local Government Guidance related to procedures for CA (September 2013) states that: Applicants should be able to demonstrate that adequate funding is likely to be available to enable the CA within the statutory period following the order being made, and that the	The estimated costs of acquiring compulsorily the necessary land and rights (i.e. the pink and blue land shown on the Land Plans (APP-057)) as well as obtaining the temporary use of land (i.e. the yellow land shown on the Land Plans (APP-057)) are £1.033m.

Question number	Question to	Question	Response
		resource implications of a possible acquisition resulting from a blight notice have been taken account of. The Funding Statement [APP-012] at paragraph 2.2.1 does not identify the CA costs separately from the project costs or explain how the figure for CA costs was arrived at. Explain the anticipated cost of CA, how this figure was arrived at, and how these costs are going to be met?	The estimate for CA costs is supplied on the basis of advice taken from the Applicant's land agents and reflects the application of the Compensation Code principles to the powers sought in the Draft Order. As set out in paragraphs 2.3.1 and 2.3.2 of the Funding Statement, the capital costs of the project, including the compulsory acquisition costs will be met by the release of funds by Drax Group plc to Abergelli Power Limited. The Applicant is a wholly owned subsidiary of Drax Group plc. A copy of the most recent audited accounts of Drax Group plc was appended to the Funding Statement to demonstrate that Drax Group plc has total net assets in excess of £1,700,000,000, which is more than ten times the estimated total project costs. The Applicant also notes that the draft DCO includes Article 34 which requires financial security to be put in place prior to the exercise of any powers of compulsory acquisition under the DCO, and that the financial security must be approved by the Secretary of State.
1.3.6.	The Applicant and CCS	**Funding:** The draft DCO [APP-014] includes Article 34 requiring security for CA costs (in an amount to be approved by the Secretary of State) to be put in place before any powers of CA may be exercised by APL. Are CCS content with the wording of this Article 34?	As set out in the Explanatory Memorandum, the Applicant considers that the wording of Article 34 (Guarantee) is suitable wording and has been used in previous made DCOs including the Wrexham Gas Fired Generating Station Order 2017. It provides that the undertaker must not exercise powers in relation to any land until a guarantee or an alternative form of security has been put in place in an amount to be approved by the Secretary of State. This ensures that no powers of compulsory acquisition can be exercised until the Applicant has demonstrated that the requisite funds have been secured to the Secretary of State's satisfaction.
1.3.7.	The Applicant	**Connection Agreement [APP-006][APP-009]:** Can the Applicant update the position in respect to connections to National Grid's electricity and gas infrastructure?	The Applicant confirms that the position in respect to connections to National Grid's electricity and gas infrastructure are as described by the Grid Connection Statement (APP-006) and the Gas Connection Statement (APP-009), submitted with the DCO Application in May 2018. In relation to the Grid Connection, APL received an offer of a Bilateral Connection Agreement and Construction Agreement from NGET on 23 February 2018 (the Connection Agreement) to connect the Generating Equipment to National Electricity Transmission System (NETS). The Connection Agreement offer provides the Generating Equipment with an export capacity of 299 MW and a connection date to the NETS of 30 September 2022. The Applicant can confirm that it entered into the Connection Agreement on 23 May 2018 thereby securing an agreement to export the output of the Generating Equipment to the NETS.

Question number	Question to	Question	Response
			With regards to the Gas Connection, the Applicant will submit a connection application to National Grid Gas in 2019 for the Minimum Offtake Connection which will facilitate the Gas Pipeline connection to the National Gas Transmission System. Upon submission of the application, National Grid Gas will have 6 months to provide APL with a connection offer at which point the Applicant will have a further 3 months to decide whether to accept the terms of the offer. Upon acceptance, APL will enter into a Design and Build Agreement (DBA) with National Grid Gas for the construction of the new Minimum Offtake Connection. The DBA will set out the cost and timescales for the delivery of the Minimum Offtake Connection. These timescales will be designed to meet the target first operations date of 2022.
1.3.8.	The Applicant	**Affected Parties:** Can the Applicant provide an update of Table 2 in the Statement of Reasons [APP-010] at each deadline in the Examination?	The Applicant has provided an update of Table 2 in the Statement of Reasons as Annex 1 to this document.
1.4	**Air Quality and Emissions**		
1.4.1.	The Applicant	**Table 6-6 [APP-042]:** First item in Table refers to Section 0?	This is a cross-referencing error. Please see Schedule of Corrections in Appendix 4.
1.4.2.	NRW and the Applicant	**Worst Case Scenario:** Paragraphs 6.4.40 and 6.4.41 of the ES [APP-042] states: *"In relation to long term (annual mean) concentrations assuming full load operation for the year will be unrealistic. Therefore, long term impacts were estimated by scaling the results for continuous full load operation by the likely operating time i.e.* *2,250 (maximum hours of operation)* *8,760 (total hours in a year) = 0.257".* Does NRW believe that this approach is appropriate? Paragraph 6.4.43 of the ES states: *"The assessment of daily mean concentrations, applicable to the ecological assessment falls between the cases for long and short-term concentrations.*	**Annual impact** The annual impact is calculated by the model based on the average of the hourly result predicted for the year assuming the plant will operate for 8,760 hours. To take account of the fact that the plant will actually only operate for a maximum of 2,250 hours in any one year the annual average can, therefore, be factored to reflect that for 74% of the year (6,510 hours) the plant will not operate and will therefore have no emissions during that time. See further the Applicant's Response to question 1.0.3 in relation to how this limit will be achieved through the environmental permit. **Short-term impacts** When assessing short-term impacts, it is not possible to determine at what times of day/year the plant will operate or under what meteorological conditions. This means that the short-term results cannot be adjusted/factored to reflect the actual maximum operating hours and still ensure that the impacts under worst-case meteorological conditions are assessed.

Question number	Question to	Question	Response
		Nevertheless, to ensure a conservative assessment daily mean concentrations are assessed on the basis of continuous operation." What does the Applicant consider as the worst case to be in terms of "continuous operation", 2,250 or 1,500 hours per annum?	To ensure that the short-term effects of the plant are fully accounted for, the modelling assumed that the plant will operate continuously throughout the year, i.e. 8,760 hours (8,784 during leap years), which is significantly more than the actual maximum of 2,250 hours. The predicted maximum values have then been presented within the ES (APP-042) with no further adjustment, with the exception for hourly NO2 for which the 99.79th percentile of the 8,760 hours is presented. The 99.79th percentile is presented for comparison with the Air Quality Strategy (AQS) objectives and EU limit values, which allow 18 exceedences of the objective/limit per year. The modelling has shown that even should the plant operate during all hours of the year, i.e. under all meteorological conditions that occur over the 5 years of meteorological data used, the impacts on receptors are negligible. **Overall position** Chapter 6 of the ES therefore assumes the worst-case in terms of "continuous operation" of 8,760 hours when assessing short-term impacts rather than the actual anticipated operating hours which will be a maximum of 2,250 within a single year, or an average of 1,500 over a 5 year period.
1.4.3.	NRW	**Modelling of Impacts during Start up and Shut down:** Paragraph 6.4.44 of the ES [APP-042] states: *"The start-up and shut down periods do not warrant specific assessment for the Project and impacts during these periods are robustly considered in the assessment by the assumed 2,250 hours of full load operation for the Plant, i.e. maximum annual operations rather than the anticipated normal operating hours of 1,500 per year."* Does NRW believe that this approach is appropriate?	The Applicant confirms that the approach to start up and shut down periods as stated in Paragraph 6.4.44 of the ES (APP-042) is appropriate. The Applicant has a Statement of Common Ground with NRW that confirms that they are in agreement with the methodology of the Air Quality Assessment.
1.4.4.	NRW and the Applicant	**Critical Load Assessment:** Paragraph 6.4.76 of the ES [APP-042] states: *"The assessment against Critical Loads has been carried out in accordance with AQTAG06 'Technical guidance on detailed modelling approach for an appropriate assessment for emissions to air' (Ref. 6.29). However, it should be noted that this does not provide definitive advice on interpreting the likely effects on different habitats of changes in air quality."* Where is the definitive advice on interpreting effects on ecosystems provided?	There is no definitive advice in terms of a single published reference which sets out how to interpret the impacts of an industrial source on sensitive ecological receptors. There are a number of documents that set out how the assessment should be undertaken, including: 1. The Environment Agency's "Air emissions risk assessment for your environmental permit". This sets out targets for the protection of conservation areas, and within what distances from the site different designated sites should be assessed; 2. AQTAG06 'Technical guidance on detailed modelling approach for an appropriate assessment for emissions to air'. This provides a methodology to be used in calculating deposition rates but does not state how the calculated values should be interpreted; and 3. The Air Pollution Information System (APIS). This online tool provides Critical Loads to be used when assessing the impacts of a development on a site and for acid deposition

Question number	Question to	Question	Response
			provides a Critical Load Function calculator which can be used to determine the effects of a development in comparison to the Acid Critical Load. None of these provide a definitive approach or value that sets out if an impact is significant or not. The interpretation of impact is, therefore, left to professional judgment by experienced ecologists to determine if the effects of the development are likely to be significant taking into account the type of site, its existing condition and the habitats/species present. For the Project the consideration of the effects of the proposed plant on ecological receptors is presented within the NSER (APP-066), which concludes that no significant effects are likely. There is a Statement of Common Ground (SOCG) between the Applicant and NRW which will be submitted at Deadline 1, confirming agreement on the NSER.
1.4.5.	NRW and CCS	**Human Health:** The effects on human health of power station aerial emissions are presented in Tables 6-33 and 6-34 of the ES [APP-042]. Public Health England in their relevant representations [RR-009] state that they are satisfied that the project will not pose any significant risk to human health. Are NRW and CCS satisfied with the conclusions of the ES with regard to human health?	
1.4.6.	The Applicant	**Cumulative effects:** Paragraph 17.3.3 of the ES [APP-042] states: *"IEMA's guidelines recognise two major sources of cumulative effects:* • ***Intra-project effects*** *– These occur where a single receptor is affected by more than one source of effect arising from different aspects of the Project. An example of an intra-project effect would be where a local resident is affected by dust, noise and traffic disruption during the construction of a scheme, with the result being a greater nuisance than each individual effect alone; and* • ***Inter-project effects*** *– These effects occur as a result of a number of past, present or reasonably foreseeable proposed developments, which individually might not be significant, but when considered together could create a significant cumulative effect on a shared receptor, and could include developments separate from and related to the Project."*	The Applicant recognises that heading 6.10 titled *"Cumulative and In -combination Effects"* should read "Cumulative Effects" in line with the other chapters of the ES (APP-042). Please see Schedule of Corrections in Appendix 4. Cumulative effects are also known as inter project effects; and in-combination effects are also known as intra project effects.

Question number	Question to	Question	Response
		The cumulative effects assessment for the Project follows the guidelines as set by the Institute of Environmental Management and Assessment (IEMA). However, the heading 6.10 of the ES is titled: *"Cumulative and In -combination Effects"* How are cumulative and in-combination effects related to intra and inter project effects?	
1.4.7.	CCS	**Cumulative Effects Construction:** Paragraph 6.10.1 of the ES [APP-042] states: *"There are no other permitted or proposed developments within the study area which may result in any air quality impacts during construction. As such, no cumulative construction effects with other project are anticipated."* Given the 34 projects listed in Table 4-6 of the ES does CCS concur with the Applicants view?	
1.5	**Noise and Vibration**		
1.5.1.	The Applicant and CCS	**Use of the National Planning Policy Framework (NPPF) Guidance in Wales:** The ES [APP-042] at paragraph 7.3.41 states (and re-iterated at paragraph 7.3.45 for the supporting PPGs): *"…….the NPPF is not directly applicable in Wales but does offer guidance with a relevance to the Project particularly with reference to the evaluation of Significant Observable Adverse Effect Level (SOAEL) and Lowest Observable Adverse Effect Level (LOAEL) levels".* Why does the Applicant believe it to be appropriate to apply NPPF guidance to a noise assessment in Wales? What is the CCS view? The ExA notes that the NPPF guidance is not applied in any other assessment chapters.	The ES (APP-042) has undertaken a review of all guidance that provides useful and relevant information to inform the assessment. The National Planning Policy Framework (NPPF) for England includes guidance on the derivation of noise limits based on Significant Observable Adverse Effect Level (SOAEL) and Lowest Observable Adverse Effect Level (LOAEL) levels. The Welsh planning guidance does not include this information; therefore these technical notes within the NPPF have been used. Methodology for the noise assessment was agreed with CCS Environmental Health Officer, and no comments on this approach were received during consultation. The information was used to inform the assessment of potential effects of the sound emissions from the Project. There is a Statement of Common Ground (SOCG) between the Applicant and CCS which will be submitted at Deadline 1. The noise assessment methodology and use of guidance has been agreed by CCS.
1.5.2.	The Applicant	**Technical Advice Note (TAN) 11 – A Welsh Government Document:** How has TAN 11 been taken into account in the Noise Assessment?	Technical Advice Note (TAN) 11 – 'A Welsh Government Document' has been taken into account as one of the sources of guidance available. For the assessment of industrial noise, TAN 11 suggests, but does not require, the use of BS 4142 and BS 8233. These

Question number	Question to	Question	Response
			are the standards that have been used to assess the noise from the Project within the ES (APP-042). Therefore the approach suggested by TAN 11 has been followed.
1.5.3.	The Applicant and NRW	**A1 EPR Permit:** Table 7-4 of the ES [APP-042] refers to an A1 EPR Permit. Will this be a "Standard Rules" or "Bespoke" permit?	The EPR Permit will be a Bespoke Permit.
1.5.4.	The Applicant and CCS	**February 2018 Noise Survey:** The February 2018 survey failed to access NSR2 and NSR3. What is the view of CCS on this?	Please see response to question 1.5.6 for details on Noise Sensitive Receptor (NSR) 2 and NSR3.
1.5.5.	The Applicant	**Incorrect cross reference:** Paragraph 7.7.6 of the ES [APP-042] incorrectly cross references to paragraph 3.11.19. It should be 3.11.21.	The Applicant acknowledges this error. Please see Schedule of Corrections in Appendix 4.
1.5.6.	The Applicant and CCS	**Table 7-25 of ES [APP-042]:** Table 7-25 describes the Noise and Vibration Summary of Effects Arising during Operational Phase for NSR1-5. Table 3 of Requirement 25 of the draft DCO [APP-014] only refers to NSR 1,4 ,5 and 6. Can the Applicant explain the reason for this? What is the CCS view?	Detailed measurements at Noise Sensitive Receptor (NSR) 2 and NSR3 were not undertaken during the 2018 survey as access could not be arranged at the time of survey. As detailed in the ES (APP-042), it was considered that NSR1 and NSR4 were representative of the highest potential impacts to the south and east of the Project Site and could therefore represent NSR2 and NSR3 as well, with certain qualifications. This conclusion was based upon the proximity of the receptors to the power plant noise sources and the distribution of background sound across the area. NSR1 and NSR4 are closer to the power plant than NSR2 and NSR3, therefore the plant sound levels at NSR2 and NSR3 will be lower than the levels at the two sites used within the noise assessment. NSR2 and NSR3 are closer to major background sound sources, therefore the background sound levels at NSR2 and NSR3 are expected to be similar to or higher than those at NSR1 and NSR4. The assessment is based on the comparison of plant sound with background sound therefore the critical locations will be NSR1 and NSR4, and the effects at the other two locations are therefore predicted to be lower. The Applicant is therefore confident that NSR2 and NSR 3 are adequately represented by the assessments at NSR1 and NSR4.

Question number	Question to	Question	Response
			It therefore follows that there is no need for Requirement 25 to provide noise levels at NSR2 or NSR3, since if the levels specified in Requirement 25 for NSR1 and NSR4 are met (which ensures no significant effects), then similarly there will be no significant effects at NSR2 and NSR3.
1.6	**Biodiversity, Ecology and Natural Environment**		
1.6.1.	The Applicant	**Ecological Mitigation Area:** Paragraph 4.3.1 of Appendix 3.4 of the ES [APP-036] refers to an "Ecological Mitigation Area", Work No. 4, shown on ES Figure 3.6c [APP-024]. Can the Applicant confirm that the 3 purple ellipses, native tree planting, wet meadow and acid grassland, hedgerow with trees, woodland planting and attenuation ponds represent the full extent of the Ecological Mitigation Area?	The 'Ecological Mitigation Area' (as the defined term is used in the Application), is confined to the 'tear-drop' shaped area of land to the south of the Generating Equipment Site, being Work Number 4 within the Works Plans (APP-053). Other areas and works (such as the 3 purple ellipses), whilst for ecological mitigation and enhancement, are not part of the Ecological Mitigation Area.
1.6.2.	The Applicant	**Ecological Mitigation Area:** At paragraph 5.6.1 of the ES [APP-042] states: *"An area has been set aside within the Project Site boundary to be available for ecological mitigation. The location and area of mitigation required was consulted on during Phase 2 consultation, and an outline Landscape and Ecology Mitigation Plan (LEMP) was produced. A finalised Landscape and Ecology Mitigation Strategy has now been prepared to show the extent of the mitigation required as presented in Appendix 3.4."* Can the Applicant point to where in the draft DCO [APP-014] the commitments in Appendix 3.4 [APP-036] are explicitly secured e.g. paragraph 1.1.4, biodiversity mitigation, screening; paragraph 1.1.6, 25 year management period?	The commitments set out in paragraph 1.1.4 and 1.1.6 of Appendix 3.4 (Outline Landscape and Ecology Mitigation Strategy (LEMS), APP-036) are explained in more detail in the LEMS in section 4. Requirement 3(5) of the draft DCO (APP-014) sets out the obligation on the Applicant to maintain the landscape planting in accordance with the approved landscape plan, which must be substantially in accordance with the outline LEMS submitted with the DCO Application. The biodiversity mitigation is secured via Requirement 9, which requires an ecological management plan to be approved and implemented. The ecological management plan must be substantially in accordance with the outline LEMS submitted with the DCO Application. Both the ecological management plan and the landscaping plan must include an implementation timetable, which once approved must be complied with. The management period referred to in the LEMS is secured in Requirement 3(5) (including five yearly reviews) – Requirement 3(5) requires ongoing management over the operational life of the Project. Note that the updated version of the LEMS submitted by the Applicant at Deadline 1 clarifies that the maintenance and management plan will cover the operational design lifetime of the Project (paras 1.1.6 and 4.7.1). See further the Applicant's response to question 1.9.2.

Question number	Question to	Question	Response
1.6.3.	The Applicant	**Embedded Mitigation (EM):** At paragraph 2.4.2 of the NTS [APP-020] and dedicated sections of each assessment chapters in the ES [APP-042] the OCEMP, ODS, Stack Height, EMA, OLEMP and OLEMS are all described as EM. Can the Applicant confirm that this is their current view?	The Applicant's view remains as set out in the NTS. Embedded Mitigation is either (1) implicit in the design of the Project and is where the design has been amended in order to avoid likely significant adverse effects, such as the ODS, Stack Height, EMA or (2) it is routinely used, prepared or implemented during construction and operational phases through standard processes, control measures or within best practice guidance, such as the implementation of a CEMP, LEMP and LEMS. Additional mitigation has been identified and is also included in the LEMS in order to provide a holistic approach to landscape and ecology mitigation. The Schedule of Mitigation (Appendix A within ES Appendix 3.1 CEMP (APP-036) differentiates between embedded and additional mitigation.
1.6.4.	The Applicant	**EM:** Paragraph 3.11.1 of the ES [APP-042] states: *"Mitigation which is either implicit in the design of the Project or its construction and operation through standard control measures routinely used, such as working within best practice guidance during construction, is known as embedded mitigation. This embedded mitigation has been assumed for the purposes of this ES to be in place from the outset, as it is mitigation without which the Project would be unlikely to be granted consent or allowed to commence. This ES has therefore assessed the likely significant effects of the Project including embedded mitigation."* Would the findings of the NSER [APP-066] still remain the same if this mitigation was not factored into the assessment?	The findings of the NSER would remain the same if this mitigation was not considered, for the following reasons. The only mitigation measures referenced in the NSER (APP-066) are those regarding water quality (paragraph 1.3.9) which are required in order to comply with unrelated water quality protection legislation, specifically the Environmental Damage (Prevention and Remediation) (Wales) Regulations 2015 and Environmental Permitting (England and Wales) Regulations 2016. These measures would convey incidental protection to riverine European sites but have not been introduced to avoid or reduce effects on any European sites. A conclusion of no likely significant effect would be reached without these measures due to the very small volume of treated effluent produced which will be removed from site by a specialist contractor and the very large dilution factors that would be experienced by any wastewater from the Project travelling the 12 km to the nearest hydrologically connected European site.
1.6.5.	The Applicant and CCS	**Trees and hedgerows:** At paragraph 2.11.63 of the ES [APP-042] it states: "Draft Policy ER 11 states that "*development that would adversely affect trees, woodlands and hedgerows of public amenity, natural/cultural heritage value, or that provide important ecosystem services will not normally be permitted.*" How does the Applicant believe it conforms with draft policy ER 11? What is the view of CCS?	The ES (APP-042) concluded no significant adverse effects with the implementation of the mitigation measures outlined in the LEMS (ES Appendix 3.4, APP-036) in relation to any loss of features outlined in Draft Policy ER 11. The LEMS includes the planting of replacement and additional trees, and replanting and reinstating hedgerows (including the replacement of an Important/historical hedgerow along the Gas Connection), which would result in an overall environmental net gain. These conclusions therefore mean that the Proposed Development complies with the draft Policy.

Question number	Question to	Question	Response
1.6.6.	CCS and NRW	**Table 8-6 [APP-042] Use of 2014 Survey Data:** Are CCS and NRW content with the arguments put forward for the use of 2014 survey data in the ecological assessment?	Cross ref to previous comments in PEIR on survey data
1.6.7.	NRW and the Applicant	**ECJ Rulings on Mitigation in HRA Screening:** In April 2018, the European Court of Justice (ECJ) issued a decision in the case of *People Over Wind, Peter Sweetman v Coillte Teoranta (C-323/17).* The ruling confirmed that proposed mitigation measures cannot be taken into account for the purposes of screening under the UK Habitats Regulations, which give effect to the EU Habitats Directive (92/43/EEC) (paragraph 1.1.8 [APP-066]. a) Does NRW have a view on the significance of these rulings for the Applicant's NSER [APP-066]? b) What is the Applicants view?	The ruling confirms that measures intended to 'avoid or reduce' the adverse effects of a project on European sites cannot be taken into account in reaching a conclusion on likely significant effects (i.e. the screening stage of the Habitats Regulations process). There are no measures in this scheme that are intended to avoid or reduce the effects of the project on European sites. As set out in the Applicant's response to Question 1.6.4 above, the conclusions of the NSER (APP-066) would remain as no significant effect without the measures identified in that question. The *People Over Wind, Peter Sweetman v Coillte Teoranta* case therefore does not affect the Applicant's NSER and its conclusions.
1.6.8.	NRW and CCS	**Table 8.13 Sensitivity of Ecological Features [APP-042]:** Do NRW and CCS agree with the evaluation of sensitivity by the Applicant?	
1.6.9.	NRW	**NOx Deposition on European Sites:** At paragraph 8.7.127 of the ES [APP-042] it is concluded the Project's Process Contribution (PC) of NOx, and consequently the PC of nitrogen deposition and nitrogen acidity deposition are very small and so low as to be effectively zero (less than 0.01 kg/N/ha/yr and less than 0.01 keqH+/ha/yr, respectively). For all sites, the PC does not cause Critical Loads to be exceeded. Does NRW agree with this conclusion?	
1.6.10.	NRW and the Applicant	**Crymlyn Bog SAC and Ramsar:** At paragraph 8.7.127 of the ES [APP-042] it concludes that in the case of Crymlyn Bog SAC and Ramsar site where the Critical Load for nitrogen and nitrogen acid is already in exceedance, the influence of nitrogen and nitrogen acid from the Project is not at a level where it would cause a significant effect. Do NRW agree with this conclusion?	The modelling data for the site summarised in NSER (APP-066) Appendix A Table 1.9 illustrates that the contribution of the project (PC) to annual average NOx concentrations at the SAC is essentially zero, being too small to appear in the model (reported as 0.00 μgm^{-3}). NOx is the only pollutant emitted by the project that would contribute to nitrogen and acid deposition. Table 1.10 therefore shows that the contribution of the scheme to nitrogen deposition at this site is also effectively zero (0.001 kgN/ha/yr). The same can be said for acid deposition (Table 1.11) which is also effectively zero (0.00004 keq/ha/yr). The Project

Question number	Question to	Question	Response
		Will the conservation objectives of the SAC be hindered by the additional PC of the Project?	will therefore play no part in retarding the progress of the SAC to favourable conservation status and will thus play no part in hindering the conservation objectives of the SAC.
1.6.11.	NRW	**Carmarthen Bay SAC and Burry Inlet SAC and Ramsar:** At paragraphs 8.7.129 and 8.7.130 of the ES [APP-042] it concludes that operational effects of hydrological and aerial emissions on the above 2 sites will be negligible. Does NRW agree with this conclusion?	
1.6.12.	The Applicant	**5 Years Monitoring:** At paragraphs 8.8.36 to 8.8.38 of the ES [APP-042] there is commitment to *"at least five years monitoring".* Can the Applicant point to where in the draft DCO [APP-014] this commitment is secured?	Requirement 3, Schedule 2 of the DCO sets out that a landscaping plan must be substantially in accordance with the landscaping mitigation proposals set out in the outline Landscape and Ecology Mitigation Strategy (LEMS) (APP-036). A revised version of the LEMS has been submitted by the Applicant at Deadline 1. Paragraph 4.7.1 of the outline landscape and ecology mitigation strategy (APP-036) sets out that within the first five years of planting, all plants found to be dead or dying will be replaced.
1.6.13.	The Applicant	**NSER [APP-066]:** At paragraph 1.1.15 it states the Project site is approximately 30.66Ha. At paragraph 1.25 of the SoR [APP-010] it states the Order Land is 35.52Ha. Can the Applicant explain this difference?	The Applicant confirms that the correct area is 35.52 ha, and this is therefore amended in Appendix 4, Schedule of Corrections.
1.6.14.	The Applicant	**Ashdown Forest Judgement:** At paragraph 1.3.21 of the NSER [APP-066] the Applicant refers to this judgement i.e. Wealden District Council v Secretary of State for Communities and Local Government and others, 2017 [EWHC] 351 http://www.bailii.org/ew/cases/EWHC/Admin/2017/351.html Can a copy of this judgement be provided to the Examination?	*Wealden District Council v Secretary of State for Communities and Local government and others* 2017 [EWHC] 351 is now included in this document as Appendix 6.
1.6.15.	The Applicant	**Table 1-6 NSER [APP-066]:** Distances to stack of European Sites in Table 1-6 do not tally with Tables 1-3, 1-4 and 1-5 [APP-066]?	The distance from the Project Site to designated sites are estimated in Tables 1-3, 1-4 and 1-5 (APP-066) which are in line with those presented in the ES (APP-042). Table 1-6 NSER (APP-066) gives exact distances from the stack to each designated site.

Question number	Question to	Question	Response
1.6.16.	The Applicant	**NSER [APP-066]:** Can the Applicant explain how the decision to exclude Likely Significant Effects (LSE) from construction dust has taken into account the worst case with respect to the extent of effects – including the anticipated extent of vehicle movements?	The most significant potential dust effect on European sites would arise from dust smothering of vegetation. This can occur up to 200 m from significant dust generating activities. The nearest European site is the Crymlyn Bog Special Areas of Conservation (SAC) and Ramsar which is 6.7 km to the south east of the Project Site. There is no construction work or vehicle movements associated with the Project that may generate significant dust within 200 m of any European sites.
1.6.17.	The Applicant	**NSER [APP-066]:** Can the Applicant provide evidence supporting the anticipated 'nominal short term change' which had led to the decision to exclude potential LSE from traffic emissions from the screening assessment?	The principal effect of traffic emissions on vegetation is via changes to annual average NOx concentrations and resulting annual average nitrogen deposition. In terms of traffic volume, only changes in Annual Average Daily Traffic (AADT) will affect the annual average rate of nitrogen deposition. Experience of other modelling exercises on equivalent sites and Nationally Significant Infrastructure Projects indicates that to materially affect annual average nitrogen deposition rates within 200m of the road, the increase in AADT would have to be very much greater than that predicted for the Project. No changes of this magnitude are expected on any roads within 200 m of any European sites associated with construction or operation of the Project, and therefore potential LSE from traffic emissions can be robustly excluded from further consideration.
1.6.18.	NRW and CCS	**NSER [APP-066]:** Are NRW and CCS satisfied that: a) the study area of 10km is acceptable; b) that the correct sites and features have been identified; c) that the appropriate potential LSE have been identified; d) they are in agreement regarding the scope and methodology of the in-combination assessment and e) they agree with the conclusions of the NSER?	
1.6.19.	The Applicant	**NSER [APP-066]:** Can the Applicant revisit the matrices and ensure that the footnotes are accurate and that where applicable, specific references to supporting evidence in the ES or draft CEMP are provided?	The footnotes within the matrix of the NSER (APP-066) have been updated, with an updated version submitted in Appendix 7.

Question number	Question to	Question	Response
1.6.20.	NRW	**NSER [APP-066]:** Are NRW content that the Applicant has identified the correct qualifying features for the sites presented in the Matrices?	
1.6.21.	The Applicant	**NSER [APP-066]:** Can the Applicant explain whether: a) monitoring measures will be detailed in the CEMP, SWMP, or otherwise secured for example in the DCO; b) the purpose of these measures; and c) details of any proposed remedial/corrective measures should monitoring indicate the need?	The NSER has concluded that no LSE are likely, and therefore no monitoring specifically with regard to the European sites is required.
1.6.22.	The Applicant	**NSER [APP-066]:** Can the Applicant provide a Word version of the NSER and Matrices to the Examination?	The Applicant confirms that Word versions of the NSER and Matrices have been submitted for Deadline 1,
1.7	**Draft Development Consent Order (DCO)**		
	Annexe G to the Rule 6 Letter [12/09/18] provided notice of an Issue Specific Hearing (ISH) on the draft DCO which was held on Wednesday 10/10/18 (ISH1). Annexe H to that letter set out a schedule of issues and questions for Examination at ISH1. The Examination timetable provides that matters raised orally in response to that schedule are to be submitted in writing by **Deadline 1: Friday 9 November 2018**. Comments on any matters set out in those submissions are to be provided by **Deadline 2: Friday 30 November 2018**. IPs who participated in ISH1 and consider that their issues have already been drawn to the ExA's attention do not need to reiterate their issues in responses to the question below. Matters set out in Deadline [1] written submissions arising from ISH1 are best responded to in Deadline [2] comments rather than in responses to the following questions, which aim to capture matters that were not raised at ISH1.		
1.7.1.	The Applicant	**DCO Drafting [APP-014]:** Can the Applicant confirm that the submitted draft DCO: • has been drafted using the Statutory Instrument (SI) template[1];	The Applicant can confirm that the submitted draft DCO was drafted using the Statutory Instrument Template. A word copy and a validation report were submitted with the pdf copy of the draft DCO when the application was submitted.

[1] All SIs share a common format for which purposes the Office of Public Sector Information produces a special template.

Question number	Question to	Question	Response
		• follows guidance and best practice for SI drafting (for example avoiding "shall/should") in accordance with the latest version of guidance from the Office of the Parliamentary Counsel and • follows best practice drafting guidance[2] from the Planning Inspectorate and the Departments in Advice Note 15 – Drafting development consent orders Can the Applicant ensure that if amended versions of the DCO are submitted as the Examination progresses all internal references and legislative footnotes are checked and updated as necessary?	The latest version of the guidance from the Office of the Parliamentary Counsel was published in July 2018, which post-dates the submission of the Application. The Applicant has reviewed the latest version of the guidance and can confirm that the draft DCO submitted at Deadline 1 follows the guidance from the Office of Parliamentary Counsel. The latest version of Planning Inspectorate Advice Note 15 was also published in July 2018, post-dating the submission of the Application. The Applicant has reviewed the latest version of the Advice Note and can confirm that the draft DCO submitted at Deadline 1 follows the drafting guidance in Advice Note 15. The Applicant confirms that the legislative footnotes and internal references have been checked prior to submission of the revised draft DCO for Deadline 1, and the Applicant will continue to check the footnotes and references remain correct as the Examination progresses.
1.7.2.	The Applicant	**Permitted Preliminary Works:** At paragraph 3.7.3 of the ES [APP-042] the Applicant refers to "permitted preliminary works". Can the Applicant point to where these works are defined in the draft DCO [APP-42]?	The permitted preliminary works referred to in the ES are those activities and works which are excluded from the definition of "commence" in the draft DCO, namely: "*operations consisting of environmental surveys and monitoring, investigations for the purpose of assessing ground conditions (including investigations necessary for the discharge of requirements 14 (site investigation), 15 (mineral resources survey) and 16 (peat management plan)) receipt and erection of construction plant and equipment, erection of any temporary means of enclosure, the temporary display of site notices or advertisements*". Paragraph 3.7.3 of the ES describes the works that considered in the ES to be the preliminary enabling works which would need to take place prior to discharge of requirements in the following terms: "*This would include treatment of invasive species, assessment of ground conditions and erection of temporary means of enclosure, site notices and receipt of construction equipment."* The drafting in the draft DCO is considered by the Applicant to be necessary in order for it to be possible for the Applicant to provide the local planning authority with the necessary information to allow the proper consideration and discharge of Requirements 8, 10, 11, 12, 14, 15 and 16, each of which require the carrying out of environmental surveys or investigations on site.

[2] If relevant, the Applicant should justify why Advice Note 15 has not been followed.

Question number	Question to	Question	Response
			The environmental surveys and ground conditions investigations required to be carried out to discharge the pre-commencement requirements are therefore excluded from the definition of “commence” to allow the requirements to be effectively discharged and full information to be available before the authorised development begins. Requirement 10 of the draft DCO requires survey and remediation for invasive species to be completed for the relevant numbered work before work may commence on Work numbers 3, 4 and 5. It is not considered that the treatment of invasive species would constitute “development” within the meaning of section 32 of the Planning Act 2008 and section 55 of the Town and Country Planning Act 1990, and so this was not explicitly excluded from the definition of “commence”.
1.7.3.	CCS	**Commencement Article 2:** Article 2 defines 'commencement' to exclude investigations for the purpose of assessing ground conditions (including investigations necessary for the discharge of requirements 14 (site investigation), 15 (mineral resources survey) and 16 (peat management plan)) receipt and erection of construction plant and equipment, erection of any temporary means of enclosure, the temporary display of site notices or advertisements. Do CCS consider it appropriate to allow for the early completion of this work (without triggering the requirements set out in Schedule 2 of the Order)?	Please see the Applicant's comments in response to question 1.7.2.
1.7.4.	The Applicant	**Undertaker and Benefit of the Order:** The "undertaker" is defined in Article 2 as APL, as promoter of the scheme, and anyone who has the benefit of the Order pursuant to Articles 6 and 7. Current practice in DCOs is to limit the definition to a specific undertaker without the reference to ‘any other person …’ The benefit of the order (Article 6) and transfer of benefit (Article 7) should also be specific to named undertakers. Can the Applicant redraft in line with recent practice?	Articles 6 and 7 have been updated by the Applicant in the revised draft DCO submitted at Deadline 1. Article 6 is now specific to the named undertaker, Abergelli Power Limited. The definition of "undertaker" no long contains the reference to "any other person" Article 7 has also been updated to reflect the recent practice. The Applicant has had regard to the equivalent drafting in The Eggborough Gas Fired Generating Station Order 2018, as the most recently made DCO in relation to a generating station project.
1.7.5.	The Applicant	**Article 17 (*Authority to survey and investigate the land*):**	As set out in paragraph 31 of the Explanatory Memorandum (APP-013), in order to comply with the requirements it may be necessary to undertake surveys on land outside of the

Question number	Question to	Question	Response
		This allows the undertaker to survey and/or investigate land including bringing equipment onto the land and making trial holes. The power is subject to a number of conditions including a requirement for 14 days' notice to be given and is subject to the payment of compensation. The power extends to land *"which may be affected by the authorised development"* as surveys may need to be undertaken on such land to monitor the impacts of the authorised development (for example noise monitoring at residential receptors [APP-042]). a) Can the Applicant clearly identify which land may be covered by this Article? The Article also applies in subsection (6), section 13 of the Compulsory Purchase Act 1965 (refusal to give possession to acquiring authority) thereby providing an enforcement mechanism (by way of a warrant) where entry onto land under the article is refused. The Applicant argues this is considered necessary so that there is no delay in the implementation of the authorised development. b) Can the Applicant elaborate further on this justification of the use of Section 13 of the 1965 Act?	order limits. For example, the locations specified in the draft DCO for monitoring noise at residential receptors specified in Requirement 25 may be outside of the order limits, or to investigate ground stability issues, it may be necessary to access land outside of the order limits. As such, it is necessary to extend the power beyond the order land to include "land which may be affected by" the DCO. The Applicant will always try to obtain voluntary access to land to carry out surveys. However, if access to such land is refused, a statutory power is required to allow the Applicant to carry out the Project and to prevent the Applicant from being in breach of Requirement 25 in Schedule 2 of the draft DCO. Such a breach would constitute an offence pursuant to s161 of the PA 2008. This wording is included in the model provisions and has precedent in the Progress Power (Gas Fired Power Station) Order 2015, the Meaford Gas Fired Generating Station Order 2016, the Wrexham Gas Fired Generating Station Order 2017 and the Eggborough Gas Fired Generating Station Order 2018. As set out in paragraph 31 of the Explanatory Memorandum (APP-013), sub-paragraph (7) of Article 17 (authority to survey and investigate land) applies section 13 of the Compulsory Purchase Act 1965, thereby providing an enforcement mechanism (by way of a warrant) where entry onto land under the article is refused. The use of section 13 of the 1965 Act is justified so that a warrant can be obtained to ensure access in the event that the landowner prevents access for surveys. In the absence of a suitable enforcement procedure, the undertaker may be left in breach of the requirements with no mechanism to resolve the dispute other than via potentially lengthy litigation with the landowner. The existing procedure in section 13 of the Compulsory Purchase Act 1965 is considered by the Applicant to represent a proportionate mechanism to allow any dispute over the entitlement of the undertaker to take access to land for surveys to be resolved swiftly by reference to the Magistrates' court, using an existing procedure which is designed to consider and balance the interests of the undertaker and the interests of the affected landowner.
1.7.6.	The Applicant	**Article 35 Felling or Lopping of Trees and Removal of Hedgerows:** Can the Applicant confirm that the hedgerow A-A identified in the Hedgerow Plan [APP-055] is not an "important hedgerow"?	The Applicant confirms that hedgerow A-A on the Hedgerow Plan (APP-055) is not an "important hedgerow" and it has therefore not been included in the list of important hedgerows which are authorised to be removed under Article 35 (4) and listed in table in Schedule 10 of the draft DCO.

Question number	Question to	Question	Response
1.7.7.	The Applicant	**Article 40 Certification of Plans:** Article 40 (*Certification of plans etc.*) which provides for the submission of the BoR, Design Principles Statement, ES, Land Plans, Rights of Way, Streets and Access Plans, Works Plans, Outline Construction Environment Management Plan, Outline Landscape and Ecological Mitigation Strategy, Outline Lighting Strategy, Outline Construction Staff Travel Plan, Outline Surface Water Management Plan, Outline Drainage Strategy, Flood Consequences Assessment and Hedgerow Plan referred to in the draft Order [APP-014] to the Secretary of State in order that they may be certified as being true copies. Requirements 16, 18-22 describe 6 other plans referred to in the draft DCO. Will any of these plans be available in outline prior to end of the Examination?	**Requirement 16** requires the preparation of a Peat Management Plan, which will be informed by the completion of the site investigation studies secured by Requirement 14. The Applicant has commissioned an initial study in relation to the presence of peat within the Order Land. A copy of the report from the study is provided at Appendix 9. The report did not find any peat in the areas sampled. Appendix 6 of the Peat Survey Report details the locations where samples were taken. As such, it is not anticipated that there will be any significant peat reserves affected by the authorised development, but the requirement is proposed to be retained until the full site investigation studies have been completed to cover the eventuality that any peat deposits that were previously unknown are revealed. **Requirement 18** requires the preparation of a dust management plan for the earthworks (work no. 5). **Requirement 19** requires the preparation of a pollution prevention management plan for the earthworks (work no. 5). **Requirement 20** requires the preparation of a waste and material management plan for the earthworks (work no. 5). Each of these requirements is drafted such that the content of the final plan must be substantially in accordance with the contents of the Outline Construction Environmental Management Plan in relation to their content. The Outline Construction Environmental management plan is contained within the application at Appendix 3.1 to the ES (APP-036). It is not anticipated that separate outline plans for the earthworks elements will be prepared prior to the end of the Examination. The detailed content of the plans will be progressed once an earthworks contractor has been appointed and once the site investigation surveys and intrusive works have been completed and fuller information is available on the ground conditions. **Requirement 21** secures the preparation of a construction traffic management plan. An outline construction traffic management plan is included in the application as Appendix 3.3a to the Environmental Statement (APP-036). **Requirement 22** secures the preparation of an outline construction staff travel plan. An outline construction staff travel plan is included in the application as Appendix 3.3b to the Environmental Statement (APP-036).
1.7.8.	The Applicant	**Temporary Bridges:** Paragraph 3.7.7 of the ES [APP-042] states: *"There will be temporary bridges over the Water Main and National Gas Transmission System during construction, most likely temporary bailey bridges or similar."*	The final paragraph of Schedule 1 includes the following works: "*such other buildings, structures, works or operations as may be necessary or expedient for the purposes of or in connection with the construction, operation and maintenance of the works in this Schedule 1 but only within the Order limits and insofar as they are unlikely to give rise to any materially new or materially different environmental effects from those assessed in the environmental statement"*

Question number	Question to	Question	Response
		Can the Applicant point to where these works are defined in Schedule 1 of the draft DCO [APP-014]?	The temporary bailey bridge has been considered and assessed in the ES as the realistic worst case for a temporary crossing solution to offer protection to the water main. In relation to the water main, the Applicant is continuing to work with Welsh Water on the crossing design and discussions are ongoing as to whether it will be possible to construct the final bridged solution from the outset without the need for a temporary bailey bridge. However, until detailed design and technical approvals are complete, it remains a possibility that a temporary bridge may be required in order to get plant and equipment in place for construction without risk of damage to the water main. In relation to the gas transmission system, the crossing methodology is under discussion. The crossings of the gas transmission system are related to the installation of the gas pipeline, which is not part of the DCO application. A planning application has been submitted to CCS for the gas connection with reference 2018/2020/FUL.
1.7.9.	CCS	**Requirement 3:** Requirement 3 secures the landscaping mitigation proposals set out in the ES [APP-042] through the submission of a written landscaping plan (containing certain specified details in relation to hard and soft landscaping works) in respect of numbered works 1 and 2 for the approval of the relevant planning authority. The landscape plan that is submitted for approval must be substantially in accordance with the outline landscape and ecological mitigation strategy appended to the ES Appendix 3.4 [APP-036]. Are CCS content that the wording of Requirement 3 adequately secures monitoring that will cover 25 years based on the commitment at paragraph 4.7.1 of Appendix 3.4 [APP-036]?	Please also see the Applicant's response to question 1.9.2.
1.7.10.	CCS and Coal Authority	**Requirement 15:** Requirement 15 secures the provision of a minerals resources survey should the site investigation report demonstrate the presence of minerals. The minerals resources survey must be submitted to and approved in writing by the relevant planning authority. Are CCS content this requirement complies with adopted local planning policy i.e. UDP Policy R2?	
1.7.11.	CCS	**Requirement 25:** Requirement 25 requires that, following the final commissioning, site-attributable noise arising from the operation of numbered work 1 must be limited to the noise	

Question number	Question to	Question	Response
		levels set out in Table 3. Noise measurements at or in close proximity to the four identified locations must be submitted to the relevant planning authority before the end of three months beginning with the date of final commissioning (see Requirement 24). Any remedial works must be carried out in accordance with the programme for implementation and the noise measurements repeated and submitted to the relevant planning authority for approval. Are CCS content with the wording of this Requirement?	
1.7.12	The Applicant	**Requirement 28:** Requirement 28 provides some flexibility on the details of the development set out in Requirement 2. What sorts of amendments is this requirement intended to cover?	Requirement 28 allows the Applicant the flexibility to amend approved details, in the same way as would be permitted upon the discharge of conditions under the Town and Country Planning Act 1990. The intention is to ensure that the Applicant has the flexibility to respond to changes which may become necessary through the detailed design phase of the project, and to ensure that if there are efficiencies or improvements possible in the design, that these can be considered by the local planning authority to optimise the design and minimise adverse effects. These changes can only be relatively limited in scope, as they must meet the terms of Requirement 28(2) that they will not give rise to any materially new or materially different environmental effects to those which were assessed in the ES which accompanied the Application.
1.7.13	The Applicant	**Requirement 28(2):** Requirement 28(2) states that this provision would apply to amendments that are *'unlikely to give rise to any materially new or materially different environmental effects'*. Can this be framed with greater certainty by changing 'unlikely to' to 'will not'?	The wording of Requirement 28(2) has been updated in the revised draft DCO submitted by the Applicant at Deadline 1 so that the Requirement now reads "*will not give rise to any materially new or materially different environmental effects*".
1.7.14	The Applicant	**Schedule 11 Protective Provisions (PPs):** *Schedule 11 (Protective provisions*) includes draft PPs. Part 1 of Schedule 11 protects electricity licence holders, gas transporters and sewerage undertakers (save for National Grid which is protected by Part 3, Western Power Distribution (South Wales) plc which is protected by Part 4, Dwr Cymru Cyfyngedig which is protected by Part 5, Abergelli Solar Limited which is protected by Part 6 and Wales and West Utilities Limited which is protected by Part 7). Part 2 protects operators of electronic communications code networks.	Please see sections 7, 14, 19, 24, 25 of the Response to Relevant Representations submitted by the Applicant at Deadline 1, where the latest position in relation to negotiation of protective provisions with each relevant undertaker is set out.

Question number	Question to	Question	Response
		Please provide an update on the current status of these PPs?	
1.7.15.	The Applicant	**Gas Connection Working Width:** The route of the Pipeline and its width varies to account for natural and man-made features, but generally provides a temporary working width of 50 to 320 metres for construction [APP-010] at paragraph 1.28. Can the Applicant explain why it is necessary to include all of the Order land for the gas connection shown on the Land Plans – Sheet 1 of 2 [APP-057]?	Please see the Written Summary of Oral Submissions from Issue Specific Hearing 1 (DCO). The Applicant has set out the reasoning for the inclusion of the land shown on the Land Plans (APP-057) for the gas connection in response to Agenda Item 4 - Part 5 of the DCO.
1.7.16.	The Applicant	**Deadline 5 Applicant's Preferred DCO:** Can the Applicant ensure that the version of the draft DCO to be submitted by Deadline 5 is in the Statutory Instrument (SI) Template with the SI Template Validation Report attached.	This request is noted and the Applicant will submit the draft DCO at deadline 5 in both the SI Template (word) format with the validation report, and also as a pdf.
1.8	**Historic Environment**		
1.8.1.	The Applicant and CCS	**Conservation Areas:** At paragraph 13.7.15 of the ES [APP-042] it states: *"Of the two conservation areas within the 5 km Study Area, only one lies within the ZTV for the Project: Llansamlet Conservation Area (CA027). The ZTV suggests that the stack of the Power Generation Plant will be visible from some of the northerly parts of the conservation area. However, the landscape between the Project Site and the conservation area has been extensively developed, including the Swansea Enterprise Park and the M4 motorway. Thus, despite bringing about a minor change to north-eastward views from the conservation area, neither its setting, nor those of the listed buildings within it, will be adversely affected by the Power Generation Plant. There is no effect on the conservation area."* The Applicant at paragraph 13.7.16 reaches the same conclusion for Penllergaer Park and Garden (GM054). What is the CCS opinion on these conclusions?	The Applicant confirms that there will be no effect on the Llansamlet Conservation Area (CA027). The Applicant and CCS have a Statement of Common Ground (SOCG), and have agreed all matters on the Historic Environment assessment. This will be submitted at Deadline 1.
1.8.2.	CCS	**Requirement 13 of draft DCO [APP-014]:** Are CCS content with the wording of this commencement requirement?	
1.9	**Landscape and Visual**		

Question number	Question to	Question	Response
1.9.1.	The Applicant and CCS	**5 Year Monitoring:** Paragraph 3.11.59 of the ES [APP-042] states: *"The landscape proposals will cover a minimum period of five years of monitoring, management and maintenance to ensure the landscape objectives are successfully achieved."* Does CCS believe the above commitment is adequately secured in the draft DCO [APP-014] through Requirement 3 Provision and Maintenance of Landscaping?	The requirement for a minimum of five years of monitoring, management and maintenance as set out in the ES is reflected in the outline Landscape and Ecological Mitigation Strategy (at paragraph 4.7.1) (ES Appendix 3.4, APP-036) and is secured in paragraph 4 of Requirement 3, which states: *"(4) Any tree or shrub planted as part of the approved landscaping plan that, within a period of five years after planting, is removed, dies or becomes, in the opinion of the relevant planning authority, seriously damaged or diseased, must be replaced in the first available planting season with a specimen of the same species and size as that originally planted, unless otherwise approved in writing by the relevant planning authority*." The Applicant considers that this requirement (which has been previously discussed and agreed as appropriate with CCS) adequately secures the monitoring, management and maintenance of the landscaping which is approved under the landscape plan. This obligation sits alongside the longer term management and maintenance obligations discussed in more detail in the response to question 1.9.2 below. Please see the updated LEMS submitted by the Applicant at Deadline 1 (revision 1).
1.9.2.	The Applicant and CCS	**25 Year Monitoring:** Paragraph 11.6.9 of the ES [APP-042] states: *"The landscape proposals will cover a minimum period of 25 years of monitoring, management and maintenance to ensure the landscape objectives are successfully achieved, with a review every five years."* Does CCS believe the above commitment is adequately secured in the draft DCO [APP-014] through Requirement 3 Provision and Maintenance of Landscaping?	The requirement for long term monitoring, management and maintenance of the landscape proposals is contained in the outline Landscape and Ecological Mitigation Strategy at paragraphs 1.1.6 and 4.7.1 (see updated version of the LEMS submitted by the Applicant at Deadline 1), which states: "*The landscape and ecological mitigation measures described in this document will be subject to a management period running concurrently with the operational design lifetime of the Project…Within the first five years after planting, all plants found to be dead or dying will be replaced within the first available planting season."* The replacement planting obligation is discussed in the response to question 1.9.1 above. The longer term maintenance and management objectives for the landscape and ecological mitigation measures are set out in paragraph 4.7.2 of the outline and Landscape and Ecological Mitigation Strategy. The draft DCO submitted by the Applicant at Deadline 1 contains updated wording for Requirement 3(5) to secure the commitment to a 5 yearly review of the landscaping proposals over the operational life of the development.

Question number	Question to	Question	Response
1.9.3.	The Applicant	**Offsite Planting:** At paragraph 11.6.10 of the ES [APP-042] it states: *"……However, there may be an opportunity for affected parties to be engaged in a voluntary scheme of off-site planting."* Can the Applicant expand on what they envisage this could entail?	Off-site planting could comprise tree planting within the curtilage of a property to assist with screening the Project from views experienced by the residents. This would be an entirely voluntary scheme and as such has not been included in the assessment of landscape and visual effects and does not need to be secured in the DCO. Any voluntary planting which is undertaken as a result of agreement with landowners would not affect the ES conclusions or reduce the significance of the assessed effects. The planting may offer some softening benefits for residents, but the benefits would not be sufficiently great to justify mandating the provision of such planting or seeking compulsory powers over third party land to enable its delivery. The opportunity for off-site planting was identified as there is no feasible additional landscape mitigation within the Project Site which could further reduce the landscape and visual effects due to the height of the stack and the scale and mass of the Power Generation Plant.
1.9.4.	The Applicant	**Assessment Parameters:** Can the Applicant confirm that the parameters described in Table 3-3 are the parameters that have been used for assessment of landscape and visual effects?	The Applicant confirms that the parameters described in Table 3-3 are the parameters that have been used for the assessment of landscape and visual effects.
1.9.5.	The Applicant	**Mitigation Measures:** The Mitigation Register details how the mitigation in Section 11.6 [APP-042] will be delivered, via a combination of DCO Requirements and the Lighting Strategy [APP-036] and Landscape and Ecology Mitigation Strategy [APP-036] to be secured by agreement for the Project. Can the Applicant provide details of the draft DCO[3] [APP-014] requirements which relate to these measures, in particular: 1. the use of OCGT technology and 2. the design of buildings to reduce glare which are not currently specified in the draft DCO[APP-014]?	1. The use of OCGT technology is prescribed in the draft DCO via the description of the authorised development which is set out in Schedule 1. The development and component parts described are for OCGT technology. Other technologies (such as CCGT) require different plant and equipment which is not listed within the works descriptions, nor assessed within the ES. It would not be possible to construct a generating station with a different technology type and remain within the description of the authorised development set out in Schedule 1. Any development constructed under the authority granted in the final paragraph of Schedule 1 ("such other buildings, structures, works or operations as may be necessary or expedient for the purposes of or in connection with the construction, operation and maintenance of the works in this Schedule 1") is only permitted where it will not give rise to any materially new

[3] Requirements 2 and 5 refer to the Design Principles Statement [APP-048] which contains little detail.

Question number	Question to	Question	Response
			or materially different environmental effects from those assessed in the environmental statement. Chapter 3 of the ES describes the development which has been assessed as follows: Table 3.1: "An Open Cycle Gas Turbine (OCGT) peaking power generating station, fuelled by natural gas and capable of providing a rated electrical output of up to 299 Megawatts (MW)." In paragraphs 3.4.7 – 3.4.18 a detailed description is provided of the OCGT technology that has been assessed in the ES. It is clear from the descriptions in Chapter 3 of the ES that OCGT technology is the only technology that has been assessed in the ES, and in combination with the drafting of Schedule 1 describing the authorised development, it is considered by the Applicant that the selection of OCGT technology is adequately secured in the draft DCO. The Applicant also notes that the environmental permit will prescribe the operation of the generating station – see the response to question 1.0.3 above. 2. The Design Principles Statement (document 10.2) sets out the need for buildings to be designed to reduce glare. This principle is contained on page 13, in section 1.6 and is listed under principle 8. The text of the Abergelli Power Principle reads as follows: "*Materials chosen shall be robust, high quality and cost-effective. The architectural design, use of cladding materials and colours of the buildings and structures at the Project Site shall be designed to reduce glare and blend into the surrounding landscape*." Requirement 2(5) requires that the design of the buildings comprised in Work Number 1 is substantially in accordance with the relevant design principles contained in the design principles statement, which ensures that in preparing the detailed designs, the Applicant must have regard to the need to reduce glare. In considering the application for approval of detailed designs, CCS will also have regard to whether the designs comply with and meet the standards set out in the design principles statement. The Applicant therefore considers that the mitigation set out in Section 11.6 of the Mitigation Register has been appropriately secured within the draft DCO and the design principles statement.
1.9.6.	The Applicant	**Landscape Resource and Character:** At paragraph 11.1.5 of the ES [APP-042] it states:	"Landscape resource" and "landscape character" are terms that have been used interchangeably in the LVIA. Para 11.5.8 of the ES (APP-042) clarifies that the effects on landscape character are considered at a Project Site level and also within the 5 km study area.

Question number	Question to	Question	Response
		"The LVIA considers how the Project may have an effect upon landscape character and visual amenity. It considers how: • *Landscape effects associated with a development relate to change to the fabric, character and quality of the **landscape resource** and how it is experienced; and* • *Visual effects relate closely to landscape effects but also concern changes in views as visual assessment is also concerned with people's perception and response to changes in visual amenity."* At paragraphs 11.7.7 and 11.7.52 of the ES [APP-042] it states: *"Significant landscape effects are only predicted to result on **the landscape resource** of the Project Site. Effects on the **surrounding landscape character** within the 5 km study area would not be significant and are described in detail in Appendix 11.2."* Can the Applicant expand on the distinction between landscape "resource" and landscape "character"?	These terms are identified in the Guidelines for Landscape and Visual Impact Assessment (Third Edition) (GLVIA), para 2.19, where it states that '*the ELC definition of landscape supports the need to deal with landscape as a resource in its own right. In the UK this particularly reflects the emphasis on landscape character*…'
1.9.7.	CCS	**Table 11-13 ES [APP-042]:** Are CCS content that the 19 viewpoints are representative of receptors?	
1.9.8.	The Applicant	**Significant Operational Effects:** At paragraphs 11.7.70 and 11.9.1 of the ES [APP-042] it states respectively that: *"Once the structure planting around the Power Generation Plant and AGI establishes it would assist in providing some additional structure to the landscape which alongside the reinstatement hedgerow planting and fields returned to grazing along the Gas Pipeline route would assist in integrating elements of the development into the local landscape. Nonetheless, despite the establishment of the planting, the magnitude of effect is considered to remain Medium at year 15 as there would remain a noticeable alteration of the existing components of the landscape of the Project Site. This would result in a **Moderate Adverse** effect on the landscape character of the Project Site."* *"As all mitigation is embedded in the Project and there is no additional mitigation, all effects described in the Assessment of Effects section above are residual. The following tables therefore present a summary of the landscape and visual assessment."* Table 11-15 of the ES confirms that the Operational Project (all components) residual effects on Landscape Character around Project Site (refer to Appendix 11.2 for LANDMAP Aspect Areas) remain significant.	The 'landscape character around the Project Site' is the same as 'the landscape resource of the Project Site'. See the Applicant's response to question 1.9.6 above.

Question number	Question to	Question	Response
		Is the “landscape character around Project Site” the same as “the landscape resource” described in paragraphs 11.7.7 and 11.7.52 of the ES?	
1.9.9.	The Applicant	**Overall Integrity of the Landscape:** At paragraphs 11.7.59 and 11.7.65 of the ES [APP-042] it states: *“Once operational the Power Generation Plant would be a prominent feature within the immediate landscape of the Project Site. It would result in the partial loss to landscape features, including grazing land, trees and scrub vegetation, which would result in a partial change to some of the landscape characteristics although it would not diminish the overall integrity of the landscape.”* Can the Applicant elaborate on what they mean by *“overall integrity of the landscape”*?	The integrity of the landscape refers to the intactness of the pattern of components (physical elements and features as well as the aesthetic, perceptual and experiential aspects) which together form the landscape.
1.9.10.	The Applicant and CCS	**Significant adverse effect Policy ER 5 of draft LDP:** Paragraph 2.11.40 of the ES [APP-042] states: “Draft Policy ER 5 states that *“development will not be permitted that would have a significant adverse effect on the character and quality of the landscape and setting of the County”*.” What are the Applicant and CCS’s view on this draft policy ER5 in relation to the project?	Paragraph 11.7.52 of the ES (APP-042) states that ‘*significant landscape effects are only predicted to result on the landscape resource of the Project Site. Effects on the surrounding landscape character within the 5 km study area would not be significant*.’ As outlined in ES Appendix 11.2 (APP-28) Table 1, the overall character, scale and pattern of the landscape within the 5 km study area would remain largely unchanged. The extensive tracts of woodland, hedgerows and localised variations in landform would substantially limit the indirect effects on the surrounding landscape and its setting with little change resulting to the overall character of the landscape. Furthermore the Project is located within a landscape which contains a number of features which are not dissimilar in nature to the Project including the Felindre Gas Compressor Station, substations and numerous pylons and associated overhead lines, all of which are existing, prominent vertical structures within the landscape that detract from the existing character and quality. The Project Site and even the 5 km study area represent a small proportion of the overall landscape of the County. The Project would therefore have a local significant adverse effect on the character of the landscape which is not considered to equate to a ‘*significant adverse effect on the character and quality of the landscape and setting of the County*’ as stated in Policy ER 5 of the draft LDP.
1.9.11.	The Applicant	**Cumulative Effects:** Table 11-15 of the ES [APP-042] confirms that the Operational Project (all components) residual effects on Landscape Character around Project Site (refer to Appendix 11.2 for LANDMAP Aspect Areas) **remain significant i.e. the project alone has significant residual operational effects.**	The Project alone can result in significant residual operational effects and not necessarily result in a significant cumulative effect. This is because the cumulative assessment considers the additional effect of the Project on the landscape character in conjunction with the other cumulative developments (the cumulative baseline).

Question number	Question to	Question	Response
		Paragraph 11.10.34 and Table 11-17 of the ES states: "*As no significant cumulative effects are predicted, it is not considered necessary to identify additional mitigation, management actions or monitoring."* Can the Applicant explain how they concluded there are no significant operational cumulative effects predicted when, in Table 11-15 for the Project alone it is concluded there are significant residual operational effects?	The principle of magnitude of cumulative change thus makes it possible for the Project to have a moderate (significant) effect on a particular receptor, while having only a minor (non-significant) cumulative effect in conjunction with other proposed developments. The cumulative landscape effects are considered in terms of consequences for the key characteristics (for example its scale and pattern) of the landscape receptor in question and whether or not the character of the landscape is changed to such an extent that it becomes a new landscape type. The cumulative developments are mainly concentrated in areas that are already influenced by development and as such the introduction of the Project into this cumulative picture would result in a partial change to some of the landscape characteristics, but would not be sufficient to diminish the overall character of the landscape, therefore not resulting in a significant cumulative effect.
1.9.12.	The Applicant and CCS	**Public Rights of Way (PROW):** At paragraph 2.11.67 of the ES [APP-042] it states: "Draft Policy T 7 requires that acceptable alternative routes are identified and provided where development "*significantly adversely affects the character, safety, enjoyment and convenient use of a Public Right of Way (PROW)."* How does the Applicant believe it conforms with draft policy T 7? What is the view of CCS?	Draft Policy T 7 – Public Rights of Way and Recreational Routes within the City and County of Swansea Local Development Plan Deposit Document (2016) requires any development proposal which "significantly adversely affects the character, safety, enjoyment and convenient use of a Public Right of Way (PROW)" to identify and provide an "acceptable alternative route". The draft policy also sets out an expectation that development proposals will provide linkages and extensions to the existing PROW network where appropriate. None of the proposed Matters Arising Changes (MAC) (October 2018) to the LDP Deposit Document affect the wording of Draft Policy T 7. In accordance with section 5.13 of NPS EN-1, a Transport Assessment has been carried out for the Project and an assessment of likely significant traffic and transport effects is provided in Chapter 12 of the ES. This includes consideration of likely effects upon existing pedestrian and active travel routes within the vicinity of the site. As identified in paragraph 6.2.139 of the Planning Statement (APP-007), Footpaths LC34 and LC117 cross the Access Road whilst Footpath LC35B passes through the northern part of the Project Site. The assessment provided in Chapter 12 of the ES concludes that these parts of the PROW network would experience temporary moderate adverse and significant effects during the construction phase of the Project owing to access restrictions. Appropriate mitigation measures to minimise these effects are proposed within the Construction Traffic Management Plan (ES Appendix 3.3a, APP-036) and would be developed further and then implemented in consultation with the PROW Officer at CCS. In particular, it is proposed that the three PROWs crossing the Project Site will be temporarily stopped up during construction to ensure public safety (paragraph 3.9.2 of the Outline CTMP, ES Appendix 3.3a).

Question number	Question to	Question	Response
			Measures will be implemented during the construction phase to maintain safety to users from construction traffic and also from any excavations which may be present. Any temporary closures are expected to be short term and to the durations of specific activities. Temporary closures will be advertised in advance and diversions or directions to alternate routes will be provided where practicable. Prior to construction, appropriate signage will be placed at the construction area to make footpath users aware of the works. Should works be undertaken in the immediate location of the crossing, banksman will be employed to avoid any potential adverse effects from construction traffic. In addition, suitable fencing will be implemented to ensure users of the permissive routes are separated from construction traffic safely. Following the completion of works, the affected PROWs will, as appropriate, be reinstated to their preconstruction condition upon completion of works (where any damage is attributable to contractors working on behalf of APL) or (in the case of Footpath LC35A, at the proposed AGI site) permanently diverted. In accordance with the policy expectation that new development will help to enhance the PROW network, the Applicant proposes to provide two financial contributions through the Section 106 (s106) Agreement to be used by CCS to implement permanent footpath improvements to PROW in the vicinity of the Project, to be agreed by the Applicant and CCS. The Applicant has proposed the following: the First Footpath Contribution is to be used for liaising with land owners, undertaking footpath improvements works that do not require additional land rights or consents and seeking the relevant consents required to undertake footpath improvements works. The Second Footpath Contribution is for the purpose of implementing the remaining footpath improvement works (i.e. those for which consents are required). This is set out in Schedule 3 of the s106 Agreement.
1.10	**Socio-economic Effects**		
1.10.1.	The Applicant	**Construction Related Training:** The Planning Statement [APP-007] at paragraph 1.3.4 states: *"It is further projected that should the construction, decommissioning or operation occur simultaneously with any other projects in the area, that this would provide a positive stimulus to the local economy through the provision of construction-related training and employment opportunities, supply chain linkages and demand for accommodation, food and drink services."*	Construction-related training will be provisioned and secured by a s106 planning obligation. The Applicant will work together with the CCS Beyond Bricks and Mortar Team to establish the Local Employment Scheme, which will be a set of initiatives aimed at unemployed and economically inactive people in Swansea. The scheme will include targets for the recruitment, employment and training of unemployed people and the Applicant will interview and, if appropriate, recruit suitably qualified applicants as part of the scheme as well as working with local training providers and apprentice schemes.

Question number	Question to	Question	Response
		How will this “construction-related training” provision be secured?	
1.10.2.	The Applicant	**GVA calculations:** The Planning Statement [APP-007] at paragraph 1.4.4 states: *“The construction of the Project would however also deliver benefits to the local economy, with projected annual delivery of £7.1 million Gross Value Added (GVA) (a measure of the value of goods and services produced) during the construction period, which is expected to commence in 2020. It is projected that 25 to 122 construction workers would be required on site during the peak construction period. The operational phase of the Project would provide up to an estimated 10 FTE direct jobs and provide approximately £0.55m GVA and £0.5m GVA per annum to the local and national economy respectively. The Project will also deliver minor beneficial effects where the previously worked land and known mine workings are stabilised and remediated if required.”* a) Please provide the basis for these GVA calculations? b) When does the Applicant estimate that the “peak construction period” will occur?	a) The predicted economic and employment benefits quoted in paragraph 1.4.4 of the Planning Statement (APP-007) are taken directly from the socio-economic impact assessment provided in Chapter 14 Socio-economics of the ES (APP-042). This identifies the likely significant socio-economic effects of the construction and operational phases of the Project, including in terms of predicted employment and the associated Gross Value Added (GVA) contribution of the project to the local and national economy. An assessment of construction phase employment and associated GVA generation is set out in Section 14.7(a)(i) of the ES. The calculation of £7.1m GVA from construction phase employment is detailed in footnote 13 of the ES chapter. This calculation is based on estimated construction sector GVA per employee (£76,225) within a 60-minute drive-time of the Application Site, as supplied by Experian forecasts. The Abergelli Power Project ES: Socioeconomic Chapter Clarificatory Note (October 2018) (Annex B to the Statement of Common Ground between CCS and the Applicant) provides more detail regarding the use of this figure. Similarly, an assessment of operational phase employment and associated GVA generation is set out in Section 14.7(b)(i) of the ES. The calculation of £0.55m GVA - £0.5m GVA per annum generation from operational employment is detailed in footnotes 26 and 27 of the ES chapter. As with the construction phase assessment, this used GVA per employee data sourced from Experian forecasts. b) Based on the construction programme provided by Abergelli Power in 2017 to inform the EIA for the Project, peak construction is expected to occur between months 7 and 19 of the anticipated 22-month construction programme. This 12-month period relates to the period when the majority of civils engineering, building and construction erection of the main plant buildings and electrical work would take place. Assuming that construction commences in March 2020 as expected, the peak construction period would therefore occur between September 2020 and September 2021.
1.11	**Transportation and Traffic**		
1.11.1.	The Applicant	**Operational Traffic:** The NTS [APP-020] at paragraph 4.8.5 states that operational traffic is scoped out. Table 4-2 of the ES [APP-042] does not scope it out. The Secretary of State in their Scoping Opinion [APP-035] did not explicitly scope out operational traffic.	The ES (APP-042) does not discuss Operational traffic other than to say that impacts during the operational period have not been assessed to the same extent as construction, as the operational traffic generation will be minor. Whilst operational traffic effects were not explicitly scoped out in the ES, the text in the NTS (APP-020) is correct in substance in that, as noted above, operational traffic effects did not need to be considered in any detail as they are shown to be not significant. Please see Appendix 4, Schedule of Corrections.

Question number	Question to	Question	Response
		Can the Applicant confirm that the text in the NTS is incorrect?	
1.11.2.	CCS	**No Significant Effects:** Do CCS agree with the conclusions of the Traffic and Transport assessment (Table 12-35 of the ES [APP-042]) that there would be no significant effects in the local area resulting from traffic movements during the construction (some temporarily significant), operation and decommissioning phases of the Proposed Development?	
1.12	**Water Environment**		
1.12.1.	The NRW and Applicant	**Flood Consequence (FCA) and Water Framework Directive (WFD) Assessments:** What is the NRWs view on the conclusions of FCA and WFD assessments? Can the Applicant explain how the proposed parameters presented in the draft DCO [APP-014] have been applied in the FCA and WFD Screening Assessment?	The Applicant has an agreed SOCG on the conclusions of the Flood Consequence (FCA) and Water Framework Directive (WFD) with NRW. The proposed parameters set out in the draft DCO (APP-014) have been applied to the following assessments: • The Outline Drainage Strategy and FCA estimate the attenuation storage required onsite based upon the proposed hard standing areas specified; and • The WFD Assessment assesses the water bodies within the Project Site Boundary.
1.12.2.	NRW and CCS	**Table 9-3 of the ES [APP-042] Water Receptor Sensitivity and Value:** Do NRW and CCS agree with the receptor sensitivity and value conclusions used in the water resources assessment?	The Applicant has a Statement of Common Ground (SOCG) with NRW who confirm they are in agreement with the methodology and conclusions of the Water Resources and Flood Risk assessment. It is assumed that CCS defer to NRW on this point.
1.12.3.	The Applicant	**Other Consents [APP-058]:** Authorisation for drainage works in connection with a ditch may be required for the realignment of the drainage ditches at the Power Generation Plant Site under the Land Drainage Act 1991 (item 11 Table 1 of Details of Other Consents and Licences [APP-058]). Can the Applicant confirm if this is the only other water resources authorisation that will be required?	The Applicant does not anticipate any requirement for water abstraction permits onsite. A discharge permit will be required for the surface water drainage design. The foul water drainage may require a separate permit however this is dependent on the location and means of the septic tank effluent discharge point. If a permit is not required, the foul water drainage will still require to be registered. This will be confirmed during the detailed design phase. There are no separate permits required for the oily water drainage design, however this falls under the overall environmental permit for the site, and there are minimum requirements specified in the, 'How to comply with your environmental permit' document by Natura Resources Wales (NRW).
1.12.4.	The Applicant	**Site Drainage:**	Requirements for detailed design and consideration of effects on on-site streams and surrounding land are set out in Section 8 of the FCA (ES Appendix 9.1, APP-040) and within the Outline Drainage Strategy (the Applicant has submitted a revised version of this

Question number	Question to	Question	Response
		Can the Applicant demonstrate how the detailed drainage design and consideration of effects on on-site streams and surrounding land has been/is being addressed?	document for Deadline 1). To summarise, during the detailed design phase, it is intended that the drainage design will include attenuation ponds such that there is no increase in greenfield runoff from the Project Site. Therefore, the onsite streams and surrounding land should be unaffected by variations in flow conditions. The on site streams/drainage ditches will be diverted around the power station platform and reconnected to their original discharge point. Where a diversion passes under a proposed access road, this will be accommodated by a suitably sized culvert.
1.12.5.	The Applicant	**Dŵr Cymru/Welsh Water Infrastructure Assets:** In their RR **Dŵr Cymru/**Welsh Water [RR-023] identify a number of receptors in the form of water infrastructure which may be subject to impacts, and highlights concerns regarding asset protection in the draft DCO [APP-014]. a) Can the Applicant provide details of how these issues are being addressed? b) Can the Applicant provide clarification of how the assessment in the ES has taken these receptors into account?	a) The Applicant confirms that discussions are progressing with Dwr Cymru (Welsh Water) in relation to appropriate protective provisions for the benefit of Welsh Water's assets. Technical discussions are ongoing with Welsh Water in relation to the crossing design of the existing 66" diameter water main located along the southern side of the Generating Equipment Site, with a view to ensuring that the structural integrity of Welsh Water assets and apparatus are maintained during the construction and operation of the proposed development. A meeting was held on 3 October 2018 to discuss the design of the Access Road and a potential design of a solution for crossing the Welsh Water owned water main. As set out in Table 3 of the Statement of Reasons (Annex 2) the Applicant considers that the rights can be acquired without serious detriment to the carrying on of Welsh Water's undertaking. The protective provisions in the draft DCO ensure that Welsh Water's apparatus will be protected and access maintained during construction. Reference should also be made to the Applicant's Response to Relevant Representations, also submitted at Deadline 1 on 9 November. b) The Environmental Statement (App-042) assesses effects on water quality in Chapter 9: Water Quality and Resources and Flood Risk, and no significant effects were predicted on nearby receptors. Welsh Water's assets were not selected as receptors as both are up-catchment and at a considerable distance from the Project Site. No water quality effects are therefore predicted on Welsh Water's assets.
1.12.6.	The Applicant	**Assessment Data:** Can the Applicant clarify what empirical data or other information the water quality effects assessment has been based on?	For the WFD assessment, groundwater body status is classified on the basis of quantitative and chemical status. The status is assessed by NRW primarily using data collected from their monitoring network as detailed within ES Appendix 9.2 (APP-040). Information on WFD measures is available from the NRW website (accessed November 2017)[1], which is based on mitigation measures as defined in the 2015 River Basin Management Plans[2].

Question number	Question to	Question	Response
			1. Natural Resources Wales Water Watch Explorer, 2017. Natural Resources Wales website, access November 2017 at http://waterwatchwales.naturalresourceswales.gov.uk/en/. 2. Natural Resource Wales, December 2015. Western Wales River Basin District River Basin Management Plan. Other datasets referred to include all private groundwater and abstraction licence database entries received from County Council of Swansea (CCS) and NRW respectively to identify any abstractors within a 1 km distance from the Project Site Boundary.
1.12.7.	The Applicant	**Cumulative Effects:** Can the Applicant further justify the reasoning that it is appropriate to exclude cumulative effects with other development on the basis that the Proposed Development would result in minor effects alone? Can the Applicant confirm if any agreement from consultees has been reached regarding the scope and methodology of the assessment of cumulative effects on water quality and flooding?	Cumulative effects (and also in-combination effects) are addressed in Section 9.11 of the ES (APP-042). No significant effects from the Project have been identified. The final design for the small package plant to treat wastewater will reduce the nutrient loadings (both nitrogen and phosphorus) so there are minimal inputs of nutrients from the proposed Project. Cumulative effects from other developments are excluded on the basis that the type of developments and whether they will go ahead is uncertain. Furthermore, it is reasonable to assume that discharges from other developments would also be controlled. The Applicant has an agreed SOCG with NRW based on the conclusions of the WFD, FCA and ES, including the cumulative assessment.
1.12.8.	The Applicant	**Monitoring Measures:** Table A.1 Mitigation Register contains all mitigation measures outlined in the ES [APP-042], however no information is included about proposed periodic maintenance of the attenuation pond, or sampling. Can the Applicant provide clarification as to what monitoring regime is proposed and how these measures will be secured either via the DCO or other means?	The proposed attenuation pond is part of the design solution and it is therefore regular maintenance will be required to ensure continued operation to design performance standards. Maintenance responsibility for the attenuation pond and the development of a Maintenance Plan and Schedule for the asset will be set out at detailed design stage. Maintenance activities will be in accordance with current best practice set out in the CIRIA SuDS Manual (C753) and as a minimum will include the monthly inspection of all hydraulic structures and the removal of litter and debris from the pond. Any temporary cut off ditches of ponds utilised during the construction phase will be managed in accordance with the Outline CEMP (secured as part of the DCO). Water quality sampling would not normally be required unless in response to a given incident. If such an incident should occur, it may be necessary to sample both water and sediments in the attenuation pond to ensure that dissolving into solution and adsorption onto sediments is fully understood.

Question number	Question to	Question	Response
			For the construction phase, the Outline CEMP (secured as part of the DCO) will provide the guidance for reporting following an incident. For the operational phase, the onus will be on site operators to report (externally where appropriate) if an incident should occur. The standard communication route for this will be the NRW website https://naturalresources.wales/about-us/contact-us/report-an-incident/?lang=en
1.13	**Ground Conditions**		
1.13.1.	The Applicant	**Mineral Resources:** Coal, sand and aggregate resources have been identified within the development site (paragraph 5.3.25 of the Planning Statement [APP-007] and Chapter 10 of the ES [APP-042]). The ExA notes Requirement 15 in the draft DCO [APP-014] for a Mineral Resources Survey. a) How does the Applicant propose to prevent the sterilisation of mineral resources? b) How will the Applicant conform with the extant CCS UDP (November 2008) policies R2 and R4 and the emerging LDP policies RP12 and RP14?	a) **Baseline:** The Project is located within areas identified as mineral reserves within the CCS UDP, as shown on ES Figure 2.1 (APP-042). Almost all of the land enclosed by the Order Limits for the Project is within an area of allocated coal reserves, the only exception being the existing Access Road from the B4489 (Work No 2). Two areas of potential sand and aggregate mineral resource are also allocated in the UDP Proposals Map (ES Figure 2.1), corresponding with the mapped position of shallow superficial geological deposits (Devensian glacial deposits). One of these areas of sand and aggregate resource is located largely to the south of the Generating Equipment Site and is only affected by the New Section of Access Road. The second area of sand and aggregate resource is located to the north of the Generating Equipment Site, and is crossed by the Gas Connection. **The Project:** The footprint for the construction of the Generating Equipment Site is largely located outside of the sand and aggregate resource areas, with the exception of the Gas Connection and a small part of the New Section of Access Road. Existing utilities already cross the southern area of sand and aggregate resource. Construction and operation of the Project would result in the sterilisation of coal mineral resources beneath the footprint during the operational lifespan. However, the mineral resource will remain intact and would be available to future generations beyond the lifespan of the development. Additionally, the extraction of coal by underground mining methods is not likely to be acceptable based on the existing National Grid gas and electricity infrastructure that are located in the local area. **Mitigation:** A Minerals Resource Survey will be undertaken and agreed with CCS before construction which is secured by Requirement 15 (Mineral Resources Survey) and Requirement 27 requires the Application obligation to have regard to the outcome of the mineral resources survey when preparing the decommissioning plan). b) UDP Policy R2 (2008) relates to coal resources. The policy states that “proposals for coal mining, processing and recovery will only be supported where eight stated conditions can be satisfied. These conditions include:

Question number	Question to	Question	Response
			"(vii) No significant danger, damage or disruption would arise from subsidence or ground instability" – The existing electricity substation development and existing high pressure gas main alignment and gas compressor station are likely to preclude future underground mining during the lifespan of these developments, if there is a risk that coal extraction could lead to ground instability and subsidence that would impact on the existing infrastructure. *"(viii) Proposals for coal extraction will not be permitted within 500m of settlements, sensitive development or International and National Designations of environmental and cultural importance"* – Existing development at Maes-eglwys and Llety Morfil are within 500m of the Project. If these farmsteads meet the definition of an existing settlement, then coal extraction is unlikely to be acceptable within a 500m radius of these locations, including the area of the Project. For non-coal developments, which would apply to the Project, Policy R2 states that: *"Development proposals that would affect the working of known potential resources, as shown on the Proposals Map, will have to be accompanied by a full assessment of the potential resource and the impact of the proposal in terms of sterilising the resource. Permission will be refused if the assessment indicates that the resource would be sterilised"* Proposal Map 2 and ES Figure F2, shows the area of the Project has been mapped for Coal under Policy R2. No assessment of the potential coal resource has been undertaken and the potential for sterilisation has not been assessed. Coal has been previously worked beneath the site and the extent of remaining coal within the worked seams has not been established. Theoretically the built elements of the Project, including the Generating Equipment Site footprint and the Gas Connection, could be regarded as sterilising coal resources. However, the presence of existing developed infrastructure in the vicinity, including an electricity substation, gas compressor station and high pressure gas main are likely to have already established constraints that will prevent future underground coal extraction and will have already sterilised coal reserves during the operational lifespan of these facilities. Modern coal mining methods are based on total extraction of the coal seam, with the worked out ground collapsing following mining. Total extraction mining is unlikely to be permitted beneath the existing infrastructure or the Project.

Question number	Question to	Question	Response
			As noted in response to 13.1(a), the remaining mineral resource will remain intact and would be available to future generations beyond the lifespan of the proposed development. CCS UDP 2008 R4 – Policy R4 relates to sand and aggregate resources. As noted in response to 13.1(a), two areas of potential sand and aggregate mineral resource are allocated in the UDP Proposals Map within the vicinity of the proposed development. One of these areas of sand and aggregate resource is located largely to the south of the Project and is minimally affected by the site Access Road. No significant sterilisation is expected from the construction of the Access Road. This area is already crossed by an existing electricity transmission line and high pressure gas main. The second area of sand and aggregate resource is located to the north of the power station footprint, and is crossed by the Gas Pipeline for the Project. This would result in the temporary sterilisation of the resource for the duration of the operational life of the Gas Pipeline. As noted in response to 13.1(a), the mineral resource will remain intact and would be available to future generations beyond the lifespan of the Project. CCS LDP RP12 – Safeguarding Minerals. Mineral safeguarding within the ES has not been assessed. However, under RP12.i, it seems reasonable that any future coal extraction would be deemed impracticable (existing electricity and gas infrastructure), uneconomic (future mine development costs for underground extraction, reduced UK coal market after coal based electricity generation ends in 2024) and environmentally unacceptable (especially based on CO2 emissions and emerging Welsh Govt policy presuming against coal). CCS LDP RP14 – Mineral Buffer Zones. This not assessed within the ES as the Swansea Unitary Development Plan interactive map [accessed 6th November 2018] indicated that there are no mineral buffer zones in the vicinity of the Site.
1.13.2.	Coal Authority	**Future Mining:** Can the Coal Authority confirm that the Project Site is currently not in an area for which the Coal Authority is determining to grant a licence to remove coal using underground methods, where a licence has been granted or in an area that is likely to be affected at the surface from any planned future underground workings?	

Question number	Question to	Question	Response
1.13.3.	Coal Authority	**Ground Stability:** Does the Coal Authority believe the ground stability hazards can be managed by the Applicant's mitigation measures discussed in Chapter 10 of the ES [APP-042]?	
1.13.4.	NRW	**Peat Management Plan:** Requirement 16 of the draft DCO [APP-014] proposes a Peat Management Plan. Are NRW content with the drafting of Requirement 16?	
1.13.5.	The Applicant	**Page Numbering in ES [APP-042]:** Page numbering goes awry after page 10-8 until 10-51.	Noted. Please see Schedule of Corrections in Appendix 4.
1.13.6.	The Applicant	**Peat Survey:** Will the peat survey proposed as part of the overall site investigation conform with NRW's request for a minimum of 1 peat probe per hectare of development area, and 1 peat core per 10 peat probes? This will show the distribution of peat across the development area so that the main areas of deep peat can be avoided by infrastructure, and therefore inform the subsequent PMP (Table 10-2 of ES [APP-042]).	According to the BGS online viewer (https://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html) an area of peat is shown as being present in the central section of the Project Site within the Generating Equipment Site. A preliminary peat survey was undertaken for a duration of 3 days between the 24 and 26 of June 2018 to confirm the presence of peat at shallow depth. Please see Appendix 8 for the full survey report. Methodology for the peat survey is presented in Section 3. The survey confirmed the expected geology of glacial deposits but did not encounter any peat within the Project Site. As no evidence of peat has been identified, it is suggested that a peat management plan (PMP) may not be considered necessary.
1.13.7.	NRW and CCS	**Tables 10-3 and 10-4 of ES [APP-042]:** Do NRW and CCS agree with the descriptors of sensitivity and magnitude described in these Tables respectively?	
1.13.8.	The Applicant, NRW, Coal Authority and CCS	**Table 10-8 Geological Hazards ES [APP-042]:** Are you aware of any other geological hazard or potential geological hazard in the area?	The Applicant is not aware of any other geological hazard or potential geological hazard in the area than those mentioned in Table 10-8 Geological Hazards ES (APP-042).

Question number	Question to	Question	Response
1.13.9.	The Applicant	**Table 10-11 of ES [APP-042] Preliminary Conceptual Site Model:** Can the Applicant provide a block diagram schematic of the CSM described in Table 10-11?	A block diagram schematic of the CSM described in Table 10-11 of ES (APP-042) is provided in Appendix 9.

List of Annexes

Annex	Title
Annex 1	Updated Statement of Reasons Table 2
Annex 2	Process of negotiations with statutory undertakers
Annex 3	Objections schedule

List of Appendices

Appendix	Title
Appendix 1	Updated Table 3-1 of the Planning Statement
Appendix 2	Protocol for IED Annex V 1500 Limited Hours Derogation July 2015
Appendix 3	Detailed CVs of the Environmental Statement Principal Authors
Appendix 4	Schedule of Corrections
Appendix 5	Meeting Notes for APL CCS NRW Abergelli Power Station Workshop 6th February 2018
Appendix 6	*Wealden District Council v Secretary of State for Communities and Local government and others* 2017 [EWHC] 351
Appendix 7	Updated No Significant Effects Report
Appendix 8	Peat Survey Report
Appendix 9	Block diagram schematic of the CSM

Annex 1

Annex 1

Updated Statement of Reasons Table 2

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
1	-	Freehold acquisition of land for the AGI	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn	An option agreement was concluded on 26 June 2014 with the owner (the "Option Agreement") for the acquisition of the AGI area by way of long term lease agreement. A meeting was held with the owners and their representatives on 11th May 2018 to update the owners on the project design and to commence discussion for freehold acquisition of Plot 1 by way of variation to the Option Agreement. A fully termed written offer was made to the landowners on or around 28 June 2018.
2	-	Freehold acquisition of land for the AGI	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	An option agreement was concluded on 26 June 2014 with the owners (the "Option Agreement") for the acquisition of the AGI area by way of long term lease agreement. A meeting was held with the owners and their representatives on 11th May 2018 to update the owners on the project design and to commence discussion for freehold acquisition of Plot 2 by way of variation to the Option Agreement. A fully termed written offer was made to the

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
					landowners on or around 28 June 2018.
3	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
3A	-	Acquisition of new rights (and imposition of restrictions) for drainage and landscaping in relation to the Gas Connection	(a), (e) and (g)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
3B	-	Acquisition of new rights (and imposition of restrictions) for drainage and landscaping in	(a) and (e)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		relation to the Gas Connection		Paul Marsh Meidwen May Thomas Teifion Henry Thomas	full rights to permanent and temporary rights over the owners' land in respect of the Gas Connection.
4	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
4A	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
				Teifion Henry Thomas	
5	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
5A	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
5B	-	Temporary use to facilitate	Not applicable - temporary	Sarah Ann Marina Llewellyn	The rights have been secured by agreement between the owners and the Applicant by option

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		construction of the Gas Connection	possession powers sought	Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
6	-	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
6A	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owner's land in respect of the Gas Connection.

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
				Thomas Teifion Henry Thomas	
6B	-	Temporary use to facilitate construction of the Gas Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Gas Connection.
7	3	Acquisition of new rights (and imposition of restrictions) for the Pipeline	(a), (g), (h) and (j)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides permanent and temporary rights over the owners' land in respect of the Pipeline.
7A	3	Temporary use to facilitate	Not applicable - temporary	Sarah Ann Marina Llewellyn	The rights have been secured by agreement between the owners and the Applicant by option

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		construction of the Power Generation Plant and the Pipeline	possession powers sought	Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides to permanent and temporary rights over the owners' land in respect of the Pipeline and a temporary construction lease over Plot 7A.
7B	2, 3	Temporary use to facilitate construction of the Power Generation Plant and the Pipeline	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides to permanent and temporary rights over the owners' land in respect of the Pipeline and a temporary construction lease over Plot 7B.
7C	3	Temporary use to facilitate construction of the Power Generation Plant and the Pipeline	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis	The rights have been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement"). The Option Agreement provides to permanent and temporary rights over the

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
				Paul Marsh Meidwen May Thomas Teifion Henry Thomas	owners' land in respect of the Pipeline and a temporary construction lease over Plot 7C.
8	1A, 1B, 1C, 1D, 1E, 1F 2, 3 and 5A	Freehold acquisition of land for the Power Generation Plant	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 8 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement").
9	1A, 1B, 1C, 1D, 1E, 1F, 2, 3 and 5A	Freehold acquisition of land for the Power Generation Plant	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas	The option for the Applicant to acquire a 50 year lease over Plot 9 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the "Option Agreement").

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
				Teifion Henry Thomas	
10	1B, 1E, 4 and 5A	Freehold acquisition of land for the Ecological Mitigation Area	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	Discussion for acquisition of Plot 10 was commenced formally by meeting held on 11th May 2018 with the owners and their representatives. The initial views and opinions of the owners were sought and a discussion over valuation will continue immediately between the appointed land agents.
11	2, 3 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical Connection	(b), (c) and (f)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 11 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”).

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
11A	2, 3 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical Connection and for access to the Ecological Mitigation Area.	(b) and (e)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 11A has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”).
11B	2, 3 and 5B	Temporary use to facilitate construction of the Power Generation Plant and the Electrical Connection	Not applicable - temporary possession powers sought	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 11B has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”).

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
12	1F, 2, 3 and 5B	Acquisition of freehold land (and imposition of restrictions) for Laydown Area, Maintenance Compound, Access Road and Electrical Connection	Not applicable – freehold acquisition sought (pink land)	Sarah Ann Marina Llewellyn Eric Davies Bryan Emyr Llewellyn Alaine Francis Paul Marsh Meidwen May Thomas Teifion Henry Thomas	The option for the Applicant to acquire a 50 year lease over Plot 12 has been secured by agreement between the owners and the Applicant by option agreement dated 26 June 2014 (the “Option Agreement”).
13	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Electrical Connection and the Access Road	(b), (c) and (f)	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 13. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018.
13A	2 and 5B	Temporary use to facilitate construction of the Access Road and	Not applicable - temporary possession	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		the Electrical Connection	powers sought		13A. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018.
13B	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 13B. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018.
14	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical Connection	(b), (c) and (f)	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 14. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018.
15	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the	(b) and (c)	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 15.

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		Access Road			Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018.
16	-	Acquisition of new rights (and imposition of restrictions) for the Electrical Connection	(b), (d) and (f)	National Grid Electricity Transmission plc	Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 16 was made on or around 18th May 2018.
16A	-	Temporary use to facilitate construction the Electrical Connection and the Access Road	Not applicable - temporary possession powers sought	National Grid Electricity Transmission plc	Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 16A was made on or around 18th May 2018.
17	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b) and (c)	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 17. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
					around 18th May 2018.
17A	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 17A. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018.
17B	2 and 5B	Temporary use to facilitate construction of the Access Road and the Electrical Connection	Not applicable - temporary possession powers sought	Michael Edwards	A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 17B. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. A fully termed written offer was made to Mr Edwards on or around 18th May 2018.
18	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (d)	Wynne Watkins	A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 18. A fully termed written offer was made to Mr Watkins on or around 18th May 2018.
18A	2 and	Temporary use to facilitate	Not applicable - temporary	Wynne Watkins	A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
	5B	construction of the Access Road and the Electrical Connection	possession powers sought		discussion for acquisition of rights over Plot 18A. A fully termed written offer was made to Mr Watkins on or around 18th May 2018.
18B	2 and 5B	Temporary use to facilitate construction of the Access Road	Not applicable - temporary possession powers sought	Wynne Watkins	A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 18B. A fully termed written offer was made to Mr Watkins on or around 18th May 2018.
19	2 and 5B	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c), (d) and (j)	National Grid Electricity Transmission plc	Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 19 was made on or around 18th May 2018.
19A	2 and 5B	Temporary use to facilitate construction of the Access Road	Not applicable - temporary possession powers sought	National Grid Electricity Transmission plc	Ongoing dialogue with NG ET plc has continued over the connection, access and construction arrangements for the Project over the previous 12 calendar months. A fully termed offer for acquisition of the rights over Plot 19A was made on or around 18th May 2018.
20	2	Acquisition of new rights (and imposition of restrictions) for the	(b), (c) and (j)	Claire Louise Smith Ferelith Joan Smith Malcolm Richard	Confirmation of the appointed agent for the owners was received during the week of 7th May 2018 and a telephone meeting held with

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		Access Road		Christie Smith Robert Malcolm Christie Smith Kirsty Ann Dando-Thomas Jeffrey Charles Jones Garry William Thomas	the land agent on 10th May 2018 to review and discuss the rights to be acquired over Plot 20. A fully termed offer for acquisition of the rights over Plot 20 was issued to the land agent on or around 18th May 2018.
21	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	Wynne Watkins Good Energy Brynwhilach	A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 21. A fully termed written offer was made to Mr Watkins on or around 18th May 2018.
22	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	Rediplay Limited Teamforce UK Limited	A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 22. A fully termed written offer was made to Mr Watkins on or around 18th May 2018.
23	2	Acquisition of new rights (and imposition of restrictions) for the Access Road	(b), (c) and (j)	National Grid Gas plc	A fully termed written offer was made to NG Gas plc on or around 18th May 2018.
24	2	Acquisition of new	(b), (c) and (j)	Wynne Watkins	A meeting was held with Mr Watkins and his

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		rights (and imposition of restrictions) for the Access Road			land agent on 27th April 2018 to commence discussion for acquisition of rights over Plot 24. A fully termed written offer was made to Mr Watkins on or around 18th May 2018.
Plots 9, 10, 11, 11A, 11B, 12, 13, 13A, 13B, 14, 15, 16, 16A, 19, 19A, 20, in respect of minerals rights only	1A, 1B, 1C, 1D, 1E, 1F, 2, 3, 4, 5A and 5B	Freehold acquisition of land for the Power Generation Plant, Ecological mitigation area, Laydown Area, Maintenance Compound, Access Road and Electrical Connection. Temporary use to facilitate construction of the Power Generation Plant, the Electrical	(b), (c), (d), (e), (f) and (j)	Lord Richard Anthony Hussey	Assessment of potential for interference with minerals rights is in progress, and negotiations with the owner of the minerals rights are expected to begin shortly.

Land in respect of which powers of compulsory acquisition or temporary possession are sought					
Plot No.	**Work No.**	**Reason for acquisition or possession**	**Category of rights sought**	**Owner / occupier**	**Status of negotiations**
		Connection and the Access Road. Acquisition of new rights (and imposition of restrictions) for the Access Road and the Electrical Connection.			

Annex 2

Annex 2

Progress of negotiations with Statutory Undertakers

	Statutory Undertaker	Relevant Representation	Details of apparatus requiring protection/works required and land impacts	Status of negotiations
1	National Grid (National Grid Electricity Transmission Limited and National Grid Gas Limited)	RR-024	Underground gas transmission pipeline (Feeder 32), and associated rights. Overhead electricity transmission lines and pylon.	The first draft protective provisions and side agreements were first issued to National Grid on 23 May 2018. A conference call was held with National Grid on Thursday 16 August 2018 to discuss the interactions between the Project and National Grid's apparatus. Statements of Common Ground (one for each statutory undertaker) were sent to National Grid on 12 September 2018. Discussions on the Statement of Common Ground, protective provisions and side agreements are currently being progressed.
2	Western Power Distribution Limited	RR-006	An overhead line which crosses above the temporary construction laydown area, new means of access and landscaping and ecological area. An overhead line which crosses the identified route for the new underground gas connection pipeline for the Project. Underground cables which run along and across the access road which is to be used for the Project (which is already in existence as it is an existing access road to National Grid's substation).	The first draft protective provisions and side agreements were issued to Western Power Distribution Limited on 21 May 2018. These are currently in the process of being negotiated.
3	DWR Cymru Cyfyngedig (Welsh Water)	RR-023	High pressure water main serving Swansea - there will be a 400kV cable which crosses the water main. Crossings required for permanent site access and temporary crossings for temporary laydown area. Protections required in relation to the exercise of streetworks powers. Protections required in relation to the exercise of powers of compulsory acquisition/extinguishment of rights.	The first draft protective provisions and side agreements were issued to Welsh Water on 22 May 2018. The draft Statement of Common Ground was sent on 25 September 2018. A meeting was held on 3 October 2018 to discuss the design of the access road and the design of a solution for crossing the water main. Discussions on the Statement of Common Ground, protective provisions and side agreements are currently being progressed.
4	Abergelli Solar Farm Limited	RR-018	Underground cables connecting the eastern solar field to the DNO station and the private road which provides access to the solar farm. If NG switches off to connect to APL, that may not be compensated by APL.	The first draft protective provisions and side agreements were issued to Abergelli Solar Farm Limited on 22 May 2018. These are currently in the process of being negotiated.
5	Wales and West Utilities Limited	RR-013	High-pressure underground gas main which runs between the existing Swansea North Substation and the adjacent National Grid Gas Compressor Station. A 400kV cable crossing and the new section of Access Road which will cross the Wales and West pipeline.	The first draft protective provisions and side agreements were issued to Wales and West Utilities Limited on 21 May 2018. The protective provisions and side agreements are currently being negotiated.

Annex 3

Annex 3

Objections Schedule

Obj No.[1]	Name/ Organisation	IP/AP Ref No[2]	RR Ref No[3]	WR Ref No[4]	Other Doc Ref No[5]	Interest[6]	Permanent/ Temporary[7]	Plot(s)	CA?[8]	Status of objection
1	Western Power Distribution (South Wales) PLC	20010472	006			Part 1, Part 2 and Part 3	Permanent and temporary	Permanent: 3, 3A, 3B, 10, 12, 16, 18, 19, 20, 21, 22, 24. Temporary: 7C, 13A, 16A, 18A, 18B, 19A.	Yes	Negotiations are on-going in relation to the protective provisions and side agreements.
2	Michael Edwards	20010992	011			Part 1, Part 2 and Part 3	Permanent and temporary	Permanent: 12, 13, 14, 15, 17. Temporary: 13A, 13B, 17A, 17B.	Yes	No agreement has been reached between the parties. A meeting was held with Mr Edwards and his land agent on 27th April 2018 to commence discussion in relation to the proposed land acquisition. Further dialogue has been held between land agents to review principles of valuation to acquire the rights by negotiation. Carter Jonas discussed the offer to be made with the owner's agent on 2nd May 2018. A fully termed written offer was made to Mr Edwards on or around 18th May 2018. On 6th June 2018 Carter Jonas enquired with the agent if any progress had been made with respect to a counter offer or proposal. Further meetings have been held between land agents with the Applicant in attendance on 24th September and 10th October to progress discussions. Following the meetings the owner's agent has provided comparable evidence by email on 2nd November 2018 and inviting APL to revise the offers made.
3	Rediplay Ltd	20010976	012			Part 1, Part 2 and Part 3	Permanent and temporary	Permanent:18, 21, 22, 23, 24. Temporary: 18A, 18B.	Yes	No agreement has been reached between the parties. A meeting was held with Mr Watkins and his land agent (Mr Watkins is the ultimate beneficial owner of Rediplay Ltd) on 27th April 2018 to commence discussion in relation to the proposed land acquisition. A fully termed written offer was made to Mr

										Watkins on or around 18th May 2018. The owner's agent wrote to Carter Jonas on 7th August 2018 in response to the offer made on 18th May 2018, confirming that the heads of terms submitted with the offer were not accepted. A counter offer was made and Carter Jonas requested in an email dated 3rd September 2018 comparable evidence to support the proposal made. No evidence has been provided to date from owner's agent. A further meeting has been held between land agents with the Applicant in attendance on 24th September.
4	Wynne Watkins	20010975	014			Part 1, Part 2 and Part 3	Permanent and temporary	Permanent: 18, 21, 22, 23, 24. Temporary: 18A, 18B,	Yes	No agreement has been reached between the parties. A meeting was held with Mr Watkins and his land agent on 27th April 2018 to commence discussion in relation to the proposed land acquisition. A fully termed written offer was made to Mr Watkins on or around 18th May 2018. Carter Jonas received correspondence from the owner's agent on 7th August 2018 confirming that the heads of terms proposed in the offer made on 18th May were not acceptable to the owner and a counter offer was submitted. Carter Jonas wrote to the agent on 3rd September 2018 to confirm the rights being sought under the DCO and requested evidence of comparable transactions to support the counter offer made. No evidence has been provided to date from owner's agent. A further meeting has been held between land agents with the Applicant in attendance on 24th September.
5	Abergelli Solar Ltd	20011175	018			Part 1, Part 2 and Part 3	Permanent and temporary	Permanent: 2, 3, 3A, 3B, 4, 5, 6, Temporary: 4A, 5A, 5B,	Yes	Negotiations are on-going in relation to the protective provisions and side agreements.

								6A, 6B, 7C.		

Obj No = objection number. All objections listed in this table should be given a unique number in sequence.

[2] Reference number assigned to each Interested Party (IP) and Affected Person (AP)

[3] Reference number assigned to each Relevant Representation (RR) in the Examination library

[4] Reference number assigned to each Written Representation (WR) in the Examination library

[5] Reference number assigned to any other document in the Examination library

[6] This refers to parts 1 to 3 of the Book of Reference:

- Part 1, containing the names and addresses of the owners, lessees, tenants, and occupiers of, and others with an interest in, or power to sell and convey, or release, each parcel of Order land;
- Part 2, containing the names and addresses of any persons whose land is not directly affected under the DCO, but who "would or might" be entitled to make a claim under section 10 of the Compulsory Purchase Act 1965, as a result of the DCO being implemented, or Part 1 of the Land Compensation Act 1973, as a result of the use of the land once the DCO has been implemented;
- Part 3, containing the names and addresses of any persons who are entitled to easements or other private rights over the Order land that may be extinguished, suspended or interfered with under the DCO.

[7] This column indicates whether the Applicant is seeking compulsory acquisition or temporary possession of land/ rights

[8] CA = compulsory acquisition. The answer is 'yes' if the land is in parts 1 or 3 of the Book of Reference and the Applicant are seeking compulsory acquisition of land/ rights.

Appendix 1

Updated Table 3-1 of the Planning Statement

3.3.8 Table 3-1 provides indicative dimensions for the main plant items which would be present at the Generating Equipment Site.

Table 3-1: Parameters for assessment

Building or Structure	Maximum Height (m)	Minimum Height (m)	Maximum Length (m)	Maximum Width (m)
Gas Turbine Generator (including gas turbine, generator, air inlet filter house, air inlet duct, exhaust diffuser, and auxiliaries such as lube oil system, air dryers, fuel gas filter package, instrument air system, compressor washing) (Work No 1A)	27	-	50	40
Exhaust gas emission flue stack (Work No 1A)	45	35	-	12
Control room/office/ workshop (Work No 1B)	7	-	45	25
Emergency Generator (Work No 1B)	6	-	13	5
Gas receiving station (including compression station, emergency generator, Joule-Thompson boilers and other auxiliary control cabinets) (Work No 1C)	10	-	70	50
Gatehouse (Work No 1E)	4.5	-	9	8
Demineralised water tank (Work No 1B)	7	-	7	7
Fire water tank (Work No 1B)	15	-	15	15
Above ground installation (AGI)*	3	-	85	35
Minimum offtake connection (MOC)*	3	-	35	30

Building or Structure	Maximum Height (m)	Minimum Height (m)	Maximum Length (m)	Maximum Width (m)
Gas Pipeline inspection gauge facility*	3	-	35	35
Fin Fan Coolers (Work No 1A)	10	-	28	14
Transformer compound (including generator step up transformer, unit and other transformers, connection to underground cable and associated equipment.) (Work No. 1D)	15	-	65	60

**Not included in DCO Application*

Appendix 2

Protocol for IED Annex V 1500 Limited Hours Derogation July 2015

Version 5.1 Protocol for IED Annex V 1500 Limited Hours Derogation July 2015

INTRODUCTION

This paper describes a protocol for the application of the limited hours derogation (1500 hours per annum) in Part 1(2) of Annex V of the Industrial Emissions Directive (IED). This protocol applies in England and Wales.

1.0 WHAT IS THE 1500 LIMITED HOURS DEROGATION?

Part 1(2) of Annex V of the Industrial Emissions Directive (IED) states that combustion plants using solid or liquid fuels which were granted a permit before 27 November 2002 and which do not operate more than 1500 operating hours per year as a rolling average over a period of five years, may be subject to alternative emission limit values depending upon specific criteria. These values are set out in Annex V subject to the total rated thermal input of the plant. There is also a 500 hours derogation for gas fired plants which is explained in section 7.0 of this paper.

The IED states that the 1500 hours derogation, known as the Limited Hours Derogation (LHD), may be applied at a boiler or unit level rather than a stack level[1]. If applied to part of a combustion plant the applicable ELV is based on the total rated thermal input capacity of the entire plant and an operator is required to ensure that emissions will be monitored separately at each flue.

2.0 WHAT ARE THE RELEVANT EMISSION LIMIT VALUES?

Annex V sets out emission limit values (ELVs) for any existing plant using solid or liquid fuels that do not operate for more than 1500 hours per year as a rolling average over a period of five years:

Emission Limit Values	**Existing Plant (Part 1)***		
	SO_2	NO_x	Dust
Solid Fuels	800		20
Solid or liquid fuels (not exceeding 500MW)		450	20
Solid fuels (greater than 500MW)		450[+]	20
Liquid Fuels (not exceeding 300MW)	850		20
Liquid Fuels (greater than 300MW)	400		20

* this limited load derogation can be applied to an individual unit within a combustion plant of several units provided the individual flue can be monitored separately. It is only available to plants permitted before 27 Nov 2002 and operational before 27 Nov 2003 (SO_2).

[+] applies to plants granted a permit before 1 July 1987 (NO_x).

[1] at the level of one or more separate flues within a common stack

For gas turbines, the NO_x ELV specified in Annex V is 150 mg/m^3 when firing natural gas and 200 mg/m^3 when firing other gases or liquid fuels.

In addition, UK regulators have discretion to apply BAT based ELVs which might be more stringent than the ELVs set out in the IED. In order to minimise SO_2 emissions, for example, the EA have stated that they wish to set BAT ELVs which require the operation of existing post combustion abatement equipment such as FGD. Section 5.0 provides more information about BAT based ELVs.

3.0 WHEN CAN A PLANT ENTER THE LIMITED HOURS DEROGATION?

Operators can enter plant/units into LHD from 2016 under different circumstances. An operator can choose to enter this derogation from 2016 for one or more units. Alternatively an operator can enter plant/units into the LHD at the end of the period of the Transitional National Plan (TNP) (30 June 2020) or when they exit the TNP (if earlier). Defra confirmed in an annex to a letter dated 28 December 2011 that:

> *"A plant can take the Annex V 1,500 hours derogation upon completion of the TNP on 30 June 2020: it will be for the regulator to consider how the last sub-paragraph of paragraph 2 of Part 1 of Directive Annex V applies"*

This letter also explained that an operator could enter the LHD before the end of the TNP period (30 June 2020):

> *"A plant can leave the TNP at any time between 1 January 2016 and 30 June 2020 to be subject to Annex V 1500 hour derogations: it will be for the regulator to consider how the last sub-paragraph of paragraph 2 of Part 1 of Directive Annex V applies."*

But it is important to note that this letter explains that "*The whole of a plant must be subject to the TNP, so only a whole plant can leave*". Given that the TNP covers only whole plants, as defined by the "*common stack*", there is no scope for differentiation between units within a plant. It is not possible, therefore, for operators to run units under the TNP and the LHD at the same time. This was first explained by Defra in 2011 in the aforementioned letter which reads:

> "… *the TNP can cover only <u>whole</u>[2] large combustion plants[3] which were first permitted by the relevant environmental regulator[4] before 27 November 2002 or for which a permit application had been made by that date and which were put into operation within a year of that date"*

However, when a plant leaves the TNP, an operator can place one or more units into ELV compliance and one or more units into the LHD. Individual units within an LCP can opt for the 1500 hour derogation, but each must have a separate flue. If more than one unit within

[2] That is to say, not parts of a plant.
[3] As defined in Article 3(25) and within the scope set out in Article 28 of the Directive.
[4] The Environment Agency for plants in England and Wales, the Scottish Environment Protection Agency and the Northern Ireland Environment Agency.

an LCP opts for the derogation, then the 1500 hours applies to all the derogated units, so that they have an aggregated total of 1500 hours collectively, not 1500 hours each. Where the whole LCP opts for the LHD, the 1500 hours total applies to the whole LCP.

ELVs applicable to LHD plant are set out in Annex V. The LHD[5] is not available to combustion plants for which an Article 33 undertaking has been given (Limited Life Derogation Declaration). In other words, it is not possible for an operator to run under the LHD and the Limited Life Derogation (17 500 hours) at the same time.

4.0 HOW WILL THE ROLLING FIVE YEAR AVERAGE BE CALCULATED?

The derogation can apply to either the whole combustion plant or to individual units/boilers. If applied to an individual unit then the emissions from that unit must be measured separately. This is explained by Annex V Part 1(2) which reads:

> "*A part of a combustion plant discharging its waste gases through one or more separate flues within a common stack, and which does not operate more than 1 500 operating hours per year as a rolling average over a period of five years, may be subject to the emission limit values set out in the preceding two paragraphs in relation to the total rated thermal input of the entire combustion plant. In such cases the emissions through each of those flues shall be monitored separately."*

Prior to the end of the initial five year period, required to establish a rolling five year average, a unit cannot be operated for more than a total of 7500 hours. Further conditions apply and are set out below. The rolling five year averaging period starts on the date of entry into the derogation and ends on the date of exit from the derogation. Therefore a year refers to a 12 month period of operation, not a calendar year.

Once the five years have been established, the average is calculated on a rolling annual basis thereafter (i.e. a 12 month period's contribution falls off as another 12 month period's contribution is added). The LHD Plant/Unit may run for more than 1500 hours in a 12 month period but must not exceed the upper threshold of 7500 hours over a five year rolling average. A separate approach is needed in the case of plant exit from the LHD or plant closure, and this is discussed below.

In the initial years of operation under the LHD, there is a need to provide some flexibility in the number of hours that can be operated, as the market demand for lower output plants can vary substantially from year to year. To impose a strict pro-rata annual limit of 1500 hours per annum in each individual year of the LHD would not allow any flexibility to respond to market conditions with a demand for above average output from these plants, and would go significantly beyond the requirements of the IED. In addition, there can be significant seasonal fluctuations in market demand, both within a year and between years, which a strict approach cannot accommodate. This seasonal fluctuation was recognised in the regulation of the LCPD 2000 hours LHD, for example.

[5] The "1500 hours" derogation is set out in footnotes to the tabulated ELVs in Annex V. Under the "limited life" derogation, those ELVs do not apply

Version 5.1 Protocol for IED Annex V 1500 Limited Hours Derogation July 2015

Equally, it would not be reasonable to allow the entire 7500 hours allowed under the 5 year average to be used in any individual year. A balance is required that allows sufficient, but not excessive, flexibility. The approach set out in this protocol in the table below is considered to deliver an appropriate balance between the need for flexibility and the need to ensure that a plant is compliant with the LHD upon exit from the LHD. The cumulative total operating hours set out the table are derived from two guiding rules:-

- Operation in any individual year should not exceed 2250 hours.
- If operation has reached 2250 hours in one year, then the average operation across other years should not exceed 1650 hours.

If a plant exits the LHD prior to the completion of 5 years (either to close or operate in compliance with the IED ELV conditions) then the cumulative average operating hours must be less than 1500 hours per year. Operation for part of a year (12 months) will be assessed on a pro-rata basis. For example, if a plant exits the LHD after 18 months then the total number of operating hours must be less than 2250 hours, giving an average of 1500 hours per year over the 18 month period.

If a plant exits the LHD after 5 years have been completed, then the average across the preceding 5 years must be less than 1500 hours. Unless the plant has closed on the anniversary of entry to the LHD, a pro-rata assessment will be necessary. This will be managed by calculating the average operating hours across the preceding 60 months of operation.

Based on these principles the following table sets out the averaging arrangements for different durations of, and subsequent operation after, the LHD:

Application of LHD condition

Normal operation	
(a) Unit operates for 5 years and beyond	A unit cannot exceed 7500 hours over a 5 year period. A unit cannot exceed 2250 hours in any individual year. Limit on average operating hours in intervening years:- End of year 1 = 2250 End of year 2 = 2250+1650= 3900 End of Year 3 = 2250+(1650*2) = 5550 End of Year 4 + 2250+(1650*2) + 1500= 7050 End of year 5 = 7500 After 5 years, the earliest 12 months are replaced in the calculation when a further full 12 month period is completed. Starting point is date of entry into the derogation.

Version 5.1 Protocol for IED Annex V 1500 Limited Hours Derogation July 2015

Exit to ELVs or closure	
(b) Unit closes, or exits to ELV, before 5 year average is established	The cumulative average operating hours must be less than 1500 hours per year at the date of closure or exit, with the contribution from any part year period assessed on a pro-rata basis. The plant cannot close or exit until this condition has been met. *Example of closure or exit before 5 year average is established:* • *Plant enters LHD on 1st July 2018* • *Plant exits LHD on 30th September 2021, i.e. after 3 years and 3 months operation.* • *Average operating hours must be less than 1500 hours per annum pro-rata. This is equivalent to a total cumulative number of hours of [(3 x 1500 hours) +(3/12 X 1500 hours)] = 4875 hours.*
(c) Unit exits to closure after 5 years, part way through a year	60 months rolling average must not exceed 1500 hours.

5.0 PRINCIPLES FOR DETERMINING IED BAT BASED ELVS

The determination of BAT for plant or individual units entering the LHD is addressed separately.

6.0 WHAT MONITORING AND REPORTING MEASURES NEED TO BE PUT IN PLACE?

Article 30 (4) makes reference to the provision that Annex V ELVs may be applied to part of a combustion plant with a limited number of operating hours. Section 3.2 of the IED monitoring protocol[6] specifies that units in the LHD are treated as separate LCPs for monitoring and compliance purposes (including the determination of operating hours). Further details of monitoring and compliance are set out in the monitoring protocol and reference should be made to this document.

IED Article 72 (4) (b) requires the annual reporting of the number of operating hours for each unit subject to a LHD.

[6] Monitoring And Reporting Emissions from Utility Boilers and Gas Turbines for Compliance Purposes: A Guide to Current Best Practice for the Operators of Power Plant, JEP 2014 .

Appendix 3

Detailed CVs of the Environmental Statement Principal Authors

Catherine Anderson
BA (Hons), MSc
EIA Associate Director

EXPERIENCE

2010-Present

AECOM
Associate Director

2006- 2010

RSK
Senior EIA Consulant

2002-2006

Environment Agency Wales

Flood Engineer / Planning Liaison Officer

QUALIFICATIONS

MSc Sustainable Environmental Management, Plymouth University

BA (Hons) Environmental Management & Sustainable Development, University of Wales Lampeter

PROFESSIONAL MEMBERSHIPS

IEMA Associate, IEMA Chartered Environmentalist (pending)

LANGUAGES

English

PUBLISHED ARTICLES & CONFERENCE PAPERS

Regeneration of Brown Fields Sites in South Wales, submitted and presented to BLURS 2010

The Application of Pumped Storage, British Hydropower Association, presented at All Energy 2013 and BHA Summer 2013 Conference

Pumped Storage: What are its Prospects, published in International Water Power & Dam Construction, May 2014

Pumped Storage: Present Trends & Future Applications, published in Clean Tech Journal, May 2014

Catherine is an Associate Director within the environment impact assessment (EIA) team. Catherine's project experience on several high-profile regeneration, industrial, infrastructure and energy projects makes her well placed to provide a multidisciplinary evaluation of development sites, provide onsite environmental management and the production of Environmental Statements and associated documents, planning applications, screening opinions and specialist documents such as Habitats Regulation Assessments and Marine Licences. Her EIA experience includes projects in the UK and internationally, and is therefore well versed in all EIA methodologies and international standards and requirements.

She has experience of managing challenging and complex EIAs, including the preparation of EIAs' to support the large scale infrastructure projects such as those seeking Development Consent Orders (DCO) for Nationally Significant Infrastructure Projects (NSIPs), two of which were "first of their kind DCOs" – Tata Steel 225MW Power Station and Glyn Rhonwy Pumped Storage, the former received the lowest ever representations at examination and the latter being test case for the Planning Inspectorate; both of which were approved.

Catherine has provided expert witness evidence for the Issue Specific and DCO Hearings, and managed the technical input into the Rochdale paramaters, the formulation of DCO Requirements and Management Plans. Catherine is also currently the lead EIA manager the largest nuclear power project (Moorside Nuclear Power Station) which is the largest nuclear project in Europe and consists of three DCOs in one application.

Catherine has extensive knowledge of legislation, especially in terms of EIA, permitting, marine licensing, flood risk, ecology, waste, contaminated land and energy. Having gained four years service with the Environment Agency Wales, Catherine has expert knowledge on regulatory processes in all environmental disciplines in addition to ongoing close contacts within regulators and local authorities, which is of great benefit to clients. This includes a 2 year period spent as an Environmental Manager on a CCGT power station and a 1 year secondment to National Grid as the Environment Agency Wales representative for the Felindre – Tirley high pressure gas pipielines.

She is an experienced trainer for a series of EIA courses which are delivered externally. Over the last 5 years she has trained a variety of sectors (such as energy, nuclear, local and national government, mining, rail, roads, utilities, regulators and marine industry) and a total of over 450 attendees from the UK and Internationally.

RELEVANT PROJECT EXPERIENCE

Development Consent Order / Section 36 & Section 37 Applications

Abergelli 299MW OCGT Power Station, Stag / Drax

Catherine is the technical project director for the 299MW Open Gas Cycle Turbine power station, located north of Swansea, South Wales. Her responsibilities included technical sign off of all PEIR and ES chapters, preparation of a gap analysis from

the previous Scoping Report in response to design iterations, lead interface on the environmental permit and provision of expert witness.

Pumped Storage Portfolio, ILI

Catherine is project directing a portfolio of three large scale pumped storage hydropower projects. Ranging from 450MW to 950MW, all three sites are located in Scotland and are various stages of feasibility and planning consent. Catherine is responsible for the successful delivery of the EIAs including management of baseline surveys, stakeholder communication, regulatory consultee and Government liaison, permitting and consenting.

Winfrith Decommissioning & Restoration, Magnox Ltd

Magnox instructed Catherine to prepare and submit two planning applications for the main site restoration and decommissioning of the effluent pipeline in order to return the Winfrith site to heathland (Interim End State). The main site EIA was to be prepared under the Town & Country Planning Act, as the site does not come under the EIA Decomissioning Regulations 1999, with the pipeline coming under the Marine Works Act. Catherine project managed the production of the Scoping Reports with the EIA currently being prepared. She has also been the lead for stakeholder engagement and all baseline surveys.

Moorside Nuclear Power Station DCO, NuGen

Catherine is been seconded to NuGen's as their sole EIA Manager and Environment Intelligent Customer (IC) since September 2016. The Moorside project consists of a 2.8GW nuclear power station, marine offloading facility and brach landing, railway interventions and new loops and stations, highway improvements and temporary accommodation for up to 8000 workers. This is effect is 3 DCOs in one application due to the size of not only the nuclear power station but also the associated rail and housing required to construct the project.

Catherine has acted a their IC and was their sole Suitably Experienced Qualified Person (SEQP) for the EIA team. Catherine was responsible for technical review and input to the DCO, which included the following:

- SEPQ lead for environment during design development and optioneering, which includes a full review and expert opinion of all proposed design changes and options;
- Working with Westinghouse on the AP1000 layout design and required information for the EIA which also included two trips to Charlotte, North Carolina to work with the US core nuclear design team, and more recently with the new proposed investor and reactor vendor;
- Technical IC lead for baseline reports and all EIA documentation;
- Setup of a standard version control and technical review system for both NuGen and their EIA consultant to follow. This also involved the development of the an IMS procedure;
- Creation of an online geodatabase and impact assessment system to bank the existing baseline data, remove the risk of any loss of knowledge transfer and create the ability for inform the engineering design by embedding mitigation;
- Lead for liaison with the Environment Agency and Natural England;
- SEPQ for internal liaison with Design Authority, Permitting and Licensing and Engineering;
- Development of in house documents such as the Code of Construction Practice;
- Working with other cumulative projects including National Grid and United Utilities on data sharing on other cumulative projects;
- Technical lead for the EN-7 site nomination for Environment; and
- Preparing briefs and scope of works to procure core EIA surveys.

The DCO is currently on hold but Catherine remains in post providing technical and strategic direction to the Holistic Review being undertaken, in addition to due diligence activities and also assisting with further optioneering.

DCO for 250MW Internal Power Generation Project, Tata Steel

Catherine is project managed the full EIA for one of the largest thermal projects which has now been successfully approved for a Development Consent Order under the Planning Act 2008.

Catherine managed the preparation of a front loaded Scoping Report, and a bespoke receptor based assessment table for the Preliminary Environmental Information Report which can be utilised easily for public consultation. Through the pre-acceptance process Catherine then managed a challenging change to the Order Limits to produce the final Environmental Statement.

Having gained approval of the ES chapters from Neath Port Talbot County Borough Council and Natural Resources Wales prior to submission, the DCO received a record low number of 14 relevant representations, only one of which was objecting to the scheme. In addition a signed Statement of Common Ground was agreed even before the hearings started. AECOM were commended on getting such a level of agreement with all parties prior to the hearing starting, which meant that the issue specific hearing was over within 1 hour.

Catherine was responsible for all environmental matters and input in to the DCO including Works Plans, Habitats Regulation Assessment, Statement of Statutory Nuisance, Schedule of Mitigation and devising DCO Requirements including leading all regulatory liaison, specifically with NRW.

Catherine provided expert witness evidence at the DCO hearings which lasted one day.

This DCO was successfully granted in December 2015 with minimal Requirements and the grid connection included within the consent, which was a test case as this was excluded in other Welsh DCO projects.

Glyn Rhonwy 100MW / 800MWh Pumped Storage Development

Having project managed the EIA for the sub 50MW planning application for the same scheme which was approved in September 2013, Catherine is now the EIA project manager for the delivery of the DCO to the Secretary of State.

Located just outside the Snowdonia National park boundary, this scheme is located in a series of disused quarries north-east of Llanberis, North Wales. The site is environmentally complex with European protected species, heavily designated historical landscape and constrained transportation links.

Working closely with the legal and planning team, Catherine has managed the full DCO process through the pre-acceptance and consultation phase, including further public exhibitions and the preliminary site investigation works which have been undertaken.

This is the first ever onshore hydro scheme which will be received by the Planning Inspectorate and the first pumped storage scheme to be submitted in 40 years within England and Wales.

The DCO was submitted in October 2015 and Catherine has provided expert witness evidence as part of the Issue Specific Hearings which lastest three days.

Consent was granted for the project in February 2017 with the aim to start construction in early 2018.

Confidential Site Finding and Market Analysis for Thermal Plants

Catherine has been provided DCO advice and support for a site finding and acquisition exercise for an overseas utility company looking to develop and acquire thermal sites in the UK. Catherine was tasked with preparing a risk assessment for the DCO process as part of this first feasibility stage.

See FCS Windfarm Portfolio for Windfarm Section 36 application and Nevis Biomass for Section 37 Application for a 132kv overhead line.

Thermal

Severn Power 850MW CCGT power station, gas pipeline, 400kv overhead line, substation and associated projects – Newport

Following a successful approval of the Section 36 consent for a new CCGT power station, Catherine was employed as the Environmental Manager for the project build, and provided on-site presence for the client from May 2008 to July 2010 during site preparation and into construction. Site-wide environmental and H&S audits were undertaken by Catherine to ensure compliance and environmental responsibility whilst the project is in construction as well as discharging of S36 planning conditions and management of the permit application.

Onsite Auditing

This environmental manager role also includes the discharge of all Section 36 conditions, management of planning and construction of the associated pulverised fuel ash (PFA) landscaping mound and the Marshfield to Uskmouth gas pipeline, and assistance to preparing and completing the Environmental Permit for the operation of the power station. This involved in-depth analysis of the proposed emissions with due consideration of the designated sites that surround the power station.

Onsite Presence

Catherine's previous experience as a regulator enabled the development to run smoothly and has allowed Catherine to deal with any unexpected events that may occur on a major construction site. For example, this included when heavy-end hydrocarbon contamination was found on the critical piling path which meant that a bespoke on-site remediation scheme had to be devised as well as delineating the contamination promptly. Catherine's onsite presence allowed for prompt delivery of drilling rigs for delineation as well as the approval of the Environment Agency Wales to commence in-situ and ex-situ remediation within a matter of days.

Gas Pipeline Water Quality Monitoring

The Marshfield to Uskmouth gas pipeline was a 6.2km pipeline, horizontally directional drilled (HDD) underneath the River Usk, and which will supply gas to the CCGT power station. This pipeline is solely within the sensitive Gwent Levels Special Site of Scientific Interest (SSSI) and used a bespoke drilling method to minimise the impact to the SSSI. Catherine oversaw the timely discharge of the planning conditions and the ongoing monitoring of the Gwent Levels through regular water quality monitoring of the reens/watercourses in the Levels. This aspect of the project was extremely important, as the reen system is what sustains the qualifying features of the SSSI. This also included onsite observation and management.

Landscaping of PFA Mound

The site's previous owners left a disused mound of pulverised fuel ash (PFA). This material was to be used to create an

environmental benefit to the site and neighbouring wetlands, as opposed to removing this material off site, saving the client millions. The PFA mound has been created and acts as a visual screen to the adjacent wetlands area from the new CCGT power station.

Site Waste Management Plan & Materials Management Plan

Catherine also assisted with and managed the first Site Waste Management plan and Materials Management Plan in line with the CL:aire guidance for the use of PFA as part of the landscaping of the site, in line with its planning permission. This involved producing a materials inventory of all the materials production and reuse on site for the site preparation and construction phase of the new power station.

Strategic Flood Risk Study

Catherine also managed a strategic flood risk assessment of the site in response to the Pitt Report which identified the site as high risk due to its risk from fluvial and tidal flooding. Catherine therefore undertook the risk assessment utilising the existing mapping and modelling information and produced a flood evacuation plan for the site and also recommended areas where defences could be built. Catherine was then asked to project manage discussions with the Environment Agency Wales asset teams on how best to work together with the power station operator, National Grid and Western Power, who all had substations on the site, on how to develop the flood defence scheme.

Liberty House / SIMEC, Submission of Screening Opinions and Applications for Lawful Development Certificates for Peaking Plants and Advanced Conversion Technology Plants

Catherine has managed the preparation and submission of three LDC and screening opinions for 20MW peaking plants and 20MW ACT Plants at three existing steelworks and power generation sites in south wales – these include Liberty Steel Newport, Usjmouth Power Station and Tredegar / Liberty Tubes. LSN and Usmouth have received negative screening opinions and one has received a successful grant of the LDC. The Tredegar LDC is due shortly and the thir is currently being determined.

Catherine has also supported other equivalent LDC applications in Scotland on the Lochaber and Dalzell sites. Dalzell was granted permission in June 2017.

Preparation of DCO Scoping Report, >300MW confidential thermal project

Catherine is currently preparing another Scoping Report to be submitted to the Secretary of State for a confidential thermal project in excess of 300MW using process-derived gases.

Huntspill Energy Park, BAE Systems/Alder King

Catherine was commissioned by BAE Systems (through Alder King) to prepare a technical report on the potential energy generation uses at the proposed Huntspill Energy Park at the former BAE Puriton site. This involved preparing “reasonable assumptions” based on consented schemes to allow the EIA to assess realistic cumulative impacts on the basis of a 2GW CCGT power station, biomass plant, energy from waste plant and a peaking or OGCT plant.

Then in 2017, Catherine was asked to revisit the original report in the light of the changes to the EIA Regulations, and provide expert opinion on the types of energy uses which were proposed in the current energy market conditions.

Confidential client, Confidential 150MW biomass plant, 2010

Further to her project experience on large energy projects, Catherine was instructed as project manager to undertake a feasibility study and draft Infrastructure Planning Commission (IPC) scoping opinion on a proposed 150MW biomass power station in South Wales. Catherine advised the client to undertake ecological surveys as these were the most seasonally constrained and subsequently managed these through to completion to inform the Scoping Report.

Nevis Power, Production of Environmental Statement and construction of 50MW biomass plant, Newport, 2009-2010

Further to managing the production of the Environmental Statement, Catherine project managed the discharge of all relevant planning conditions for the above site to enable construction to begin. Owing to its location, adjacent to several designated sites, having also discovered the existence of a previously extinct beetle on-site and being heavily constrained by timings of fish migration and wintering birds, this programme may have proven difficult.

However, through discussions with the local authority, alternative methods of piling enabled construction to begin after translocation of the beetles has been completed to a new translocation area. The erection of a temporary visual screen during the initial stages of development will also minimise impact to the local environment. Catherine has also project managed the delivery of all required licences to enable construction to begin and began liaison on the Environmental Permit.

DERMOT SCANLON

Director – Major Infrastructure

BSc (Hons) Geography

MPhil, Town & Country Planning

Chartered Member, Royal Town Planning Institute

Fellow, Royal Geographical Society

Other affiliations:

Member, National Infrastructure Planning Association
Member, Town & Country Planning Association

CAREER SUMMARY

Dermot has over 30 years practical experience in environmental, land use and transport planning gained in both consultancy and local government. He is responsible for PBA's multi-disciplinary infrastructure planning team and his experience and responsibilities lie in undertaking, managing and directing planning and environmental studies for a wide range of infrastructure projects including energy and industrial development, waste management facilities, transport infrastructure and new communities.

Between 2010 and 2014 Dermot undertook a long-term secondment at the Thames Tideway Tunnel (TTT) project office working for the client team on the largest DCO in the country to date. He is now working with the contractor team in delivering this project.

Dermot regularly provides strategic advice to clients on risks and opportunities associated with the consent and delivery of infrastructure projects under DCO and other consenting regimes. He also acts as a mentor, supporting colleagues and others in Continuing Professional Development and has run seminars and lectures for universities and professional institutions.

Dermot has worked on projects throughout the UK and in the Republic of Ireland, Saudi Arabia, Kazakhstan, South Africa, the Channel Islands, Italy and Mauritius. A selection of projects is set out below.

PROJECT EXPERIENCE – DCO PLANNING PROJECTS

Millbrook Power Project
Drax

Director responsible for DCO planning and EIA for a proposed gas-fired power station (and asscoaied connections) in Bedfordshire. Consent for the project is being sought through the DCO process. Responsibilities include public and technical stakeholder consultation, preparation and review of ES, SoCC, Plannig Statement, Consultation Report and SoCGs.

Energy Cluster Development
Cory Riverside Energy Ltd

Project Director responsible for DCO planning and EIA matters for proposed integrated energy development in SE London.

North West Coast Connections (NWCC) – Front End Engineering Design Studies
Morgan Sindall

Part of the team, appointed by National Grid, to assist in design and pre-application planning work for the NWCC Project which includes a cable tunnel under Morecambe Bay to connect the proposed NuGen nuclear plant to the existing grid network near Heysham, Lancashire. Dermot worked with a contractor team to provide pre-application planning advice for the cable tunnel element of the project. The 20km long 6m diameter tunnel design includes an artificial islet in Morecambe Bay to provide a means of ventilation for the operational tunnel.

Thames Tideway Tunnel
Thames Water Utilities Ltd

Proposed 25km long, 7m diameter stormwater transfer tunnel under central London. Working as part of client team, Dermot was responsible for the management of the consultant teams and delivery of workstreams relating to several critical elements of the project, namely: air quality and odours; noise and vibration; transport; socio-economics; energy and carbon-footprint; and HIA. Activities included stakeholder consultation, preparation of the Preliminary Environmental Information Report (PEIR), Environmental Statement (ES) and other application documents as well as client support through the DCO examination.

Tideway West
BMB JV

The Tideway project received consent in Sept 2014 and Dermot is now working for one of the succssful contractor teams, leading a consents management team delivering the project. The team is dealing with the DCO Requirements covering transport, planning and environmental consents.

OTHER INFRASTRUCTURE & REGENERATION PROJECTS

HS2 Phase 2b – Development Partner
HS2 Ltd

As a member of HS2's Development Partner team, Dermot is supporting the Phase 2b Consultation and Engagement Team covering technical engagement for EIA and planning matters.

Eastern Quarry, Dartford
Land Securities

EIA Manager responsible for the managing the EIA Team and ES for this major development of over 7,000 houses and 300,000 sq m of associated commercial, leisure and community space, in a 300ha quarry site, over 25 years. The site is located between Bluewater shopping centre and Ebbsfleet International Station.

The Eden Project
The Eden Trust

Manager responsible for scoping study, EIA and Environmental Statement for Millennium Fund project to develop a series of 'biomes' housing plants from different climatic zones, a research facility and visitor attractions in a 412ha disused China Clay Quarry.

Regeneration Enabling Works, Stratford
London & Continental Railways

Scheme to create a development platform for a new industrial and commercial development, covering 46ha in east London at Stratford International Station/Stratford City involving the disposal of spoil arising from the tunnelled section of the CTRL. Responsible for EIA and preparation of the ES.

Deeside Power Station, Clywd
Deeside Power Ltd

Responsible for the co-ordination and production of ES and submission of application for both the 450MWe and the later scheme enlargement and for preparation of ES and consent application for the 400 Kv overhead transmission line connection.

Angle Bay Energy Project, Pembroke
Texaco Ltd

EIA carried out under Electricity Act procedures for this 1,300MWe combined heat and power development adjacent to Texaco's oil refinery in W Wales.

New Addington District Centre, Croydon
London Borough of Croydon

Project Director responsible for masterplanning study and planning application for the regeneration of district centre in LB Croydon. The first phase of the regeneration proposals, a leisure and community centre with associated residential space, received consent in September 2016 and the team is now working on the implementation phase.

M74 Northern Extension, Glasgow
Strathclyde Regional Council

Proposed 8km urban motorway in Glasgow. Responsible for undertaking scoping exercise, community consultation, assessment of proposed scheme and production of application documents.

Waste Repository, Derby
Derby Pride Ltd

EIA of a new repository for toxic and other wastes on a former industrial site close to the centre of Derby. The site has been reclaimed and is now a successful business park incorporating a sports stadium.

Dublin Port Tunnel
Dublin Corporation

EIA for new road tunnel and road link between Dublin's North Port at the mouth of the Liffey and the motorway network to the north of Dublin. Responsible for assessment work, co-ordination, preparation and review of EIS and technical documents.

M74 Northern Extension, Glasgow
Strathclyde Regional Council

Proposed 8km urban motorway in Glasgow. Responsible for undertaking scoping exercise, community consultation, assessment of proposed scheme and production of application documents.

M6 Widening Jn 11-16, Staffordshire
Highways Agency

Proposed 53km length of widened motorway. Responsible for analysis of related land use planning and environmental policies and in formulating and using a method for assessing cumulative environmental effects and the interaction of effects along the scheme corridor. Preparation of related documentation and public consultation.

EMPLOYMENT HISTORY (incl. most senior position held)

- Peter Brett Associates, Equity Director, 2002-present
- EDAW Ltd, Environment Director, 2000-2002
- Ove Arup & Partners, Associate, 1992-2000
- Rendel Palmer & Tritton, Planner, 1989-1992
- LB Redbridge, Commercial Liaison Assistant, 1988

Patrick Froggatt
BSc, CSci, MIAQM, MIEnvSc
Technical Director

EXPERIENCE

Over 16 years' expereice as an air quality consultant

QUALIFICATIONS

1st Class Honours, University of Leeds

3.96 GDP Pennsylvania State University

AFFILIATIONS

Member of the Institution of Environmental Sciences

Member of the Institute of Air Quality Management

Chartered Scientist)

LANGUAGES

English

Patrick is a Technical Director and a chartered scientist within the AECOM with over 16 years' expereice as a air quality consultant. Patrick specialises in the preparation of environmental impact assessments (EIAs) and environmental permit applications for industrial, commercial, residential and major infrastructure projects.

He has extensive experience of working with developers, regulators, local authorities and industrial clients. He has prepared a wide variety of Environmental Impact Assessments, EISHAs and Environmental Permit Applications for energy and industrial developments, including Energy from Waste (EfW), anaerobic digestion/ biogas, syngas and OCGT/CCGT developments and has been appointed to undertake independent expert reviews on behalf of both private and public clients.

RELEVANT PROJECT EXPERIENCE

POWER AND ENERGY

Winfrith Atomic Energy Establishment 2018 – ongoing

Undertaking a suite of breeding bird surveys to establish the presence and to provide territory maps for land within Winfrith AEE and along the route of the outfall at Arish Mell to inform the proposed decommissioning. Also acting as the clients ecological representative at stakeholder meetings to discuss the proposals for habitat creation post demolition.

Abergelli 299MW OCGT Power Station, Abergelli Power Limited

Patrick was the lead author for the 299MW Open Gas Cycle Turbine power station, located north of Swansea, South Wales. He prepared the air quality assessment in support of the proposed development including undertaking a detailed review of proposed turbine options, stack width and size and subsequent dispersion modelling to determine optimum stack high and impacts on both human health and ecological receptors. He undertook in-depth discussion with City and County of Swansea Council to agree the approach to the assessment, receptors and modelling parameters to ensure that the assessment addressed local conditions.

Marlowe Road Planning Hearing Expert Witness - Countryside Properties Ltd

Acted as the export witness for air quality at the Marlow Road planning hearing. The council called a special session in order to discuss the Marlow Road development in detail and to give the local residents the opportunity to provide their feedback on the scheme. The client, therefore, requested that export witnesses be present in order to answer any question that may be raised by either the council or local groups. The planning application was subsequently approved following the meeting.

DCO Hearings Expert Witness - Tata Steel

Patrick was appointed as the expert witness on behalf of Tata Steel at the National Infrastructure Planning hearings into the proposed Blast Furnace Gas fired power station to be developed on their site in Neath Port Talbot. He also prepared the planning and permitting applications on behalf of Tata Steel.

Surrey County Council – Technical Planning Support

Provision of environmental and amenity advice to support Surrey County Councils Planning Development Control Team. Focus of the contract was to review planning applications and set planning conditions relating to air quality, dust and odour for applications involving industrial, waste (i.e. landfill,

EfW, recycling and composting sites) and/or minerals sites.

Brig y Cwm Energy from Waste Facility, Wales, Covanta Energy

Undertaking an assessment of the air quality effects associated with the construction, operation and decommissioning of a

proposed 750k tpa Energy from Waste facility in Brig y Cwm, Merthyr Tydfil. A stack height determination was undertaken to optimise the stack height to take account for impacts at sensitive ecological receptors. Detailed atmospheric dispersion modelling was undertaken to determine the effects at human-health and ecological receptors. Stack emissions from other proposed industrial sources in the area were modelled to determine cumulative impacts of the project. Extensive interaction with the Environment Agency Wales and Air Quality Modelling and Assessment Unit (AQMAU) to determine appropriate heavy metal deposition rates for the proposed facility. The project reached the third round of questions as part of the DCO process before being cancelled by the client.

Argent Energy, Ellesmere Port

Preparation of the planning and permitting applications for a waste oil to biodiesel facility consisting of a standalone pre-treatment building with associated infrastructure and biodiesel production facility. In addition the site will host an Anaerobic Digester and associated biogas engines to utilise waste form the pre-treatment process to generate on site power. The development includes multiple combustion sources for appropriate stack height had to be determined as well as detailed modelling of emission and subsequent effects on the River Mersey ecological sites. The facility also includes an odour control system for which detailed modelling was required to ensure appropriate level of odour mitigation.

Thames Tideway Tunnel, Thames Water, London

Completion of detailed air quality and odour assessments for the construction and operation of 24 ventilation sites across central London. Detailed dispersion modelling of pollutants was undertaken using the EPA's AERMOD model for each of the vents serving the "super sewer" that tackles overflow of sewage discharge into River Thames. An odour and H_2S emissions inventory was prepared for each site with hourly varying emissions due to the movements of water in the tunnel. Building downwash, terrain effects, urban heat island effects and horizontal and vertical plume emissions were also included in the models. Various design scenarios were modelled and numerous sensitivity studies carried out to determine the optimum design parameters for pollutants dispersion. Model inputs and setups were peer reviewed as part of the DCO process

Mezitli Wastewater Treatment Plant, Mersin, Turkey

Preparation of a detailed odour assessment for the Mezitli Wastewater Treatment Plant (WWTP) being built with funding from the European Bank for Reconstruction and Development (EBRD). While the site was granted its EIA certificate in 2014, EBRD required that the site provide an odour assessment in order to agree funding for the project. Detailed dispersion modelling was subsequently undertaken to determine potential odour concentrations in the vicinity of the completed Stage II WWTP design with additional modelling undertaken to determine the potential works that could be undertaken to reduce odour concentrations in the local area as a result of direct and fugitive emissions from the site.

Air Compliance Management Programme, Kuwait Oil Company (KOC)

The ACMP project awarded to AECOM is the largest air consultancy contract ever awarded to a single company. Kuwait is regarded as having some of the poorest air quality in the world and KOC is one of the biggest emitters of air pollutants in Kuwait. The project has provided Kuwait with the tools and knowledge to drastically improve air quality. Patrick managed the development and testing of the KACMS (Kuwait Air Compliance Management System) emission inventory permitting system, the completion of emission control/abatement reports for each major KOC process and the ongoing production of monthly emissions estimates on behalf of KOC.

Scottish Water Solutions, Dunoon Waste Water Treatment Works

Air Quality assessment for a proposed WWTW in Dunoon, Scotland. Detailed assessment of the odour impacts by atmospheric dispersion modelling, using a dual modelling approach and preparation of input to the Environmental Permit including detailed interaction with SEPA to determine appropriate stacks height for the odour control units given the sites location within a former quarry.

Sinfin Lane, Derby, Gasification Facility

Preparation of the air quality assessment for a proposed Energos gasification facility with associated Entsorga front end materials processing.

Dunbar Energy from Waste Facility

Undertook the air quality assessment and PPC Permit Application, including BAT/BPEO, air quality, odour, input to heavy metals and dioxin health risk assessment and appropriate assessment assessments in support of the EIA and PPC application for an Energy Recovery Facility close to Dunbar.

Runcorn EfW Facility

Detailed air quality assessment to support planning (Environmental Statement) and PPC for a new Energy from Waste scheme at the Ineos Chlor site, Runcorn.

Rufford EfW Facility

Detailed dispersion modelling to inform the HHRA assessment to support planning (Environmental Statement) for a new EfW facility at Rufford.

Hull and East Ridings EfW Facility: Air quality assessment and PPC Permit Application, in support of the EIA and PPC application for an Energy from Waste plant on the banks of the Humber Estuary.

Exeter EfW facility: Detailed dispersion modelling to inform the HHRA assessment to support planning (Environmental Statement) for a new EfW facility in Exeter. Address enquiry comments RE start-up and shut down emissions and low and high load operations.

MIKE HEWETT
MIOA
Regional Director

QUALIFICATIONS

University of Liverpool 1993 -1994: IOA PG Dip in Acoustics & Noise Control (winner of IOA Merit Award 1994)

PROFESSIONAL MEMBERSHIPS

Secretary (1998-2001, 2005-) and former Chair (2002-2005) of the Institute of Acoustics Noise and Vibration Engineering Group

Former examiner (1998-2002) for the IOA Diploma Noise Control Engineering Module

Mike's expertise is in the assessment, prediction and control of noise and vibration from plant and equipment. Other skills include acoustic design, environmental acoustics and the assessment and control of vibration.

Mike has been an acoustic consultant for nearly 30 years with much of that time spent working in the power and petrochemical sectors. This has involved successful acoustic prediction, assessment and design of many large power projects.

Mike will be able to apply his direct experience of providing acoustic design solutions for large power projects. Mike has often observed that noise issues with power plants result from ancillary plant such as pumps, ventilation and cooling systems rather than the prime energy and generation systems.

Mike will also be able to draw on his extensive experience of engaging with stakeholders including presenting evidence at public enquiry to address issues of noise impact and perception.

RELEVANT PROJECT EXPERIENCE

Kings Lynn B
Acoustics lead for 1.4 GW power project through EIA, planning and DCO process. This has included prediction of expected noise levels and impacts and outline design of mitigations and control measures based on experience of similar projects

Abergelli 299MW OCGT Power Station, Abergelli Power Limited

Mike was the lead author for the 299MW Open Gas Cycle Turbine power station, located north of Swansea, South Wales. This has included prediction of expected noise levels and impacts and outline design of mitigations and control measures based on experience of similar projects

West Burton C and D
Acoustics lead for 300 MW and 50 MW peaking plants through EIA, planning and DCO process. This has included prediction of expected noise levels and impacts and outline design of mitigations and control measures based on experience of similar projects

Immingham Peaking Plant
Acoustics lead for 50 MW peaking plant through EIA, planning and DCO process. This has included prediction of expected noise levels and impacts and outline design of mitigations and control measures based on experience of similar projects

Jersey EFW
Acoustic design of energy for waste power plant building from planning to commissioning. Including review of suppliers

Devonport EFW
Acoustic review and troubleshooting for energy from waste design of power

Hinkley Point C Worker Accommodation
Contractor acoustic design of worker accommodation campus

General Electric Power Systems
Environmental and internal noise control audits and troubleshooting at 14 combined cycle gas turbine power plants throughout the world (UK, Spain, Italy, Thailand and Korea). This included transformer noise, steam pipework noise, cooling tower noise and noise produced by flow through large boiler installations

Kevin Webb

BSc (Hons), MSc, CEcol, MCIEEM

Associate Director

EXPERIENCE

Associate Director, AECOM, 2010 – Present

Principal Ecologist, Bureau Veritas UK, 2008 – 2010

Associate Ecologist, WSP Environment and Energy, 2007 – 2008

Senior Ecologist, RSK Environment, 2006 – 2007

Senior Ecologist, MKA Ecology, 2004 – 2006

Ecologist, MKA Ecology, 2002 – 2003

Bird observatory warden, Freelance Ecologist and researcher, 1999 – 2002

QUALIFICATIONS

BSc (Hons) 2:1 Zoology (Animal Ecology) University of Aberdeen

MSc Soil Science University of Aberdeen

ACCREDIATIONS

Natural England Barn owl licensed surveyor

Natural England great crested newt class and EPS licence holder

Natural Resources Wales (NRW) Schedule 1 licensed surveyor (9 species)

Scottish Natural Heritage Schedule 1 licensed surveyor (13 species)

AFFILIATIONS

Chartered Institute of Ecology & Environmental Management (CIEEM), Full Member and Chartered Ecologist

LANGUAGES

English

COUNTRY EXPERIENCE

UK, Thailand, Turkey, Poland, India, Azerbaijan, France, Egypt.

Kevin is a Chartered Ecologist with twenty years' experience of undertaking professional ecological work in a range of public and private positions. He started his career as the ornithological warden at Sandwich Bay bird observatory in 1999 responsible for the collection of bird census and bird ringing data and here had his first taste of consultancy being a self-employed ornithological surveyor.

He is currently responsible for the management of the AECOM ecology team in the south west and south Wales including overall responsibility for project delivery and technical input but works as required across the country on schemes which require technical input. Kevin has particular expertise in ornithology (including extensive international experience), and has contributed to more than sixty EIA chapters for ornithology and ecology through survey work and technical input. He is familiar with the process of DCA applications and has been recently involved on a number of DCO projects. He still regularly undertakes fieldwork for a variety of ornithological schemes and has maintained his A- licence for bird ringing for the last twenty-five years. He holds barn owl survey and ringing licences for England and Wales and has recently held project specific NRW Schedule 1 survey licences for 9 species and SNH Schedule 1 survey licences and BTO ringing licences for a further 14 species.

He is also very experienced with protected species survey and mitigation (design and implementation) and currently holds two great crested newt EPS Development Licences. Kevin is very experienced in preparing Ecological Impact Assessments as part of the EIA process and has also reviewed more than one hundred Chapters for legal and policy compliance on behalf of planning authorities and developers. Kevin has appeared as an expert witness at public inquiry and has further experience of speaking and presenting evidence at a range of public consultation events for a variety of developments.

He has extensive experience of giving technical evidence at a range of public forums including planning and Council meetings.

RELEVANT PROJECT EXPERIENCE

POWER AND ENERGY

Winfrith Atomic Energy Establishment 2018 – ongoing

Undertaking a suite of breeding bird surveys to establish the presence and to provide territory maps for land within Winfrith AEE and along the route of the outfall at Arish Mell to inform the proposed decommissioning. Also acting as the clients ecological representative at stakeholder meetings to discuss the proposals for habitat creation post demolition.

Abergelli Power Station – Stag Energy 2017 – ongoing

Kevin was the lead author for the ecology chapter for a 299MW Open Gas Cycle Turbine power station, located north of Swansea, South Wales. Kevin oversaw the ecological survey work to inform the proposed application for a new peaking power plant near Swansea in South Wales. Acted as approver for technical reports and ecology chapter within the EIA and is currently engaged on the DCO examination process.

National Grid Visual Impact Provision 2015 - ongoing

Ecological project manager overseeing the fieldwork and deliverables required to inform the potential undergrounding of existing overhead lines in three Areas of Outstanding Natural Beauty across the UK. Planning consent has recently been granted and pre-construction licenses for bats and dormouse are currently being prepared.

National Grid Flood Defence Scheme, Upper Boat Trefforest, 2015 – 2018

Ecological manager to support the permitted development works to protect this substation from potential flood events. Included work to manage the presence of great crested newts through habitat management and working to a method statement.

Glyn Rhonwy Pumped Hydro Electric Scheme, Llanberis North Wales, 2013 – 2017 (Snowdonia Pumped Hydro)

Development to convert a series of disused quarries into a hydroelectric scheme. Managed all ecological and ornithological aspects of this proposed development including liaison with statutory bodies and production of technical reports including DCO application, EIA chapters and Habitats Regulations Assessments and preparing evidence for the EIP.

National Grid North Wales Connection, Anglesey, 2015 - ongoing

Acting as technical reviewer for ornithological aspects of the deliverables and attending project and stakeholder meetings as required to provide ornithological input. Schedule 1 licensed surveyor and team leader for all licensed surveys to inform the proposal for this new overhead line across Anglesey.

Liberty Steel, Newport, 2015 - 2017

Managed the ecological elements of this baseline ecological assessment to inform the potential construction of new power infrastructure including undertaking Schedule 1 licensed peregrine nest inspections and undertaking intertidal surveys to satisfy the requirements of Natural Resources Wales with regard to impacts on the nearby Special Protection area and Ramsar site.

Lekela Projects – Ras Gharib Wind Farm, Egypt 2016

Undertook independent review of locally produced ornithological baseline reports on behalf of client to ensure compliance with best practice and IFC Performance standards.

Tyrone – Cavan Interconnector Project, 2012 - 2015

Managed the ecological input into the assessment of effects associated with the construction of this 34km 240 kV overhead line in Northern Ireland between 2012 and 2014. Draft Environmental Statement has been prepared. Joint Environmental Report detailing impacts within Northern and southern Ireland is currently being prepared for the whole of the 137km route. Current role includes providing advice on ornithological effects.

Tata Flue Gas Power Station, Port Talbot, 2013 – 2015

Managed the ecological input into the Ecology chapter of Environmental Impact Assessment including Habitat Regulations Assessment Screening Report to be submitted as part of a planning application for internal power generation enhancement for Port Talbot Steelworks; mitigation for which included a translocation programme for slow-worm and common lizard and the plant kidney vetch.

Borusan Balabanli wind farm – Northern Turkey

Undertook initial feasibility surveys for a proposed 35 turbine scheme in northern Turkey. Work involved breeding bird surveys, Vantage Point surveys and identification of suitable survey areas and Vantage Points for further seasonal survey work.

Four Confidential Wind Farm Sites, Highlands, Scotland, 2012 – 2015 (EON)

Managed the ornithological and ecological elements of the fieldwork to support the proposed development of four wind sites totaling more than 100 turbines at four sites in the Scottish Highlands.

Gloucester Residual Waste Project, 2012 -2103

Undertook a review of the ecological aspects of this project on behalf of the planning authority to identify any potential issues relating to the development which included an assessment of air quality effects on habitats.

Stoneton Wind Farm Development, Northamptonshire 2011 – 2014 (EDF)

Managed all aspects of this proposed 12 turbine development in Warwickshire. Work involved designing and implementing a full suite of ecological surveys including [redacted], bats, otters and water vole and subsequent reporting.

Four Confidential Wind Farm Sites, Argyll Scotland, **2012 – 2015 (EON)**

Managed the ornithological and ecological elements of the fieldwork to support the proposed development of four wind sites totaling more than 100 turbines at four sites in Argyll.

Photo Voltaic (PV/Solar) Farms, Various sites across UK 2010 – 2011

Managed the ecological aspects of 15 potential PV sites which included site feasibility assessments and Phase 1 Surveys.

Confidential Wind Farm Site, Wales, 2011 – 2012.

Managed the ecological input for this proposed 12 turbine scheme. Phase 1 Habitat survey and bat habitat assessment to inform the site feasibility assessment. Further ecological surveys are proposed.

Cornwall Energy Recovery Centre, 2008 – 2010

Undertook review of submitted Environmental Statement to check for legal and policy compliance. Subsequently represented Cornwall Council as expert witness at Public Inquiry with regard to air quality impacts on habitats.

Dr James Riley
PhD, MSc, BSc, CEnv
Technical Director

KEY SKILLS

HRA, EIA, ecology/air quality interphase, heathland ecology

YEARS OF EXPERIENCE

20

QUALIFICATIONS

PhD, MSc, BSc, CEnv

PROFESSIONAL MEMBERSHIPS

MCIEEM

LANGUAGES

English

COUNTRY EXPERIENCE

United Kingdom

Dr James Riley leads AECOM's national Habitat Regulations Assessment practice workstream. He has lectured on HRA at Imperial College London and provided training on HRA to local authorities and to the Royal Town Planning Institute. He has written articles on HRA for Planning Magazine, produced HRA case studies for Natural England and provided advice on the HRA process to local authorities via the Planning Advisory Service. He has given evidence at Examination in Public (for Local Plans produced by Vale of White Horse, Wycombe District Council, New Forest National Park Authority, East Hampshire District Council and others), Public Inquiry (on behalf of Veolia Environmental Services Ltd) and Consistory Court (on behalf of Thames Water). James' primary role is to coordinate standards and technical knowledge within the AECOM HRA discipline group and to supervise and technically review much of the HRA work undertaken by the company. He continues to be involved in undertaking HRA work for clients of all types. He has worked on over 200 HRAs since 2006. James has led the HRA work on numerous high profile projects including the Thames Tideway Tunnel, the expansion of Seabank Power Station, the expansion of the Army Training Estate at Salisbury Plain SAC/SPA, the undergrounding of powerlines across the New Forest SPA and SAC and dozens of projects on behalf of both applicants and local authorities.

James has a particular interest in the ecological interpretation of air quality modelling work and is currently leading an authorship team for the UK Chartered Institute of Ecology & Environmental Management and Institute of Air Quality Management producing air quality impact assessment information for ecologists.

SELECTED PROJECT EXPERIENCE

Abergelli 299MW OCGT Power Station, Abergelli Power Limited

James was the lead author for Habitats Regulation Assessment for a 299MW Open Gas Cycle Turbine power station, located north of Swansea, South Wales.

Damhead Creek Power Station, Natural England, Kingsnorth, 2016

AECOM provided assistance in interpreting the ecological effects on internationally important wildlife site of emissions from a proposed new 1800MW Combined Cycle Gas Turbine with Open Cycle Gas Turbine at Damhead Creek Power Station, near the decommissioned Kingsnorth Power Station in Medway. James provided the technical interpretive advice and enabled Natural England to conclude that emissions from the project would not lead to adverse effects on any internationally important wildlife sites despite the proximity of Medway Estuary & Marshes SPA/Ramsar site. This was due to the relatively low sensitivity of the habitats within that European site to changes in atmospheric nitrogen deposition.

Veolia Rye House, Veolia Environmental Services, 2015-2017

AECOM undertook air quality modelling and ecological interpretation to support the planning application and UK Environment Agency permit for a new Energy from Waste Facility in Hertfordshire, England, on behalf of Veolia Environmental Services. James' team provided the technical ecological interpretive advice for the air quality modelling work and enabled Natural England and the Environment Agency to conclude that emissions from the project would not lead to adverse effects on any internationally important wildlife sites.

Misson Exploratory Wells, IGas, 2015-2016

AECOM undertook air quality modelling and ecological interpretation to support the planning application and UK

Environment Agency permit for some exploratory shale gas wells in Misson, Nottinghamshire, on behalf of IGas. The emissions were associated with the operation of the generators during the drilling process. James' team provided the technical ecological interpretive advice for the air quality modelling work and enabled Natural England and the Environment Agency to conclude that emissions from the project would not lead to adverse effects on any internationally important wildlife sites. In order to obtain permission for this application the work involved undertaking ecological survey to confirm the absence of rare lichens, ecological nitrogen deposition modelling interpretation and a commitment to undertaken ecological monitoring of an adjacent Site of Special Scientific Interest to verify the results of the modelling.

Seabank Power Station: SSE, Severnside, 2013 - ongoing

SSE is preparing a DCO application for expansion of the Seabank Power Station. This power station is adjacent to the Severn Estuary SAC/SPA/Ramsar site. There is therefore the potential for an effect on the interest features of the European sites through air quality, disturbance and water quality impact pathways. James led on the HRA (called a No Significant Effects Report in Planning Inspectorate terminology) for the Preliminary Environmental Information Report stage of Development Consent Order application. His knowledge and experience of HRA in these situations and is established relationships with Countryside Council for Wales and Natural England enabled a conclusion of no likely significant effect.

Versalis decommissioning: Versalis, Hampshire, 2014

James led on the HRA for decommissioning of the 35ha Versalis plant at Hythe, Hampshire. The plant is located adjacent to the Solent & Southampton Water SPA/Ramsar site. Decommissioning therefore presented the potential for disturbance and water quality impacts on the SPA/Ramsar site. Through his knowledge of key impact pathways (e.g. noise disturbance) and close liaison with Natural England James was able to secure agreement that no likely significant effect would arise.

Visual Impact Provision, National Grid, New Forest, 2015-ongoing

AECOM has been working with National Grid since 2015 on a proposal to underground powerlines in the New Forest National Park in order to reduce their visual impact. The project is ecologically complex since the New Forest is also an internationally important wildlife site with many sensitive habitats, complex sub-surface hydrology and rare disturbance-sensitive species. The project will consist primarily of open cut trenching through the internationally important heathland. James has managed all the ecological work including the ecology components of the Environmental Statement and the Habitat Regulations Assessment. He has also liaised extensively with stakeholders such as Natural England.

Thames Tideway Tunnel: Thames Water, London, 2011 - 2014

The Thames Tideway Tunnel is one of the largest engineering projects planned for the UK. It is a Nationally Significant Infrastructure Project that involves creating a 12km tunnel below the River Thames that will store untreated storm water and sewage effluent during periods of high flow until such time as it can be pumped for treatment to London's sewage treatment works. Downstream of the tunnel is the Thames Estuary & Marshes SPA/Ramsar site. It was therefore necessary for an HRA to accompany the Development Consent Order application which analysed the likely water quality effect on the SPA from the tunnel. James led on this aspect of the application which involved lengthy discussions with Natural England, Environment Agency and the Marine Management Organisation and the Planning Inspectorate (who would be determining the application). It was ultimately agreed that the water quality effects would not result in a likely significant effect on the SPA/Ramsar site.

M3 Smarter Motorways: Highways England, Surrey, 2014 - 2015

The Smarter Motorways scheme is intended to increase capacity flows on the M3 in Hampshire/Surrey by using the hard shoulder as a running lane. At Chobham in Surrey this involves an increase in traffic flows through the Thames Basin Heaths SPA (with associated noise and air quality impacts) in addition to construction work adjacent to the SPA. James led the HRA work and gained the agreement of Natural England that despite some increases in noise and air pollution a likely significant effect would not arise on the Dartford warbler, nightjar and woodlark populations for which the SPA is designated.

Thames Estuary Re-energising Schemes, National Grid, 2010

James managed the ecological studies, leading to the production of draft and final Environmental Reports, for two schemes to reinforce the 12km electricity transmission system,

both in and adjacent to the Tilbury Power Station complex, including the creation of a new substation.. James' team undertook ecological surveys of the route and the footprint of the substation and supervised the retention of water vole habitats and the translocation of a large reptile population.

Army Basing Plan: Defence Infrastructure Organisation, Salisbury Plain, 2014 – 2015

Salisbury Plain is the British Army's primary training estate in the UK. It is also an internationally important wildlife site (SAC/SPA). In order to meet future military requirements, it is necessary for extensive redevelopment of the garrisons around the Plain, delivery of new service family accommodation and improvements to some of the training infrastructure. Since this involves development work within a very sensitive wildlife site James was appointed by the Defence Infrastructure Organisation to liaise with Natural England, the Environment Agency, RSPB and the local planning authority (in addition to DIO themselves as a 'competent authority') to undertake the HRA, agree any mitigation required and try to achieve this while avoiding any need to trigger the Imperative Reasons of Over-riding Public Interest and No Alternatives tests which would have significantly delayed the Army's programme. This was a complex situation that required detailed discussion with consultees but ultimately it was agreed that an adverse effect on the integrity of the SAC/SPA could be avoided with suitable mitigation in place. This enabled the Army's programme to remain on track.

Dr P Jane Sladen

BSc (Eng) Hons, MSc, PhD, MICE (CEng)

Technical Director, Groundwater

EXPERIENCE
>25 years' experience

QUALIFICATIONS
BSc (Eng) Hons, Civil Engineering, MSc Hydrogeology, PhD Groundwater Modelling, MICE (CEng), AIEMA, FGS

LANGUAGES
English (Mother tongue)
French (Fair)

COUNTRY EXPERIENCE
UK, Europe, Africa, Middle East, Canada

CERTIFICATIONS
AECOM Certified Project Manager

Jane Sladen is a hydrogeologist and Chartered Civil Engineer with over 25 years' experience in groundwater hydrology. Her expertise includes groundwater resource assessment, impact assessment, groundwater quality evaluation and pollution, groundwater control and quarry, mine and construction site dewatering. She has undertaken hydrogeological impact assessments for major infrastructure projects including tunnels, highways, quarries, mines and airports and is involved in the Abergelli Power Gas Fired Generating Station DCO process. She has carried out evaluation of construction and operational impacts and water supply resource availability and sustainability studies. Environmental Statements have been prepared and Expert Witness services provided for clients in the UK, Ireland and Africa in relation to groundwater flooding and mine and quarry developments.

Dr Sladen has worked on DCO projects as overseeing consultant for water resources and water quality where responsibilities included preparing documents for public consultation and supporting the DCO process; liaising with the client, the Environment Agency, designers and environmental teams during consultation. She is currently the hydrogeology and groundwater lead for a new road and tunnel past the Stonehenge World Heritage Site for which responsibilities include preparation of scoping, preliminary environmental report and impact assessment for the DCO submission in consultation with engineering design teams and key stakeholders.

Jane also has experience of environmental monitoring and permitting of facilities including deep onshore oil and gas wells. She is currently involved with hydrogeological risk assessments for new and existing facilities and environmental appraisals for new developments in the UK.

RELEVANT PROJECT EXPERIENCE

Abergelli Power Project, Abergelli Power Limited – Environmental Statement (2018)
Technical Director responsible for the team working on the Water Quality and Resources and Flood Risk chapter and Water Framework Directive assessment for the ES.

A303 Stonehenge, UK, 2017-2018

Hydrogeology and groundwater lead for new road and tunnel past Stonehenge world heritage site. Responsibilities include preparation of scoping, preliminary environmental report and impact assessment for the DCO submission. Development of conceptual site models and groundwater monitoring programmes. Interface with engineering design teams and key stakeholders including the Environment Agency.

HS2 Environmental Overview Consultant (EOC) for Groundwater, 2012-2015

AECOM was responsible for overseeing the work of the EIA consultants across the HS2 scheme. Dr Sladen had the role of groundwater EOC. Responsibilities included liaising with the client, the Environment Agency, designers and environmental teams to ensure consistency and best practice whilst delivering a cost effective scheme with realistic and built in mitigation wherever possible. Project manager and author of Water Framework Directive assessment for the Phase One environmental statement consultation in support of the DCO process.

Boliden Tara Mines Oral Hearing Expert Advice for Tailings Dam Extension, Ireland 2017

Expert responsible for preparation and delivery of a formal submission covering hydrological and hydrogeological aspects of a tailings dam extension. Attendance at an oral hearing held by An Bord Pleanála on the proposed TSF Stage 6 development.

Thames Tideway Tunnel, Thames Water (2008-2016)

Project director and technical expert for the hydrogeological impact assessment of 25 km tunnel through the London Basin, involving tunnel construction impacts at depths to 70 m, shaft dewatering and water quality in the Chalk; a major aquifer used for public water supply. Engagement with stakeholders (the EA and groundwater abstractors) and designers; preparation of documents for public consultation in support of the DCO process, and development of monitoring, sampling and mitigation strategies.

Silvertown Tunnel Tender Design, London (2017-2018)

Hydrogeologist responsible for groundwater and dewatering aspects of tunnel beneath River Thames in London. Deliverables include dewatering assessment, groundwater control, groundwater quality and discharge impacts for cut and cover sections and tunnel launch chambers as well as cross passages. Preparation of a Groundwater Monitoring and Verification Plan for environmental compliance.

Confidential Project - Baseline Groundwater Monitoring At Proposed Unconventional Gas Site, North West UK (2016 – Current)

Project Director overseeing methodology for establishing the hydrogeological baseline conditions at a proposed onshore unconventional oil and gas site. Services include conducting baseline monitoring programme to monitor dissolved gases, groundwater quality, groundwater isotope analysis and groundwater levels.

Mercers South Quarry, 2008-2015

Project manager and author of hydrological and hydrogeological impact assessment in support of planning application for sand quarry excavation and restoration in the Folkestone Formation. The proposed development involves open pit dewatering from a principal aquifer during operation with restoration by backfilling. Dr Sladen was responsible for hydrological and hydrogeological elements of the environmental statement, baseline monitoring design and input to scoping and consultation documents. Consultation with the Environment Agency and water company. Management of flood risk assessment and geotechnical assessment of quarry and land bridge between quarry and lake.

Chingola Open Pit Mine Dewatering Adjudication, Zambia (2012)

Preparation of technical reports and adjudication advice on behalf of Zambia Copper Mines (ZCM). Site visit, data interpretation and preparation of advice for the Hearing. A successful outcome with the Adjudicator ruling in favour of ZCM.

Groundwater Flooding, Bedfordshire (2009-2011)

Preparation of technical reports, expert witness statements, proof of evidence and support to mediation on behalf of Wates Construction Ltd following a claim by residents suffering groundwater flooding. Dr Sladen also prepared Memoranda of Agreement with client, designer and claimants' hydrogeological experts. Settled out of court in 2011.

Design Manual for Roads and Bridges HD 45/16 on road drainage and the water environment (2015)

Technical groundwater input to new standard giving guidance on possible impacts on the quality of water bodies and on the existing hydrology of the catchments through which roads pass. The document supersedes 'HA216/06 Road Drainage and the Water Environment' and updates HD45/09 in order to reflect changes in water legislation including the Water Framework Directive (WFD).

Richard Knott

BSc MSc MCSM CGeol FGS CEng MIMMM SiLC

Technical Director

KEY SKILLS

Phase I site conceptualisation
Phase II reporting
Environmental Statements – Geology / Land Quality
Ground Investigation Design, supervision and management
Land Quality Assessment
Metalliferous Mining Contamination Assessment
Mining Geology & Hydrogeology
Contaminated Land Regulatory Regime
Regulatory Negotiation
Site Liability Assessment
Phase III Remediation Options Appraisal
Sustainable Remediation
Third Party Peer Review

QUALIFICATIONS

BSc (Hons) Geology
MSc Mining Geology
Master of the Camborne School of Mines

ACCREDIATIONS

Chartered Geologist
Chartered Engineer
Specialist in Land Condition
National Quality Mark Scheme for Land Contamination Management Suitably Qualified & experienced Person (SQP)

SC Level Security Clearance

LANGUAGES

English

COUNTRY EXPERIENCE

UK

Richard is a Technical Director within AECOM's Environmental Liability Solutions discipline. He is a Chartered Engineer, Chartered Geologist and Specialist in Land Condition with more than 27 years of environmental consultancy experience.

In 2017 Richard also qualified as a Suitably Qualified and experienced Person (SQP) under the newly introduced "National Quality Mark Scheme for Land Contamination Management" (NQMS). The NQMS has been introduced to promote "increased confidence and improved quality" of reports submitted for potentially contaminated sites and is particularly aimed at Developers bringing sites forward for redevelopment through the Town and Country Planning regime.

Richard has a broad environmental consultancy background across a range of client sectors. He has undertaken, managed and directed a large number of environmental assessments for private and public clients. Major projects include contaminated land assessment and advice for the downstream Oil and Gas Sector, Industrials and Power Sectors, UK Public Sector including Ministry of Defence, Environment Agency and Local Authorities, as well as Planning, EIA and environmental permitting application support and compliance. Richard's work on Defence projects has included Land Quality Assessments for divestment sites and the operational military training estate.

Richard has recently worked on EIA projects for major infrastructure projects, including a proposed railway reinstatement, mine water treatment schemes, new gas-fired power station sites, electricity grid connectors, and gas, water and effluent pipeline routes.

Richard provides technical advice to the Environment Agency, Natural Resources Wales and Local Authorities on contaminated land and metalliferous mining sites. He seeks to use his knowledge of the Regulatory Authorities' perspective to pursue open and collaborative relationships with clients, contractors and regulators. This open approach is often a key factor in the agreement of appropriate solutions to the problems of brownfield land assessment and remediation.

RELEVANT PROJECT EXPERIENCE

Abergelli 299MW OCGT Power Station, Abergelli Power Limited. Richard was the lead author for Geology, Ground Conditions, and Hydrogeology chapter for a 299MW Open Gas Cycle Turbine power station, located north of Swansea, South Wales.

Bere Alston - Tavistock Railway Environmental Statement. Devon County Council. Project Director accountable for the delivery of the Land Quality and Ground Conditions chapter of the Bere Alston to Tavistock Railway Environmental Statement.

The proposed heavy rail reinstatement will establish a new commuter service to Plymouth.

Richard collaborated closely with the client and other technical disciplines, especially water resources, to deliver an assessment of potential geological and land quality impacts (incl. waste characterisation / re-use of former trackbed / ballast) in the Tamar Valley Area of Outstanding Natural Beauty (AONB) and UNESCO Cornwall and West Devon Mining Landscape World Heritage Site. The proposed reinstatement now has a full Environmental Impact Assessment ready for submission when funding allows the project to be taken forward for development.

Tidal Lagoon Swansea Bay – South Wales

(2012-2014): Richard provided the lead role in the assessment of geological, land contamination and hydrogeological conditions for the onshore development areas for the £1.3bn Tidal Lagoon Swansea Bay project. The assessment included examination of the geology at the enclosing lagoon wall landfalls and for the 3-5km long grid connector options.

A detailed conceptual model was developed for impacts on groundwater flow and discharge through the landfalls and inter-tidal zones – areas of critical importance for the transport of onshore contamination sources to the marine environment and for impact on groundwater discharge and potential saline intrusion. The site was adjacent to two SSSI, with the grid connector passing through part of Crymlyn Burrows SSSI (designated as an area of shoreline intertidal habitats and flanking sand dunes). Richard led the preparation of the PEIR and ES chapters. Feedback from legal and technical review required minimal changes to the chapter.

The British Ironworks Reclamation Options, Talywain - Torfaen County Borough Council (2017 - Ongoing): Richard is leading a multi-disciplinary feasibility assessment for the regeneration of a largely derelict 120ha industrial site in South Wales. The former ironworks and colliery site includes features of significant heritage interest (listed buildings, Scheduled Ancient Monument), extensive areas of colliery spoil tips and ironworks slag heaps, shallow coal mine workings and over 80 unsecured mine shafts and levels.

AECOM provided advice on the feasibility and costs of various regeneration options, including the return of culverted and mine drained site drainage to newly created surface water drainage channels and flood attenuation wetlands.

Visual Impact Provision (VIP) Project, National Grid (2016 - Ongoing): Richard is leading four teams providing the geology, land quality and hydrogeology assessment for four transmission line routes in UK National Parks and Areas of Outstanding Natural Beauty (AONB).

The £500m VIP scheme aims to remove sections of overhead transmission line in areas of sensitive landscape value, and place the high voltage cables underground. Key areas of assessment include the potential impact on groundwater, especially the provision of new groundwater flow pathways and spring discharges, direct drilling / tunnelling beneath rivers and potential disposal / re-use assessment for contaminated soils and construction materials that might be encountered along each cable route. The four VIP schemes include:

- Approximately 8km of cable route in the Dorset AONB. Particular emphasis on the route alignment across the Chalk Principal Aquifer and potential for contamination of the aquifer and release of groundwater from new springs created by the trenching works.
- Approximately 4km of cable route in the New Forest National Park, with emphasis on the potential impacts on the sensitive wetland and mire ecosystems that depend on groundwater discharge from local terrace gravel deposits.
- Approximately 2km of cable route and 4km of access road in the Peak District National Park, including evaluation of potential land contamination risks associated with installing cable trenches along a former railway alignment.
- Approximately 3km of cable route in the Snowdonia National Park, including requirement for tunneling beneath the 1,400m wide Dwyryd estuary.

Richard is coordinating AECOM geology / land quality delivery teams and collaborating with the client, other technical consultancies and National Grid's Front End Engineering Design (FEED) contractor. The ongoing work involves assessment of geological constraints and impacts for each route, including horizontal directional drilling (HDD) and / or tunnelling aspects, for river, estuary and rail route crossings. Collaborative relationships between the multi-disciplinary teams have already resolved some complex issues and satisfied regulators / land use stakeholders that appropriate assessment and solutions will be a core part of these schemes.

Gas Fired Power Station Development, South West Wales (2017-Ongoing) Richard is Project Director for the preparation of the geology and ground conditions chapter for a new 200-300MW gas fired power station near Swansea. The work has included assessment of the geological conditions, potential for land contamination and potential impacts of underground coal mining.

Richard has also assisted the ecological assessment team through the identification and on-site inspection of a recorded mine shaft that was suspected a potential bat hibernation or roost site.

Defra / Environment Agency / Coal Authority Water and Abandoned Metal Mine (WAMM) Programme. Richard leads AECOM's UK "Mining Legacy" team, including river catchment characterisation for the EA and NRW, and WAMM Programme mine water treatment feasibility, scoping, design and regulatory consenting. He has also delivered contaminant hydrogeology catchment characterisation training to the Scottish Environmental Protection Agency (SEPA). Richard has been a key player in the coordination and leadership of remediation projects for the Cumbrian Nent Valley lead-zinc mines.

He provided influential leadership of technical presentations to local stakeholders and the public, developing a trusted position with the local community. This was based on an open, honest and technically rigorous approach to the design and stakeholder engagement for the proposed development(s). The work includes partnership with academic institutions and piloting of innovative emerging treatment technologies, such as compost based bio-reactors and odour control / mitigation for heavy metal contaminated waters. Our work has included collaboration with Newcastle and Hull universities and also with our global network of technical experts, especially in the United States, Europe, South Africa and Australia.

Tamar Visual Impact Provision (VIP) Project National Grid (2015 - 2016): Richard led a team of specialists in the review of electricity transmission line route options in the Tamar Valley Area of Outstanding Natural Beauty (AONB). The Tamar Valley AONB area ranked highest in a National Grid assessment of landscape impacts across England and Wales. AECOM reviewed the geological and contamination conditions applicable to the route options and made recommendations for route selection and mitigation options. The route crosses two estuaries that are designated as SAC, SPA and SSSI and MCA.

Proposed CCGT Power Station / former Chlor-alkali Works redevelopment – South Wales. (2011-2013): Richard was Project Director for the discharge of Electricity Act Planning Conditions relating to ground conditions and land contamination at a proposed CCGT power station in south Wales, including the relevant grid connector and water, gas and effluent services corridors.

The work was undertaken as a series of staged assessments, with relationship building involvement of the regulators at each stage. The project required the investigation, risk assessment and remediation of mercury contaminated soils, which was achieved at a fraction of the budgeted cost through the use of high quality and detailed consultancy and risk assessment process.

Seabank Power Station, SSE (2013-2015):

Richard led the assessment of ground conditions for the proposed expansion of Seabank Power Station in Severnside, Gloucestershire and land contamination assessment for the linear effluent pipeline route. This project will be negotiating the Development Consent Order consent process and is situated adjacent to the Severn Estuary SAC/SPA/Ramsar site.

The proposed site is located adjacent to a former ICI chemical manufacturing plant and the pipeline route crosses close to many potentially contaminated sites within the heavily industrialised Avonmouth area, including a former mustard gas manufacturing plant.

Metal Impacted Catchment Characterisation Reviews – Environment Agency. Richard led a review of internal eight EA Catchment Characterisation reports completed under the EA WFD Metal Mines Programme. These reviews included the Red River, Portreath Stream and River Hayle catchments in Cornwall. The reviews provided constructive comments on individual catchment reports, but also identified generic improvements that could be made to the conceptualisation, data acquisition and data interpretation process. AECOM were additionally asked to provide over-arching comments to improve EA internal guidance on "How to do a catchment characterisation under the WFD abandoned metal mines project".

Operational Petroleum Refinery – South Wales (2008-2011):

Richard developed the design of a Site Protection and Monitoring Programme for a large petroleum refinery in South Wales. The Design SPMP assessed the potential for land contamination arising from the process activities listed in the Permit Application Site Report. Richard developed a monitoring programme utilising approximately 55 existing groundwater monitoring wells and 20 new wells.

The work was subject to stringent process industry Health and Safety protocols, Permit to Work and regular client HSE audit.

Richard subsequently supported the client in the investigation, assessment and regulatory discussions relating to the management and remediation of LNAPL and dissolved phase hydrocarbons, MTBE and phenol contamination in a fracture

flow aquifer. The work included developing a detailed understanding of fuel blends, chemistry and NAPL properties, as well as the behaviour of the complex fracture flow hydrogeological regime and groundwater / surface water interactions. The work culminated in workshops with US and UK corporate client team and regulatory presentations.

The final aspect of the project was as project lead for the geology and ground conditions chapter for a gas pipeline EIA between the refinery and a new gas powered power station.

Speciality Chemical Manufacturer – South Wales (20011-2017):

Richard is the Project Director for a project supporting a client seeking to close an active speciality chemical manufacturing plant, surrender the site EP Permit and dispose of the site for re-use or redevelopment.

The site is the subject of a long-running programme of Monitored Natural Attenuation (MNA) for chlorinated solvents, BTEX compounds and phenols, which has been implemented by AECOM. Site closure requires that the MNA programme is replaced by a more detailed programme of source delineation and pathway characterisation, with a view to the development, agreement and implementation of a remedial strategy. The project has included:

- Installation of additional groundwater monitoring wells and collection of soil samples for a Site Condition Report
- Extended monitoring of existing and newly installed wells
- Evaluation of a detailed, 10-12 year groundwater monitoring dataset
- Assessment of human health and controlled waters risks associated with TPH, BTEX, phenols, alcohols, and chlorinated solvents, including DNAPL.
- Delineation of source areas
- Remedial options appraisal & regulatory negotiation for remediation strategy
- Site Remediation to allow Environmental Permit surrender

This project is ongoing and will require the development of a Land Quality Assessment Report for site disposal, Site Condition Report for EP permit surrender and Remedial Strategy report for remediation necessary for permit surrender / site disposal.

Ruth Mauritzen
BSc (Hon) MLA CMLI
Associate Director

KEY SKILLS

Landscape and Visual Impact Assessment, Townscape Assessment, Landscape Planning and mitigation design

YEARS OF EXPERIENCE

20

QUALIFICATIONS

Master of Landscape Architecture, Edinburgh College of Art 1998

BSc Hons Environmental Science, University of Stirling 1995

PROFESSIONAL MEMBERSHIPS

Chartered Member of the Landscape Institute

LANGUAGES

English

COUNTRY EXPERIENCE

United Kingdom, Rebublic of Ireland, St Helena Island, Bratislava, Turkey

Ruth Mauritzen is a chartered landscape architect and environmental scientist. Ruth has 20 years' experience within the landscape profession working for both public and private sector clients in the UK and overseas.

Ruth has a wide range of experience in landscape, townscape, seascape and visual assessment as well as design and planning advice for a variety of schemes, including power generation and transmission (power stations, sub-station and converter stations, long distance cable and pipeline routes, overhead lines), renewable energy (wind, hydro, solar, biomass), major infrastructure developments (airports, highway, heavy and light rail), masterplans and residential developments. Ruth has delivered these projects from site and route optioneering to consultation, assessment, design mitigation, post planning support and monitoring compliance during construction.

Ruth's considerable and varied experience in LVIA reflects her expertise in working closely in multi-disciplinary teams to ensure that a fully integrated and flexible approach to design and assessment is achieved.

Ruth has acted as an expert witness at Public Inquiry and Hearings and so understands the necessity for robust and rigorous work which can withstand challenge and scrutiny at all stages of the planning and construction process.

RELEVANT PROJECT EXPERIENCE

Abergelli Power Plant DCO
Client: Abergelli Power Ltd.
Ruth is the technical author of the landscape and visual assessment for this Simple Cycle Gas Turbine (SCGT) peaking power generating station in south Wales. The assessment has involved consideration of the LANDMAP Aspect areas in relation to affects associated with the various components of the Power Generaiton Plant as well as a detailed visual and cumulative assessment alongside close liaison with the regulatory authorities. Landscape mitigation has been developed as part of the iterative design and assessment process with an integrated landscape and ecological management plan developed to establish a collaborative and cohesive approach to the site wide mitigation requirements. Ruth is the expert landscape witness providing evidence through out the DCO examination and hearing.

Glyn Rhonwy Pumped Storage DCO
Client: Snowdonia Pumped Hydro
Ruth provided technical landscape and visual advice during the DCO process including the examination period for this pump storage hydro scheme in the Snowdonia National Park. She authored the LVIA for the DCO submission and responded to technical questions during the examination. An integrated approach to the design and assessment of this scheme helped to ensure that careful siting and design of the slate mounds and access roads minimised impacts on views and the sensitive landscape of the National Park. An EMP was also produced into which Ruth provided the landscape components. The scheme has been consented.

The Yorkshire and Humber CCS Cross Country Pipeline DCO
Client: National Grid

Ruth has provided the technical review and landscape project management for the development of an 80km pipeline and associated infrastructure for the Carbon Capture and Sequestration project in Yorkshire and Humber. Ruth has provided a technical review role for the LVIA and provided expert landscape advice during the DCO examination process.

Western HVDC Link
Client: National Grid and Scottish Power
Ruth was responsible for the route optioneering and subsequent management of the LVIA of the Scottish section of the project, including cable corridor and converter stations as well as general provision of landscape advice and design services. Ruth subsequently provided landscape evidence at the Compulsory Purchase Order hearing and has since provided landscape advice through the construction phase of the project, particularly in response to the design development of the converter stations and monitoring compliance during the construction phase of works.

Grove Farm Wind Turbine Development
Client: Nottingham University
Ruth was the technical reviewer of the landscape and visual impact assessment of the three wind turbine scheme on the outskirts of Nottingham within the Midlands urban context. Detailed landscape and townscape character assessments were produed for both the urban and rural parts of the study area along side a visual assessment incorporating a large number of residential receptors within close proximity to the scheme. Ruth subsequently provided expert witness services at the Planning Hearing.

King's Dock Swansea Biomass Power Station
Client: Bio E PLC
Ruth was responsibe for the landscape and visual assessment of the biomass power station at the docks in Swansea including production of outline landscape mitigation proposals to assist in the public realm interface within the docks. Ruth acted as the landscape expert witness at Public Inquiry.

Clachaig Glen Wind Farm
Client: E:ON
Ruth was the landscape technical reviewer and auditor of the landscape and visual impact assessment of Clachaig Glen windfarm in Argyll and Bute. Detailed review and audit at all stages of the LVIA process from scoping, survey work, site design advice to assessment including comprehensive cumulative and sequential wind farm assessments. Liaison with the regulatory authorities throughout the pre-submission process and preparation of the landscape aspects of the EMP. The public inquiry is due this spring and Ruth will be providing technical support to the expert witness reviewing all inquiry documentation.

Viking Link
Client: National Grid
Ruth provided the technical review role for the landscape and visual assessment of the onshore components of Viking Link which will provide an electrical connection between England and Denmark with a subsea cable, converter station and underground onshore cable. The cable route falls in part within the Lincolnshire Wolds AONB and the landscape assessment provided detailed mitigation measures for the integration of all onshore elements into this sensitive landscape.

Queen Elizabeth Olympic Park developments
Client: LLDC
As part of the townscape and visual impact assessment process for multiple developments within the QEOP, Ruth has written the TVIAs, landscape components of the Environmental Management Plans and Design and Access Statements prepared for the planning applications for each of the developments as well as responding to the various Reg 22 requests. All developments have been successfully consented.

Spiro Panagi
BSc (Hons) CMILT MCIHT
Associate Director

EXPERIENCE

Associate Director,Lead Transport Planner AECOM

17 years' of experience in the field of Transport Planning.

QUALIFICATIONS

BSc (Hons) CMILT

AFFILIATIONS

CMILT (Chartered Member)

LANGUAGES

English

COUNTRY EXPERIENCE

UK

Spiro leads the Transport Planning team in AECOM Cardiff. He has extensive experience of working on a range of development planning and transportation projects throughout the UK working on both developer and publicly funded schemes. He is a project manager with around 17 years' of experience in the field of Transport Planning.

Spiro's experience has been achieved over a wide array of market sectors, including projects within the renewable energy sector. The extent of his experience is enhanced by retained positions in a number of Local Authorities as a Development Control Highway Officer. Spiro's expertise in strategic sites and his wealth of experience in dealing with transport planning matters has been sought by public sector clients on secondment and consultancy basis.

The variety of projects within which Spiro has been involved has been challenging and his ability to identify, adapt and respond to unique situations has resulted in successes within the planning process. Spiro has prepared documents for formal and informal hearings and for inquiries on behalf of both private and public sector clients.

Spiro's relationship with key decision makers in the South Wales region provides clearer understanding of what is required from the onset.

RELEVANT PROJECT EXPERIENCE

The following summary of project experience has been selected to demonstrate the extent of current expertise. The chosen sites are recent, strategic and have included Environmental Statements and Assessments. Spiro is able to apply his expertise on both sides of the planning spectrum, enhancing his understanding of the strategic planning system.

Spiro has managed the teams who have delivered the following projects and transport planning services:

Abergelli 299MW OCGT Power Station, Abergelli Power Limited

Spiro has lead the transport planning team to the preparation of assessments and reports to submit as part of the DCO process. Environmental Statement and assessments were prepared in addition to site specific design of layouts and feasibility studies. Spiro and his team will continue to provide Expert Witness services on the project through the upcoming hearings.

Parc Mawr, Penllergaer Swansea

Project Manager for the delivery of AECOMs multi-disciplinary services to support a mixed used development. The development comprises around 850 new homes a 3 form entry primary school and nursery, community facilities and an integral relief road route to alleviate existing traffic pressure on critical points on the strategic highway network. Established working partnership with the City & County of Swansea to deliver the urban extension and regenerate the area providing a new heart to an area suffering from severance.

Transport Vision, Policy and Strategy Strategic Planning, Highways, Traffic & Transport, City of Cardiff Council – Appeal and Inquiry

Spiro was requested by Cardiff Council to support in the preparation of a defence against an appeal hearing. Spiro liaised with the applicant, worked with the defence barrister and prepared documents of the hearing.

Transport Vision, Policy and Strategy Strategic Planning, Highways, Traffic & Transport, City of Cardiff Council – Strategic Site Secondment

Spiro was appointed and has been retained by Cardiff Council to support them through the development control of their strategic LDP development sites. Responsible for the audit of planning submissions for key strategic sites such as Plas Dwr Garden City, Junction 33 Business Park and new settlement,

North East Cardiff Pontprennau, in total including around 12,000 dwellings, a 1,000 car park and ride scheme, gateway employment site, transport interchange hub, education and community facilities.

Gloucestershire County Council Highways Design Management

Spiro is currently supporting GCC in their management of applications for the Joint Core Strategy. At present he is involved in auditing assessments on a key housing allocation of around 5,000 houses and a number of schools. He is also guiding the developer of one the country's sites of high importance in the proposed expansion of GCHQ for a mixed used development in a congested Cheltenham network.

Filton Airfield, Bristol, BAE Systems and Bridgehouse Capital Ltd

Transport support on a strategically significant mixed use site, forming part of the Cribbs Patchway New Neighbourhood. The scheme includes around 2,600 new homes and supporting retail and commercial facilities. Transport Assessment support, Transport Input into the Environmental Impact Assessment, Junction design and traffic impact assessments.

Highway Authority Development Control, City and County of Swansea Council

Spiro has been appointed and retained to provide development control services to Swansea Council. Spiro audits student and residential accommodation and key regeneration projects such as the proposed Swansea Arena.

Newport Council Highways and Transportation

Spiro was commissioned to develop Newport's Residential Road Design Guide. This input is intended to create a new Supplementary Planning Guidance which will help to ensure that all developments are designed to Newport's requirements.

Project Heartland, Dowlais

Formed part of a team representing clients, Merthyr Tydfil County Borough Council and the Welsh Development Agency Department of Enterprise, Innovation and Networks (DEIN). The proposals sought to redevelop a site of approximately 12.3 hectares (30.5 Acres) for residential use. The services provided to the client team included masterplan support, Baseline Review Reports, Transportation Assessment and management of Town Centre Parking Studies.

NICK SKELTON

Director – Strategic Planning & Economics

MA (Social Science), University of Glasgow
MSc Urban Development, University of Strathclyde
Member, The Institute of Economic Development
Member, Economic Development Association

CAREER SUMMARY

Nick is an economist planner with 30 years' experience across the private and public sectors in Scotland and across all parts of the UK, the Republic of Ireland, Australia and Hong Kong.

He has acknowledged expertise in economic and strategy development, planning and economic analysis, regeneration planning, and infrastructure development. His work spans major development projects, area development strategies, major road, rail and canal infrastructure improvements, national and international visitor attractions, as well as renewable and other energy projects. He lectures in socioeconomic impact analysis and its EIA role at Dublin's Portobello Institute and has also presented to Institute of Environmental Management & Assessment seminars.

Nick has lengthy and broad experience of energy and industrial projects in his role as project manager. Examples include preparation of the socio-economic, tourism and recreation chapters of the Navitus Bay Offshore Wind Park ES, the Port of Leith EIA Socio-economic Chapter and the Port of Leith Masterplan. The latter scoped the North Sea oil and gas decommissioning market and examined the Port of Leith's suitability (and that of the surrounding labour market) for decommissioning services. He also directed the Riverside Inverclyde Energy Supply Chain Capability and Capacity Study which investigated decommissioning opportunities at James Watt Dock, Greenock.

He has also worked with National Grid, examining the socio-economic effects of transmission infrastructure improvements at Bridgwater – Seabank, Bramford-Twinstead, and Kings Lynn, and was part of the firm's team developing guidance for National Grid on the assessment of socio-economic impacts at different stages of the options development process. He also directed an ex post evaluation of the 2YL line.

Nick has also project managed the application process for wind farm schemes including a series of individual wind turbine projects (225 kW-500kW) across Scotland (here he also oversaw the swept path, noise and other related assessments); and windfarm developments of 6MW-12MW in Aberdeenshire and Dumfries & Galloway.

Over the last 20 years, Nick has prepared evidence and appeared at examinations and Inquiries covering topics including energy and other infrastructure, retail, residential and employment development in Scotland, England, the Republic of Ireland and the Isle of Man. He prepared and delivered the socioeconomic evidence heard at the Eye Airfield Progress Power NSIP DCO Inquiry, and has prepared written submissions for other on- and offshore wind developments

Nick has responsibility for development of PBAs economics offer across the UK.

SELECTED EXPERIENCE

Kendoon Tongland 132 kV reinfoircement, Scottish Power Energy Networks 2017 ongoing
Nick is directing the socioeconomic analysis of impacts associated with reinforcement of the network between Kendoon - Glenlee and Glenlee- Tongland in Dumfries & Galloway. He is working closely with lead consultants LUC with delivery of the ES chapter later in 2018.

Clashindarroch 2 , Vattenfall, 2017 - ongoing
Nick is directing the socioeconomic assessment of Vattenfalls proposed extension.. Alongside the core ES elements, he is preparing a strategy indicating the effects on community planning and related outputs from proposals for shared ownership, running in tandem with community benefits. The work will be completed

in 2019

Progress Power CCGT NSIP Socio-Economic Assessments
(Progress Power) 2014 -2015
Nick was project manager of the analysis of economic, social and community impacts for this 299 MW CCGT plant at Eye, Suffolk. Nick directed the socioeconomic assessment, including detailed labour market analysis and preparation of the ES Chapter. He provided expert witness evidence to the related hearing in October 2014. He also provided similar inputs for the application for a 299 MW plant in Hirwaun , S Wales.

Round 3 Zone 7 Navitus Bay Socio-Economic Assessment, (Eneco/EDF) 2012-14
Nick project managed the socio-economic assessment of Eneco's proposed Round 3 offshore wind development (0.9 - 1.2 GW when constructed and consisting of up to 300 235m turbines). This includes analysis of regional absorption capacity for supply chain impacts as well as assessment of tourism and visitor impacts. He also project managed the collection of evidence from comparator locations of the economic effects actually experienced from the construction and operation of offshore wind farms. This engaged local economic development officers and Chamber of Commerce representatives to gather information describing local economic conditions before and after the various schemes and their direct and indirect impacts.

INEOS Grangemouth Economic Impact Assessment, (Falkirk Council) 2013-14
Nick prepared an Economic Impact Assessment of INEOS-related petrochemicals activity at Grangemouth. This quantified INEOS related employment and the value of supply chain linkages at Falkirk and Scotland level. The work was also part of a national Scottish Enterprise and Scottish Government work package.

Port of Leith Master Plan Market Sector Review, Economic & Options Appraisal
Scottish Enterprise, City of Edinburgh Council & Forth Ports 2012-13
Nick was project director overseeing the economic inputs to the masterplan for Port of Leith's development as an offshore wind manufacturing and deployment hub. This involved preparation of a Market Demand Report to inform option development, a review of key industry sectors (decommissioning, offshore wind, other energy, oil & gas, cruise tourism and bulk cargo), assessment of their appropriateness in the Port of Leith context, and its capacity and capability. Key demand requirements were then identified to determine the extent to which they could be satisfied at the Port.

A full economic impact assessment was completed taking account of catalytic effects on the local and national economies (supply chain, labour market development, market profile and related opportunities).

South Kyle Wind Farm, Vatttenfall, 2012- 2015
An assessment of socio-economic and tourism impacts of large scale proposed wind farm development in Dumfries and Galloway/ South Ayrshire. Nick directed the work which included a review of the structure of the local economy including tourist, visitor and recreation facilities, and an assessment of impacts on local businesses particularly those in the tourist & recreation sector. Opportunities for job creation and socio-economic effects were also examined in the ES chapter. He gave evidence at the Hearing and Inquiry held in December 2015. The application was approved last year with economic considerations (including community benefit and shared wonership) given mnaterial weight in the decision.

Socio-economic Options Appraisal Guidance for Infrastructure Improvements, National Grid 2012
Energy generation capacity will be significantly extended as large scale offshore wind farms around the coast, their onshore counterparts and new nuclear power plants come on stream. National Grid is upgrading its electricity transmission and distribution network in response. Nick was a key team member, developing socio-economic assessment guidance for Strategic Optioning, through to Potential Route Corridor selection and identification of a preferred route alignment. Drawing on HM Treasury and other guidance, the approach is being applied consistently to all major network upgrades. PBA provides socioeconomic advice on a project basis to national Grid through its involvement in the Environmental Services Framework.

PREVIOUS EMPLOYERS

- Partner, Roger Tym & Partners, Glasgow 2006-2011 (Associate from 1999- 2006);
- Associate, Halcrow, Edinburgh 1997-1999;
- Senior Planner, Queensland Health, Brisbane, Australia, 1994-1996;
- Freelance planning consultant, Brisbane, Australia, 1994-1996
- Associate/Senior Consultant, Roger Tym & Partners 1988-1994.

ANDREW PEARSON
BA (Hons), MA, PhD, MCIfA, FSA
Senior Heritage Consultant

EXPERIENCE

Senior Archaeologist, AECOM, 2017 – Present

Company Director, Pearson Archaeology Ltd, 2004 – 2017

Project Officer, Glamorgan-Gwent Archaeological Trust, 2001 – 2004

Project Officer, Hertfordshire Archaeological Trust, 2000 - 2001

QUALIFICATIONS

PhD, Archaeology. Department of Archaeology and Postgraduate Research Institute for Sedimentology, University of Reading, 1996-1999

MA, Roman Archaeology. Department of Archaeology, University of Reading, 1994-1995

BA (Hons), History. University of Reading (Class: 1st), 1991 -1994

PROFESSIONAL MEMBERSHIPS

Member of the Chartered Institute for Archaeologists (MCIfA)

Fellow of the Society of Antiquaries of London (FSA)

AFFILIATIONS

Honorary Research Fellow, Brunel University

Andrew Pearson has over 18 years' experience within the heritage profession, working for both public and private sector clients in the UK and overseas. Based in Cardiff, he specialises in work within interdisciplinary teams for large-scale developments, including airports, roads, housing and energy schemes. He has worked on numerous Welsh energy projects, including wind, tidal, biofuel and pumped water storage. In South Wales these include wind farms at Maerdy, Ferndale, Gilfach Goch, Merthyr Common, Llanfynydd and Fochriw, biofuel plants at Newport Docks and Coed Bach (Kidwelly), and the Deltastream Trial (Ramsey Sound).

Andrew has worked on several DCO projects including the Glyn Rhonwy Pumped Storage scheme and, most recently, was lead heritage author for the Environmental Statement for A303 Amesbury to Berwick Down (Stonehenge). He has acted as an expert witness at Public Enquiry for the Luton-Dunstable Translink scheme, and has contributed to pre-hearing submissions for other projects, including Clocaenog Forest Wind Farm.

Andrew also has an extensive track record in academic research, publication and teaching. He is the author of six books and numerous peer-reviewed journal articles, and lectures widely in both university and public forums. Between 2008 and 2015 he was a research associate at Bristol University, and now holds honorary research associate status at Brunel University. He has held grants from British Academy, British Library, Leverhulme Trust, AHRC and the Overseas Territories Environment Programme.

Andrew is a Member of the Chartered Institute for Archaeologists and a Fellow of the Society of Antiquaries of London.

RELEVANT PROJECT EXPERIENCE

Abergelli Power Limited, 2017-18

Andrew was the lead author for the Historic Environment chapter of the environmental statement for a 299MW Open Gas Cycle Turbine power station, located north of Swansea, South Wales.

St Helena Air Access, 2006-2015

Andrew was the Scheme Archaeologist for the £285m airport development on the South Atlantic island of St Helena. His inputs comprised: initial assessments and environmental impact assessment; design and management of the mitigation programme; fieldwork director for the excavation of a 19th-century 'liberated African' graveyard – a unique site of the 'Middle Passage'; post-excavation analysis and site publication. The excavation involved the management of 15 staff plus local volunteers over a period of four months, while the post-excavation programme took a further three years.

Andrew was subsequently engaged by St Helena Government to advise on heritage matters relating to the continued construction work in the vicinity of the slave graveyard, and on options for the reburial of the human remains unearthed during the excavation.

Clocaenog Forest Wind Farm, Denbighshire

Andrew undertook the historic environment assessment that supported the National Infrastructure Planning application for this 32-turbine wind farm. He was author of the environmental statement chapter and public inquiry submissions for archaeology and heritage.

Hirfynydd Wind Farm, Glamorgan

Andrew undertook the historic environment assessment for this multi-turbine scheme, constructed in the Glamorgan uplands in an area of known Roman, medieval and Industrial-era activity.

Neslam Wind Farm, Lincolnshire

Andrew undertook the historic environment assessment for this project, which included the design and implementation of an archaeological field evaluation. He was also responsible for negotiations with English Heritage and for the preparation of evidence in advance of public inquiry.

Wind Energy: Scoping Studies

Andrew has undertaken numerous scoping exercises for wind energy proposals in England, Wales and Ireland. He also undertook strategic scoping studies in advance of tenders for Forestry Commission land in Wales within the TAN 8 Strategic Search Areas.

Deltastream Trial, Ramsey Sound (2009)

Andrew provided cultural heritage inputs for the planning application to install the Deltastream tidal energy device, including marine and terrestrial archaeological assessments.

Newport Docks Bioenergy Plant

Andrew undertook the historic environment assessment for this project, which was situated within Newport's historic dock area, and within land with high archaeological potential.

A55 Third Menai Crossing

Andrew contributed to the Stage 2 studies which investigated potential options for a third bridge across the Menai Straits between mainland Wales and Anglesey.

A483/A489 Newtown Bypass

Andrew undertook the historic environment assessment for this 6.5km road scheme, situated within an area of known archaeology, including a Roman road and prehistoric settlements. He was author of Stage 2 options appraisal and Stage 3 environmental statement chapter. He was responsible for the design and management of evaluation fieldwork, and was Scheme Archaeologist acting for the contractor during Key Stage 6.

A487 Caernarfon-Bontnewydd Bypass

Andrew undertook the historic environment assessment for this 10km road scheme, which lies within an area of known prehistoric, Roman and medieval archaeology. He was author of the Key Stage 2 options appraisal and Key Stage 3 environmental statement chapter, and was responsible for the design and management of the evaluation fieldwork.

A465 Heads of the Valley, Section 3, Brynmawr to Tredegar

Andrew undertook the historic environment assessment for this 6.8km road scheme, which passed through Merthyr Tydfil's historic iron-working resource zone. He was also Scheme Archaeologist acting for the contractor during Key Stage 6.

Upper Rhymney Valley Regeneration

Andrew was responsible for the cultural heritage element of this strategic transport study, which responded to the landslip potential in the area between the settlements of New Tredegar and Rhymney, South Wales. The project considered the possibility of retaining the existing road, together with assessment of multiple new-built or adapted road options, a combination of which would create an entirely new link.

A483/A470 Builth Wells Study

Andrew undertook the Key Stage 2 historic environment studies for this project. His inputs included WelTAG appraisals and DMRB assessments.

Port Talbot Distributor Road

Andrew was responsible for the initial assessments of this scheme, and for the Environmental Statement chapter for cultural heritage.

Church Village Bypass, Rhondda Cynon Taff

Andrew was responsible for the Stage 3 DMRB assessment and the cultural heritage chapter of the Environmental Statement.

St Mellons Link Road, Cardiff

Andrew undertook the Stage 2 and 3 DMRB assessments for this proposed bypass across the Gwent Levels Historic Landscape. His inputs included a desk-based study, field evaluation and ASIDOHL, leading to the production of the cultural heritage chapter of the Environmental Statement.

Pembroke Community Regeneration Study

Andrew undertook the Stage 2 DMRB assessment for a bypass and road improvement scheme in Pembroke's historic town centre and environs.

A303 Stonehenge: Amesbury to Berwick Down

Lead author for the Environmental Statement chapter for heritage, relating to the proposed tunnel and road improvements in the Stonehenge element of the Stonehenge and Avebury World Heritage Site.

M181 Terminal Junction

Andrew undertook a historic environment desk-based assessment for this scheme, which formed one element of the Lincolnshire Lakes mixed-use development, near Scunthorpe.

Appendix 4

Schedule of Corrections

Schedule of Corrections

Relevant Document	Document Text	Description of Error.	Location with Document	Correction of Text/ Response
ES [APP-042]	"3.11.20 The operation of the Project will not require a significant onsite workforce. Visits by service/maintenance vehicles etc. will occur on average every year."	Missing Number	Paragraph 3.11.20 of ES [APP-042]	*"3.11.20 The operation of the Project will not require a significant onsite workforce. Visits by service/maintenance vehicles etc. will occur* ***on average, once every six months.****"*
ES [APP-042]	"Comprehensive, residential led, mixed use development of up to 750644 homes" "Comprehensive, residential led, mixed use development of up to 675490 homes"	Projects 26 and 27 mistakenly refer to 750644 and 675490 homes.	Table 4-6 in ES [APP-042]	*"Comprehensive, residential led, mixed use development of up to* ***644*** *homes"* *"Comprehensive, residential led, mixed use development of up to* ***490*** *homes"*
ES [APP-042]	"This has been addressed in Section 0 and Section 6.7.15 to 6.7.27"	First item in Table mistakenly refers to Section 0.	Table 6-6 [APP-042]	*"This has been addressed in Section* ***6.3*** *and Section 6.7.15 to 6.7.27"*
ES [APP-042]	*"6.10 Cumulative and In-Combination Effects"*	Heading 6.10 is incorrectly titled "Cumulative and In -combination Effects"	Section 6.10 ES [APP-042]	*"6.10* ***Cumulative Effects****"*
ES [APP-042]	*"The construction assessment has been based on daytime magnitude of impacts as detailed in Table 7-8, as the proposed construction hours as detailed in Paragraph 3.11.19 fall within these hours."*	Incorrect cross reference to paragraph 3.11.19.	Paragraph 7.7.6 of the ES [APP-042]	*"The construction assessment has been based on daytime magnitude of impacts as detailed in Table 7-8, as the proposed construction hours as detailed in Paragraph* ***3.11.21*** *fall within these hours."*
NSER [APP-066]	*"1.1.15 The Project Site is approximately 30.66ha and is located near to the village of Felindre, Swansea (see Figure 1)."*	At paragraph 1.1.15 it incorrectly states the Project site is approximately 30.66Ha.	Paragraph 1.1.15 of the NSER [APP-066]	*"1.1.15 The Project Site is approximately* ***35.52 ha*** *and is located near to the village of Felindre, Swansea (see Figure 1)."*
NTS [APP-020]	*"The transport assessment has only assessed construction traffic as operational traffic is considered to be Negligible and is therefore scoped out of this assessment."*	The NTS states that operational traffic is scoped out. Table 4-2 of the ES [APP-042] does not scope it out. The Secretary of State in their Scoping Opinion [APP-035] did not explicitly scope out operational traffic.	Paragraph 4.8.5 of the NTS [APP-020]	*"The transport assessment has only assessed construction traffic as operational traffic is considered to be Negligible and has* ***therefore not been assessed further****"*
ES [APP-042]	N/A	Page numbering goes away after page 10-8 until 10-51.	Chapter 10, ES [APP-042]	Noted.

Appendix 5

Meeting Notes for APL CCS NRW Abergelli Power Station Workshop 6th February 2018

Meeting Notes

Meeting name	**Abergelli Power Station Workshop**	**Attendees**	***NRW:*** *Hannah Roberts (HR)* ***CCS:*** *Andrew Ferguson (AF), Danielle Fry (DF)* *Catherine Matthews (CM)* ***Abergelli Power Limited(APL):*** *Kirstin Gardner (KG)* ***AECOM:*** *Catherine Anderson (CA), Natalie Williams (NW), Ursula Jones (UJ), Ruth Mauritzen (RM)*
Meeting date	6th February 2018		
Time	13.00 – 16.30		
Location	Committee Room 5, Guild Hall, Swansea. SA1 4PE		

Item	Description
1.	**Landscape and Visual Assessment** RM: Explains that it would not be useful to have the additional viewpoint and ask CCS if they are happy with approach. CM: Confirms happy with the approach. RM: Query for NRW regarding the approach taken in the landscape assessment and the use of LANDMAP Aspect Areas. Please can NRW confirm that NRW s42 response will include comments on the approach taken to the use of LANDMAP Aspect Areas within the landscape assessment in the EIA. HR: Confirms it has been covered and satisfied with the approach. CM: Requests additional notes to be put onto the photomontages when the Project is not visible. **ACTION: AECOM to provide wirelines for photomontages in the ES.** **ACTION: AECOM to confirm site levels used for photomontages – existing/proposed** RM: Describes NRW viewpoint on the road overlooking AONB, and the issue with safety taking the photos. HR: Will feed that back to the team. **ACTION: RM to contact LVIA person to confirm.**
2.	**Ecology** *Survey methods and timings* DF: Confirms that there is a comprehensive survey list, and generally happy that everything is covered. HR: Questioned invertebrate survey, and why no NVC? UJ: No marsh frit is found onsite, and has survey information from previous consultants. DF: Element of the unknown, where is the access route is going? Is it being widened? CA: No, only removal of the two trees. Confirmed that the access route option will be determined post engineering and utilities investigation. KG: Still in consultation with NG about access requirements. DF: Take worst case scenario and as detail comes in it will improve. HR: Would be useful to have quantified habitat loss in a map. **ACTION: AECOM to provide map in ES to show habitat loss.** **ACTION: AECOM to update PEA for DCO submission to remove references to surveys still to be undertaken.** UJ: Notes that some surveys will continue past the DCO submission date. HR: Confirms that NRW is happy with this approach as long as the data is available prior to commencement of examination. **ACTION: UJ to provide updated table to CCS outlining surveys undertaken/surveys outstanding.** *Discussion on lighting and lighting plan.* KG: We will minimise lighting, and the majority of the site will be dark. DF: Suggest using cowls / hooded lighting. KG: Confirmed a plan will be submitted with the DCO. Confirmed access road will be unlit. More information will be presented in the ES including sensitive lighting. **ACTION: KG to provide example Outline Lighting Strategy**. *Discussion on mitigation:* CA: Requests for confirmation that reptile mitigation is OK within order limits. DF: More info is required, and suggested moving out to edge habitat?

Item	Description
	UJ: Unclear on landscaping/maintenance at the time of writing. Other options have been considered, although offsite is low on the list. DF: Suggests that there may be off-site land available. **ACTION: DF to confirm number/location of potential offsite mitigation sites.** HR, CA: Discussion on the teardrop land for reptile mitigation and that the area could potentially provide linkages for bat foraging routes. HR, AF: Amenable to the use of this land as replacement habitat and an enhancement opportunity. DF: Confirms that NRW are looking for greater amount of replacement mitigation habitat than amount of habitat lost. UJ: Confirms marsh grassland is low value (only designated due to 25% rush), and enhancement will be made.
3.	**Drainage** DF: States that the ES needs more link between ecology and drainage. HR: Needs detail on habitat re-routing for the ES, and to provide a proposed plan for drainage re-routing/ditches. CA: Water main is currently being investigated and we will know more details once this is complete. A Landscape and Ecology Master Plan will be prepared for final submission which includes drainage re-routing. KG: Confirmed with CCS and NRW that, in principle, both would be receptive to seeing draft Master Plan before DCO submission. AF: CCS standard requirement is for 30% climate change. 20% previously confirmed with CCS Flood Team based on 25 year lifespan of plant only – can 20% be further justified through expansion on plant 25 year lifespan? **ACTION: KG to provide comments on the 25 year lifespan.** DF: Asks if water can be retained in ditches. **ACTION: AECOM to check with engineers.**
4.	**HRA** HR: Asks for more information on number of site workers/septic tank info. KG: Confirmed design/scale of sceptic tank based on frequency/number of users of on-site facilities. CCS and NRW sought confirmation on why hydrology was scoped out of HRA. CA: Confirmed no discharge. CA: Requests NRW to provide comments as soon as possible.
5.	**Cumulative long list** AF: Confirms one scheme has got consent, and other small dwellings. AF: Suggests considering LPD dwellings, and use assumptions from other project. CA: Cut off period end of Feb for cumulative list.

Appendix 6

Wealden District Council v Secretary of State for Communities and Local government and others 2017 [EWHC] 351

Neutral Citation Number: [2017] EWHC 351 (Admin)

Case No: CO/3943/2016

IN THE HIGH COURT OF JUSTICE
QUEEN'S BENCH DIVISION
PLANNING COURT

Royal Courts of Justice
Strand, London, WC2A 2LL
20/03/2017

B e f o r e :

MR JUSTICE JAY

Between:

WEALDEN DISTRICT COUNCIL	**Claimant**
- and –	
(1) SECRETARY OF STATE FOR COMMUNITIES AND LOCAL GOVERNMENT **(2) LEWES DISTRICT COUNCIL** **(3) SOUTH DOWNS NATIONAL PARK AUTHORITY**	**Defendants**
- and –	
NATURAL ENGLAND	**Interested Party**

John Hobson QC and Scott Lyness (instructed by Trowers & Hamlins LLP) for the Claimant
Richard Moules (instructed by Government Legal Department) for the First Defendant
James Findlay QC and Clare Parry (instructed by Sharpe Pritchard LLP) for the Second and Third Defendants

Hearing date: 8th February 2017

See Order at bottom of judgment.

MR JUSTICE JAY:

Introduction

1. This is a challenge by way of application for statutory review brought under section 113 of the Planning and Compulsory Purchase Act 2004 ("the 2004 Act") to quash part of the Lewes District Local Plan Part 1, known as the Joint Core Strategy 2010-2030 ("JCS").

2. The JCS was jointly prepared by Lewes District Council ("LDC") and South Downs National Park Authority ("SDNPA") under Part 2 of the 2004 Act. LDC is the local planning authority for the district of Lewes, save for that part – I am told 56% - which falls within the South Downs National Park (in respect of which SDNPA is, and has been since 1st April 2011, the local planning authority). The JSC forms part of the statutory development plan for the district of Lewes, including the extent of the South Downs National Park which falls within it.

3. The Secretary of State for Communities and Local Government ("SSCLG") is involved in these proceedings as First Defendant because one of his inspectors examined the emerging JCS and gave his report to WDC and SDNPA on 22nd March 2016. Following his recommendation that the emerging JCS was sound, the JCS was adopted by LDC on 11th May 2016 and by SDNPA on 23rd June 2016.

4. The geographical and environmental focus of this application is Ashdown Forest Special Area of Conservation ("the SAC") which was designated as such in 2005 pursuant to Council Directive 92/43/EEC of 21st May 1992 on the Conservation of Natural Habitats and Wild Fauna and Flora ("the Habitats Directive"). The designation was given for a number of reasons, including the SAC's extensive areas of lowland heath, which is vulnerable to nitrogen dioxide pollution from motor vehicles. The SAC covers 2,729 hectares and lies wholly within the area of the Claimant, Wealden District Council ("WDC"). This is the local planning authority for Wealden District, save for that part of it (to the south) which falls within the South Downs National Park. Relevantly for present purposes, it should be noted that two major roads pass through or close to the SAC: the A22 runs more or less from north to south, and travels across the western side of the SAC; the A26, more to the east, runs alongside the south-eastern boundary of the SAC. It should also be noted that the north-eastern boundary of LDC is approximately 5-6 kms from the nearest point on the south-eastern boundary of the SAC. These geographical features are apparent on the colour plan which was helpfully provided to me in advance of the hearing.

5. The Interested Party, Natural England, has submitted a witness statement but has not otherwise pursued an active role in these proceedings. It provided expert advice to LDC and SDNPA during the preparation of the JCS relating in part to the issue of the potential effects of planned development on the SAC. The advice given was that the planned development would not likely have a significant impact on the SAC in consequence of increased traffic flows.

6. The principal point raised by this application, in the terms in which it was formulated by Mr John Hobson QC for WDC, is whether LDC and SDNPA acted unlawfully in concluding, on advice, that the JCS would not likely have a significant effect on the

SAC *in combination with* the Wealden Core Strategy ("WCS"). I have emphasised the adjectival phrase "in combination with" because it lies at the heart of this application. WDC does not suggest that deleterious environmental effects are likely to have a significant effect on the SAC were they to be considered in isolation. WDC's point is that they must properly be considered in tandem with the WCS, which is another (and earlier) Joint Core Strategy prepared with SDNPA and adopted in late 2012 and early 2013. The essential contention made is that if relevant data and findings are properly amalgamated, as they should be, the effects of increased traffic flows near the SAC would not have been ignored at the first screening or scoping stage of the process.

7. The subsidiary point advanced by WDC is that SSCLG's inspector failed to have regard to its representations that were relevant to the examination of the JCS, in particular the potential effect of planned development on the SAC.

8. Before these matters can be appropriately examined, I must set out the essential factual background to this application (drawing heavily from the pleadings, the agreed chronology and the skeleton arguments) and then address the statutory and regulatory framework.

Essential Factual Background

9. In 2010 LDC issued a series of topic papers to guide development of the JCS, and later in that year produced a draft screening report of the emerging JCS for the purpose of the Habitats Directive.

10. Natural England gave advice on the draft screening report as follows:

> *"During the meeting with NE, it was explained that it was important to assess the impact of the Core Strategy on traffic flows on routes (including routes both within and outside the District) that lie within 200m of a protected site. NE explained that if the Core Strategy resulted in any of the following consequences on such routes then its affect [sic] on the protected sites would not be of significance:*
>
> - *If the expected increase in traffic ("AADT flows") is less than 1,000 cars per day or 200 HGVs per day.*
> - *If there is less than a 1% increase in traffic generated compared to that predicted at the end of the period that the Core Strategy plans for.*
> - *..."*

11. LDC's screening opinion concluded that it could not screen out the impacts on the SAC because, amongst other reasons, at this time LDC did not have a traffic model which would allow it to conclude whether the traffic generated by the proposed development would be significant enough to impact on the integrity of Ashdown Forest.

12. On 16th September 2010 WDC met with representatives of Natural England to discuss the issue of nitrogen deposition in relation to the SAC. Natural England advised that, having regard to guidance in what is now Highways England's Design Manual for Roads and Bridges ("DMRB"), if estimated AADT flows arising from the WCS

would be increased by 1,000 cars or more on any road in or adjacent to Ashdown Forest, that would trigger the need for an appropriate assessment under the Habitats Directive and domestic regulations.

13. In February 2011 WDC issued a report (by itself, and the relevant highways authority) which assessed the impact of the increase in traffic resulting from what was proposed in the WCS on the SAC. The WCS is not part of this application for statutory review, but it seems clear that WDC adopted the DMRB methodology and Natural England's advice. It assessed how roads within 200m of the SAC would be affected by development anticipated by the proposed WCS including committed developments. Additional AADT flows were all below the 1,000 car threshold such that a detailed assessment was not required, albeit in the case of a section of the A26 within 200m of the SAC, there was a figure of 950 cars. This is the A26 Duddleswell Road to Crowborough link which passes along the south-eastern boundary of the SAC.

14. In August 2011 WDC published its final submission WCS and associated Habitats Regulations Assessment ("HRA"). The HRA identified the A26 as the "main road corridor of interest", and stated that towards the centre of the SAC [I interpolate, more than 200m away from the A26] the nitrogen deposition load "is significantly exceeded beyond the ability of habitats to withstand deleterious effects". However, purportedly applying DMRB guidance:

> *"... maximum increases in traffic would arise on the A26 connecting Uckfield and Crowborough ... with an increase of 950 vehicles per day ... [below] the traffic criterion under the DMRB guidance ... the impact of the [WCS] is therefore considered neutral and no further assessment is required.*
>
> *...*
>
> *Since the [WCS] has been found to be neutral in relation to air quality on roads local to European sites, as defined by the DMRB guidance, there can be no residual impact. Further consideration of in combination effects is not required."*

15. Meanwhile, in September 2011 an emerging JCS was published jointly by LDC and SDNPA and consulted on between then and November. At that time LDC was proposing to provide 4,150 additional homes in the plan period. It should be noted that the vast majority of these were to be focussed in the urban areas of LDC (lying to the centre and south) rather than in the north-east (i.e. the area closest to the SAC). The village of Newick, which lies on the A272 at the north-eastern section of LDC, was being proposed to accommodate 120-174 dwellings. It should be observed at this stage that any increase in traffic flows on the A26 would not just result from development in Newick.

16. Between 17th January and 2nd February 2012 examination hearings took place into the WCS. At these hearings WDC stated that it was unable to model what was coming out of other Core Strategies or similar local plans as other authorities were not at the level of detail or stage as WDC's.

17. On 30th May 2012 a meeting took place between LDC and Natural England. It was confirmed that the levels of traffic generated by the JCS were not significant. On 6th June LDC emailed WDC to similar effect.

18. On 30th October 2012 the examining Inspector reported on the WCS and found that it was sound. The Inspector accepted that the DMRB methodology was correct as regards "a scoping assessment of air quality", and then at paragraph 28 said:

> *"Based on the DMRB results, one section of the A26 would have an additional AADT of 950, indicating very little headroom for development beyond that proposed without further assessment to determine whether there would be a likely significant effect on the Ashdown Forest SAC. This work has not been done. However, the best available evidence on the existing nitrogen deposition load towards the centre of the SAC is that it significantly exceeds the ability of habitats to withstand deleterious effects. Deposition is likely to be more severe close to road corridors. Furthermore, I am mindful that the traffic modelling does not take account of possible traffic impacts of growth in neighbouring authorities. Although heathland management may have some part to play in mitigating the effects of nitrogen deposition, in the context of these other factors there is sufficient evidence at this point on a precautionary basis to restrict further development in north Wealden beyond that in the [WCS] ..."*

19. The examining Inspector proposed a modification to the WCS requiring WDC to undertake further investigation, in collaboration with other affected authorities, of the impacts of nitrogen deposition on the SAC. His reference to "very little headroom" can only be sensibly interpreted as the difference between 950 and 1,000 AADT.

20. In February 2013 WDC and SDNPA issued a WCS adoption statement which was challenged in proceedings in this jurisdiction. In February 2014 Sales J (as he then was) dismissed the challenge. Issues arise as to Sales J's analysis and approach, which I will need to address later on[1].

21. Meanwhile, in January 2013 LDC and SDNPA produced a "JCS – Proposed Submission Document" which proposed provision of 4,500 net additional dwellings in the plan period, with 100 of these at Newick. Accompanying this document was an HRA which referred in terms to advice received from Natural England and thanked WDC for its assistance.

22. The HRA noted the governing legal principles as follows:

> *"2.7 Other plans and strategies that could have an impact on protected sites "in combination" with the plan under production, also have to be taken into account during the screening stage ...*
>
> *2.8 Importantly, the HRA process is underpinned by the precautionary principle, especially in the assessment of potential impacts and their resolution. Therefore, if it is not possible to rule out a risk of harm, based on the evidence available, to a protected site, it is assumed a risk may exist. As a result, it would mean that such a site could not be "screened out" at the initial stage of the HRA process.*

...

4.2 As the statutory nature conservation body for England, officers from [LDC] initially met with National England to discuss possible effects of the Core Strategy on the protected sites. We used the meeting to examine whether we were able to screen any of the protected sites out of the further stages of the AA [appropriate assessment] procedure.

4.3 During the meeting with NE, it was explained that it was important to assess the impact of the Core Strategy on traffic flows on routes (including routes that lie both within and outside of the District) that lie within 200m of a protected site. NE explained that if the Core Strategy resulted in any of the following consequences on such routes then its affect [sic] on the protected sites would not be of significance:

** If the expected increase in traffic is less than 1,000 cars per day ..."*

** If there is less than a 1% increase in traffic generated compared to that predicted ...*

...

5.15 Stage 1 (Screening) of the HRA process concluded that due to additional transport movements caused by additional development the [JCS] proposes, it could not be ruled out that nitrogen deposition caused by additional transport movements would not have a negative effect on the Ashdown Forest SAC.

...

5.18 ... additional transport movements caused by the Core Strategy on the roads within 200m of the Ashdown Forest SAC would be:

- 94 AADT on A22
- 158 AADT on A26
- 71 AADT on A275
- 19 AADT on B2026

5.19 As the above results show, the [JCS] would not generate 1,000 AADT on the roads near to the Ashdown Forest SAC. Based on advice given by Natural England at the Screening Stage, we can "screen out" the Ashdown Forest SAC from the rest of the HRA process, in terms of potential air quality impacts.

5.20 As such, it has been determined, in consultation with Natural England, that the [JCS] would not have a significant negative effect on the Ashdown Forest SAC in terms of nitrogen deposition either alone or in combination with other plans. Therefore mitigation and avoidance measures are not required."

Further, at paragraphs 5.22 to 5.27 the HRA specifically addressed the effect of the JCS looked at in combination with the WCS in the context of Spatial Policy 2, and concluded that mitigation measures were required.

23. In March 2014 an Addendum to the HRA was promulgated. This reflected "Focussed Amendments" to the JCS Proposed Submission Document, proposing (so far as is material) a total of 5,600 houses in the plan period. Consequently, the AADTs set out in the HRA were revised as follows:

"119 AADT on A22

190 AADT on A26

92 AADT on A275

22 AADT on B2026"

24. It may be deduced that a 24% increase in the housing provision does not yield matching increases in the projected AADTs. For example, the increase in relation to the A22 is 26% whereas the increase in relation to the A26 is 20% (or thereabouts). I infer that the relationship between housing and AADT is not linear. Whilst I am addressing the basic arithmetic, it may even more obviously be seen that adding 950 and 190 (in relation to the A26) takes one above the 1,000 AADT threshold.

25. At this stage WDC raised no objections to the HRA. The first intimation of concern was expressed by WDC's Planning Policy Manager who wrote to comment on the Newick Parish Council Proposed NDP on 13th October 2014. She said as follows:

> *"... I wish to draw your attention to the need to assess the in combination effects of development contained with the NDP, along with other plans and projects, in relation to nitrogen deposition on the Ashdown Forest SAC ...*
>
> *This is an issue which was addressed in the Wealdon District Core Strategy examination, and subsequently raised at the [judicial review]. To clarify the position, the Wealden District Core Strategy did not consider the in combination effects of other relevant plans with regards to nitrogen deposition, as other relevant plans had not been sufficiently progressed to allow in combination assessment. It is considered, based on our understanding of Article 6(3) of the Habitats Directive, that any plan must be considered in combination. As a result, Wealden District will be taking into account any Local Plan with proposals which may affect the Ashdown Forest in combination with Wealden District proposals in the Core Strategy Review."*

26. On 20th January 2015 hearings commenced into the JCS. On 10th February the examining Inspector produced an initial findings letter in which he stated that in his opinion LDC and SDNPA had met all the statutory requirements. However, he also considered that the fully objectively assessed housing need ("OAN") could not be met by the proposal. Accordingly, in this regard the proposal could not be described as "sound". The inspector asked LDC and SDNPA to attempt to get closer to OAN by making further strategic allocations.

27. Accordingly, in June 2015 LDC and SDNPA proposed by way of Main Modifications additional strategic allocations in Peacehaven and Lewes (but not elsewhere), thereby increasing the number of houses in the JSC to 6,900. For whatever reason, the addendum HRA assessment which ensued did not address the Ashdown Forest SAC (nothing on my understanding turns on this).

28. On 10th June 2015 an officer of WDC wrote to LDC setting out concerns regarding the in-combination impacts of local plans pursuant to the Habitats Regulations.

29. There then followed a period of consultation on the Main Modifications. On 2nd October 2015, which was the last day of the consultation period, WDC made a

representation to the examining Inspector arguing that the methodology used by LDC and SDNPA in their HRA was flawed. The representation was duly summarised in the consultation statement and provided to the inspector, under the rubric "other comments" (strictly speaking, it did not relate to the Main Modifications). The summary (in my view, an accurate one) reads as follows:

> *"There is no in-combination assessment of the Local Plan with the adopted Wealden District Core Strategy in relation to nitrogen deposition and the [SAC]. The HRA of the proposed modifications does not assess the impact of the plan on the A26 adjacent to the Ashdown Forest. The March 2014 HRA showed the JCS to have 190 AADT. In combination with the WDCS this would exceed the DMRB screening criteria. It is not clear if the additional development will exacerbate this position."*

The summary, together with WDC's letter of representations, was made available to the examining Inspector.

30. In December 2015 resumed hearings into the JCS took place. WDC did not seek to become involved in that process.

31. On 22nd March 2016 the examining Inspector reported on the JCS and concluded that it was sound. He did not specifically comment on the conclusions of the HRA (as amended) and any environmental impact (or lack of it) on the SAC. However, speaking more generally, he expressed his overall conclusion as follows:

> *"The Habitats Regulations Assessment Report (September 2014) shows that there will be no significant adverse effect on any protected sites arising from the implementation of the plan and sets out why Appropriate Assessment is not therefore necessary, as agreed by Natural England."*

32. On 11th May 2016 LDC adopted the JCS. On 21st June 2016 WDC sent a pre-action warning letter. On 23rd June 2016 SDNPA adopted the JCS. Following further correspondence, the claim form was issued on 4th August 2016. WDC seeks a quashing order confined to two specific spatial policies in the JCS: namely, SP1 and SP2.

The Legal Framework

33. Article 6(3) of the Habitats Directive provides:

> *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other projects, shall be subject to appropriate assessment ..."*

34. Regulation 102 of the Conservation of Habitats and Species Regulations 2010 [SI 2010 No 490] ("the Habitats Regulations") applies the requirements of Article 6(3) to domestic law:

> ***"102. Assessment of implications for European sites …***

(1) *Where a land use plan –*

(a) is likely to have a significant effect on a European site [including the SAC] … (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of the site,

the plan-making authority for that plan must, before the plan is given effect, make an appropriate assessment of the implications for the site in view of that site's conservation objectives."

35. The statutory framework for preparing and examining development plan documents was summarised by Patterson J in JJ Gallagher Ltd v Cherwell DC [2016] EWHC 290 (Admin), as follows:

> *"28. The statutory framework for local plans is found in Part 2 of the Planning and Compulsory Purchase Act 2004 (PCPA). In particular:*
>
> *i) A local planning authority is to prepare a scheme of development plan documents: section 15(1).*
>
> *ii) The development plan documents must set out the authority's policies relating to the development and use of land in their area: section 17(3).*
>
> *iii) In preparing a local development plan document the local planning authority must have regard to the matters set out in section 19 such as national policy: section 19(2)(a).*
>
> *iv) Each local development plan document must be sent to the Secretary of State for independent examination: section 20(1).*
>
> *v) The local development plan document must only be sent for examination if the relevant requirements have been complied with and the plan is thought to be ready: section 20(2).*
>
> *vi) Section 20(5) provides that the purpose of an independent examination is to determine whether the development plan documents satisfy the requirements of section 19 and section 24(1) (regulations under section 17(7) and any regulations under section 36 relating to the preparation of development plan documents), whether the plan is sound and whether the local planning authority has complied with its duty to cooperate.*
>
> *vii) The purpose of an independent examination is to determine in respect of the development plan document whether it is sound: section 20(5)(b).*
>
> *viii) If the inspector finds that the plan is sound he must recommend adoption of the plan and give reasons for his recommendation."*

36. Section 17(8)(a) provides that a document is a local development document only in so far as it is adopted by resolution of a local planning authority. By section 37(3), a development plan document "is a local development document which is specified as a development plan document in the local development scheme".

37. Section 23 of the 2004 Act provides:

"Adoption of local development documents

(1) *... [I was referred to this sub-section by Mr James Findlay QC for LDC and SDNPA. In fact, it is not the relevant provision, applying only to local development documents which are not development plan documents]*

(2) *If the person appointed to carry out the independent examination of a development plan document recommends that it is adopted, the authority may adopt the document –*

(a) as it is; or

(b) with modifications that (taken together) do not materially affect the policies set out in it.

…

(5) A document is adopted for the purposes of this section if it is adopted by resolution of the authority."

38. Section 28 of the 2004 Act provides in material part:

"Joint local development documents

(1) Two or more local planning authorities may agree to prepare one or more joint local development documents.

(2) This Part applies for the purposes of any step which may be or is required to be taken in relation to a joint local development document as it applies for the purposes of any step which may be or is required to be taken in relation to a local development document.

(3) For the purposes of subsection (2) anything which must be done by or in relation to a local planning authority in connection with a local development document must be done by or in relation to each of the authorities mentioned in subsection (1) in connection with a joint local development."

39. By section 38(3)(b) of the 2004 Act (which is in Part 3), "the development plan is the documents (taken as a whole) which have been adopted or approved in relation to that area". So, the effect of this subsection is that, following adoption, that document (or these documents) become(s) part of the statutory development plan for the adopting local planning authority's area.

40. Section 113 of the 2004 provides in material part:

"Validity of strategies, plans and documents

(1) This section applies to—

...

(c) a development plan document;

...

and anything falling within paragraphs (a) to (g) is referred to in this section as a relevant document.

(2) A relevant document must not be questioned in any legal proceedings except in so far as is provided by the following provisions of this section.

(3) A person aggrieved by a relevant document may make an application to the High Court on the ground that—

(a) the document is not within the appropriate power;

(b) a procedural requirement has not been complied with.

(3A) An application must not be made under sub-section (3) without the leave of the High Court.

(3B) An application for leave … must be made before the end of the period of six weeks beginning with the day after the relevant date [viz. the date of adoption of the development plan].

…

(6) Subsection (7) applies if the High Court is satisfied—

(a) that a relevant document is to any extent outside the appropriate power;

(b) that the interests of the applicant have been substantially prejudiced by a failure to comply with a procedural requirement.

(7) The High Court may —

(a) quash the relevant document;

(b) remit the relevant document to a person or body with a function relating to its preparation, publication, adoption or approval.

(7A) If the High Court remits the relevant document under subsection (7)(b) it may give directions as to the action to be taken in relation to the document.

(7B) Directions under subsection (7A) may in particular-

(a) require the relevant document to be treated (generally or for specified purposes) as not having been approved or adopted;

…

(7C) The High Court's powers under subsections (7) and (7A) are exercisable in relation to the relevant document -

(a) wholly or in part;

(b) generally or as it affects the property of the applicant.

…

(9) The appropriate power is —

…

(c) Part 2 of this Act in the case of a development plan document or any revision of it;

…

(10) A procedural requirement is a requirement under the appropriate power or contained in regulations or an order made under that power which relates to the adoption, publication or approval of a relevant document.

(11) References to the relevant date must be construed as follows—

…

(c) for the purposes of a development plan document (or a revision of it), the date when it is adopted by the local planning authority or approved by the Secretary of State (as the case may be);

..."

41. Certain provisions of the 2004 Act and the Town and Country Planning (Local Planning) (England) Regulations 2012 [SI 2012 No 767] have been drawn to my attention, and the following are of some relevance. By regulation 17, "adoption statement" means a statement specifying the date on which a local plan was adopted. Regulation 18 obliges a plan-making authority to take account of representations about the content of a local plan made by "specific consultation bodies", here the WDC. Further, by regulation 23 an examining Inspector must take into account representations made by any person on the submission version of the plan.

42. Commendably, the parties have been able to agree a series of legal propositions relevant to this application. I am able to borrow their combined efforts, with few minor amendments.

43. A contention that a development plan document is not within the appropriate power under section 113 of the Planning and Compulsory Purchase Act 2004 brings into play conventional principles of administrative law: Blyth Valley BC v Persimmon Homes (North East) Ltd [2008] EWCA Civ 861 at paragraph 8.

44. The following legal principles apply to the application of Article 6(3) of the Habitats Directive and regulation 102 of the Habitats Regulations:

    i) the consideration of whether there are likely significant effects is a "trigger" for an appropriate assessment: R. (Champion) v North Norfolk DC [2015] 1 WLR 3710 at paragraph 41; Ashdown Forest Economic Development LLP v Wealden District Council & Anor [2015] EWCA Civ 681 at paragraph 12; R (Mynydd y Gwynt) v. Secretary of State for Business Energy and Industrial Strategy [2016] EWHC 2581 at paragraph 20;

    ii) where there is a risk of significant adverse effects to a protected site, there should be an appropriate assessment; and such a risk exists "if it cannot be excluded on the basis of objective information that the plan or project will have significant effects on the site concerned"; and "in case of doubt as to the absence of significant effects such an assessment must be carried out": the Waddenzee case (Case C-127/02) [2004] ECR-1 7405 at paragraph 44; R (Hart District Council) v. SSCLG [2008] 2 P&CR 16 at paragraph 78; Mynydd y Gwynt at paragraph 20;

    iii) "appropriate" is not a technical term but means that the assessment should be appropriate to satisfy the responsible authority that the project will not adversely affect the integrity of the site concerned, to a "high standard of investigation"; and this issue is a matter of judgment for the authority: Champion, at paragraph 41; Mynydd y Gwynt, at paragraph 20;

    iv) in respect of the second stage the competent authority must be certain that the plan or project in question will not adversely affect the integrity of their site concerned: Waddenzee at paragraphs 56-57. There should be "no reasonable scientific doubt"

remaining as to the absence of such effects (paragraph 59); Sweetman and others v An Bord Pleanála (Case C-258/11) [2014] PTSR 1092 at paragraphs 45-49;

v) this involves a "strict" precautionary approach: Smyth v. Secretary of State for Communities and Local Government [2015] EWCA Civ 174 at paragraph 61;

vi) the appropriate assessment "cannot have lacunae and must contain complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned": Sweetman at paragraph 44;

vii) a third party alleging that there was a risk that cannot be excluded on the basis of objective information must produce credible evidence that there was a real as opposed to hypothetical risk that must have been considered: Boggis v. Natural England [2009] EWCA Civ 1061 at paragraph 37;

viii) a decision-maker discharging its duties under the Habitats Directive and the Habitats Regulations should give the views of a statutory consultee considerable weight (Ashdown Forest Economic Development LLP v SSCLG, Wealden District Council [2014] EWHC 406 (Admin) at paragraph 110). However, that advice is not binding and it does not have to be given such weight if cogent reasons can be given for departing from it: see R (Akester) v. DEFRA [2010] EWHC 232 (Admin) at paragraph 112; Wealden DC v. SSCLG [2016] EWHC 247 (Admin) at paragraphs 91 and 95; DLA Delivery v. Lewes District Council [2015] EWHC 2311 at paragraph 32; Mynydd y Gwynt at paragraph 20.

45. Policy statements must be interpreted objectively in accordance with the language used, read in its proper context: Tesco Stores Ltd v Dundee City Council [2012] UKSC 13 at paragraphs 17, 18 and 21.

46. The interpretation of policy is a matter for the courts: R (on the application of the Manchester Ship Canal Company Ltd) v. Environment Agency [2013] EWCA Civ 542 at paragraph 23.

47. A planning authority is under a duty to take all reasonable steps to acquaint itself with the information relevant to the decision in order to be able to arrive at the correct decision, albeit that the content of the duty will vary according to the context: R (Hayes) v. Wychavon District Council [2014] EWHC 1987 (Admin) at paragraph 29. Where it is alleged that the planning authority failed in its duty to make sufficient inquiry, the question to be asked is whether the inquiry made by the planning authority was so inadequate that no reasonable planning authority could suppose that it had sufficient material available upon which to make its decision to grant planning permission and impose conditions.

48. These agreed legal propositions may be supplemented to the following extent.

49. First, Mr Hobson was keen to emphasise, and I agree, that the decision of Hickinbottom J in Mynydd y Gwynt was not directed to the issue of in-combination assessments. That issue did not arise.

50. Secondly, in Sweetman Advocate-General Sharpston (at paragraph 48) stated:

> *"The requirement that the effect in question be "significant" lays down a de minimis threshold. Plans or projects that have no appreciable effect on the site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by article 6(1), activities on or near the site would risk being impossible by reason of legislative overkill."*

51. Thirdly, at paragraph 78 of his judgment in Smyth v SSCLG [2015] EWCA Civ 174, Sales LJ drew a distinction between the bare legal requirements of Article 6(3) and the evaluative processes which must be undertaken to ensure their fulfilment (the court itself undertakes an evaluative process under section 113 which I will need to address). Specifically:

> *"Although the legal test is a demanding one, requiring a strict precautionary approach to be followed, it also clearly requires evaluative judgments to be made, having regard to many varied factors and considerations. As AG Kokott explained in paragraph 107 of her Opinion in Waddenzee, the conclusion to be reached under an appropriate assessment under the second limb of Article 6(3) cannot realistically require the attainment of absolute certainty that there will be no adverse effects; the assessment "is, of necessity, subjective in nature" ..."*

I will be returning to this theme in the analytical section of this judgment.

52. Fourthly, at paragraphs 73-77 of his judgment in R (oao Mott) v Environment Agency [2016] 1 WLR 4388, Beatson LJ warned against the dangers of this court substituting its own factual and evaluative assessments for those of an expert decision-maker. If "tenable expert opinion" exists, a reviewing court should be very slow to hold that the expert decision-maker, or I would add the non-expert decision-maker relying on that expert opinion, has erred in the Wednesbury sense. Here I am paraphrasing the effect of these paragraphs in Beatson LJ's judgment.

53. There was some debate at the Bar as to whether Hickinbottam J's two-stage approach is consistent with the judgment of Lord Carnwath JSC in Champion. In my judgment, there is no inconsistency between them, although one continues to need to be careful with the use of terms such as "scoping", "screening" and "trigger". "Scoping" is not a term of art; "trigger" is a metaphor. "Screening" can be a term of art, but it also can be deployed more informally. Competent authorities are quite entitled to use threshold levels and values in order to eliminate from further consideration *de minimis* environmental impacts which, on scientific evidence, fall short of engendering any relevant risk. However, and this is another point which will require development, *de minimis* is not a synonym for nugatory.

54. Since the hearing, the Court of Appeal handed down its judgment in R (oao DLA Delivery Ltd) v Lewes DC and Newick Parish Council [2017] EWCA Civ 58. At this stage I note that paragraphs 29-31 of the judgment of Lindblom LJ, containing a survey of the applicable legal principles, are wholly consistent with the parties' common ground in the case before me, as well as my reference to the application of the Wednesbury test (as per paragraph 51 above). I will be returning to this authority

below. My wider researches have also taken me to the decision of the Supreme Court in R (oao Morge) v Hampshire CC [2011] 1 WLR 268 and of Lindblom J (as he then was) in R (oao Prideaux) v Buckingham CC [2013] EWHC 1054 (Admin). Upon examination, however, I do not consider that these two cases advance any party's argument.

55. I was also referred to two other authorities which I would prefer to address later.

DMRB Guidance and the Evidence of Natural England

56. The relevant part of the DMRB is Volume 11 (Environmental Assessment), Section 3 (Environmental Assessment Techniques), May 2007 edition. This Advice Note is in the nature of governmental advice across the UK (the then Highways Agency, now Highways England, taking the lead for England) and "gives guidance on the assessment of the impacts that road projects may have on the air environment". Paragraphs 3.10 and 3.14 make clear that there is an initial or "scoping" stage, based on a preliminary assessment of whether there are likely to be significant impacts resulting from a specific plan or project. In this regard, paragraph 3.12 is crucial:

> *"Obtain traffic data for the Do-Minimum and Do-Something scenarios for the years to be assessed. Identify which roads are likely to be affected by the proposals. Affected roads are those that meet any of the following criteria:*
>
> - *...; or*
> - *daily traffic flows will change by 1,000 AADT or more ..."*

57. The DMRB is not wholly clear as to the extent to which cumulative impacts need to be considered, and at which stage. On my understanding of his submission, Mr Findlay's contention was that paragraph 3.12 does not require any evaluation of possible cumulative impacts at the scoping stage. This is because the DRMB does not say in terms that the identification of any affected roads should be in combination with any other proposals. Strictly speaking, that is correct. The submission of Mr Richard Moules for SSCLG was that cumulative effects should be considered, but not at the scoping stage, and only – if that point is reached – during the course of an appropriate assessment. However, in my view paragraph 3.6, upon which he relied, is neutral. This refers to DMRB 11.2.5 which I take to be Volume 11, Section 2, Part 5, paragraphs 1.53 – 1.60 in particular. These paragraphs do refer to the assessment of cumulative impacts in what I take to be the context of the second stage (viz. appropriate assessment) rather than the first stage (viz. scoping). Volume 11, Section 2, Part 4 deals with "Scoping of Environmental Impact Assessments" and states that consideration may have to be given to the possibility of cumulative effects "beyond the project boundary" (see paragraph 1.7(v)).

58. I will be reverting to the DMRB below.

59. Natural England is an Interested Party to this claim, and has submitted a witness statement from Ms Marian Ashdown, an expert in environmental science. Natural England is a non-departmental governmental body "providing its advice on the best scientific evidence available". I bear in mind that Ms Ashdown's evidence, at least in

its current form, was not available to any of the decision-makers; it serves to explain (at least for my benefit if not theirs) the basis for the 1,000 AADT threshold.

60. Ms Ashdown's explanation is that the AADT limit of 1,000 is another way of expressing a screening threshold of 1%, representing a "reasonable guideline threshold for determining likely significant effects on an [SAC]". Further, it has been used for "almost 10 years as an air quality assessment tool, having been first developed in 2004". Ms Ashdown explains that the 1% threshold has been agreed by another expert body, the Air Quality Technical Advisory Group ("AQTAG"). The bundle includes AQTAG's "Interim Advice", dated October 2013, which – although not available to any decision-maker – requires some examination. The following points arise.

61. Slightly confusingly, AQTAG's methodology has three stages, not two. In fact, stages 1 and 2 match DMRB's scoping stage, with stage 1 reflecting the distance between the road and the SAC (200m) and stage 2 reflecting the preliminary assessment of likely significant effects, i.e. what is described as "significance screening". The overall thrust of AQTAG's interim advice is that DMRB's 1,000 AADT threshold broadly equates to the 1% change in critical loads/levels, being the preferred benchmark. Mr Hobson submitted that I should be focussing on the 1,000 AADT threshold and not the 1%. In my view, these are simply different ways of measuring the same outcome, and it does not matter which yardstick is considered.

62. Mr Moules drew my attention to another AQTAG's document, "AQTAG21, 'Likely Significant Effect – use of 1% … Threshold'". The following points arise. First, if the 1% long-term benchmark is not exceeded, the decision-maker may conclude that there is "no likely significant effect". This means that the plan or project requires no detailed/appropriate assessment at AQTAG's stage 3 or DMRB's stage 2. Secondly, exactly the same consequence flows, by parity of reasoning, if the 1,000 AADT threshold is not exceeded. Thirdly:

> *"The choice of the 1% assessment level as a standard approach is a matter of professional judgment. This professional judgment takes account of:*
>
> - *The absolute contribution of a pollutant to an ecosystem which receives an impact at this level. For example, a contribution of 1% of the critical load for nitrogen of 10kg/ha/yr is equivalent to 0.01g of nitrogen per square metre per year …*
> - *The low level of likelihood of in-combination effects meaning that a conclusion of 'no adverse effect' cannot be reached at a particular location during the appropriate assessment (Stage 3) when the process contribution is less than 1%. Experience of permitting allows us to be confident that it is unlikely that a substantial number of plans or projects will occur in the same area at the same time, such that their in-combination impact would give rise to concern at the appropriate assessment stage. If such a situation was [sic] to arise then the assessment could be determined on a case-specific basis.*
> - *The 1% screening threshold is intended to cover a wide range of situations … The threshold therefore needs to be sufficiently*

precautionary to minimise the risk of screening out a situation when in fact it merits further consideration ..."

63. At this stage I observe that all three bullet points need to be considered together, and not in isolation from one another. Further, although the second bullet refers only to "appropriate assessment" and stage 3, there is no reason why the same methodology should not apply to the scoping stage.

64. Mr Findlay drew my attention to a Memo from AECOM dated 21st October 2016 which provided a further gloss on the AQTAG analysis:

> *"AQTAG has drawn a clear distinction between 'plans and projects considered to be inconsequential and never likely to have an in-combination effect (and so not included in any assessment of likely significant effect in combination with a new plan or project) and those concluded to have 'no likely significant effect' (insignificant alone but which may need to be considered in the assessment of any other new plans or projects) [March 2015 correspondence]. To fail to draw such a distinction would be to make the [Habitats Regulations] unimplementable [sic] since all plans, projects and schemes across a region (or greater area) that could contribute to any increase in pollution, even to the smallest extent (e.g. one car journey), could not otherwise legally be consented until they had all been considered in combination with one another."*

65. I will be reverting to Natural England's evidence, and to the AQTAG materials, below.

The Rival Contentions

66. Mr Hobson's first ground is that both the Habitats Directive and the Habitats Regulations make it clear that possible in-combination effects must be considered. It is also clear from the HRA, and LDC's and SDNPA's approach overall, that in-combination effects either have not been considered at all, or have not been properly considered. This is an irresistible inference from the known facts, namely that the HRA fails to aggregate the two relevant AADTs – 190 and 950 – and considers only the first datum. Had the requisite aggregation occurred, the 1,000 AADT threshold would have been exceeded and an appropriate assessment would or should have been undertaken. Further, to the extent that the DMRB does not require an in-combination assessment, Mr Hobson submitted that it contains legal error which vitiates the relevant decisions.

67. Ultimately, Mr Hobson accepted that his second ground could not add to his first. I agree: if he wins on his first ground, he does not need the second; if he loses on his first ground, the examining Inspector did not err in failing to address a matter which could make no difference to the outcome. In any case, it is clear that the examining Inspector did consider all the representations which were made to him; and there is no legal requirement on him to address each and every of them *seriatim*.

68. Mr Hobson submitted that he was not out-of-time to bring this challenge against LDC's adoption of the development plan. The effect of section 28(3) of the 2004 Act

was that LDC's adoption of the plan had no legal effect until SDNPA adopted the self-same plan on 23rd June 2016. Thus, the relevant date for the purposes of the six-week time limit, which is non-extendable, is 23rd June; and the claim was brought in time.

69. Mr Moules submitted that it is clear from the HRA that in-combination effects were properly considered. His essential argument was that Natural England gave expert advice to LDC and SDNPA (being the same advice it had previously given to WDC) that the 1,000 AADT threshold was sufficiently robust and precautionary to cover any likely scenario of in-combination effects. The amounts of nitrogen dioxide in play are so small that they are effectively *de minimis* and of neutral effect. Given that (i) the HRA is based on expert advice which I should be slow to second-guess, and (ii) the correct approach is in any case Wednesbury unreasonableness, I should not hold that there was any error of law in the decision-making process.

70. Mr Moules also submitted that WDC itself had followed exactly the same approach as did LDC and SDNPA in relation to its HRA. In my view, that was at best a jury point. Further, my reading of the WCS is that in-combination effects could not be considered because the JCS the subject-matter of these proceedings was not sufficiently developed to enable any sensible AADT data from over-the-border plans to be accommodated. That, on any view, was a Wednesbury reasonable approach.

71. I suggested to Mr Moules that the identification of legal error in the Interested Party's advice might not be sufficient for WDC's purposes. The challenge was not to Natural England; it was to the LDC/SDNPA development plan as recommended to them by SSCLG's Inspector following independent examination under section 20 of the 2004 Act. Although this point had not been foreshadowed in Mr Moules' skeleton argument, he took the baton from me and ran with it. His submission was that the relevant decision-makers were entitled to rely on expert advice which was not flawed on its face.

72. Mr Findlay adopted Mr Moules' submissions in their entirety. He relied on Mott as authority for the proposition that expert advice should not be subjected to meticulous scrutiny by the court, particularly in circumstances where no contrary expert opinion has been adduced by WDC. He submitted that it is clear from the HRA that in-combination effects were considered. Exactly *how* they were considered, in the context of the expert advice which was available to the decision-maker, is outwith the realistic scope of a section 113 challenge.

73. Mr Findlay's submission on the time point was elegantly simple. Given that I was persuaded by his argument, I do not feel it necessary to summarise it at this juncture.

74. I am grateful to all Counsel for their submissions. In this judgment I have tended to focus on the oral argument, although I continue to bear in mind the skeleton arguments, which I carefully studied before the hearing started.

Discussion and Conclusions

Timing

75. The six-week time-limit under section 113(3B) is absolute, and cannot be prolonged on any discretionary basis. Had I been able to apply any exercise of discretion to these facts, I would have done so.

76. Further, the section 113 challenge is within time as regards SDNPA's adoption of the JCS. Mr Findlay's objection related only to LDC's adoption of the JCS in May 2016. Strictly speaking, the challenge is to the JCS *qua* development plan, and not to the decision to adopt it; but it is common ground that time runs from a local planning authority's adoption of the plan. My analysis should be understood in these terms.

77. Ultimately, the contest between Mr Hobson and Mr Findlay resolved into one issue: which sub-section of section 28 of the 2004 applies? *If* section 28(3) is applicable (Mr Hobson's analysis), it would follow that the JCS would not be "done" by the LPAs – in other words, be adopted and have full legal effect – until the relevant step had been taken by both local planning authorities. *If* section 28(2) is applicable (Mr Findlay's analysis), it would follow that the whole of Part 2 of the 2004 Act would apply to joint development documents in the same way as Part 2 applies to (single) development documents. Before analysing the effect of this being a sub-section (2) case, which in my judgment it is, I need to explain why I consider that this is not a sub-section (3) case.

78. Section 28(3) applies only to steps which "must be done by or in relation to a local planning authority". Thus, if one takes section 19 as an example, a LPA must prepare development plan documents in accordance with the local development scheme. The effect of section 28(3) is that joint local development documents must be prepared in accordance with the local development schemes for each of the LPAs.

79. The adoption of a development plan document is not a mandatory step. Under section 23(2), the authority may adopt the plan, but it is not obliged to do so. It is no answer, *pace* Mr Hobson's submission, to say that the adoption of the plan is a mandatory precondition to its validity, because that is to confuse two separate questions.

80. It follows, in my judgment, that section 28(3) does not apply to this case. Sub-section (3) is worded as a sub-set of section 28(2); and in my view the earlier sub-section applies. Section 28(2) applies in terms to steps which may be taken by an LPA, and such steps include adoption of plans under section 23. In my opinion, the effect of section 28(2) is that the whole of Part 2 of the 2004 Act applies to steps taken in relation to joint local development documents as they are expressed in that Part to apply to (single) documents. Thus, and taking section 23 as an example, it is expressed to apply to "local development documents". Without more, that would be a reference to documents prepared by one LPA (sub-section (1) uses the singular, "authority"). So, section 28(2) operates so as to apply section 23 to joint development documents prepared by more than one authority. Further, the operation of the sub-section is not that adoption does not take effect until all relevant authorities have adopted the plan (c.f. sub-section (3)), but merely that section 23 applies in the same way to joint plans as it does to single plans. On this approach, the adoption of a joint plan under section 23 takes effect for that authority when "it is adopted by resolution of the authority" (see section 23(5)). The effect of section 28(2) is not that section 23(5) should be applied in such a manner that "resolution" means "joint resolution" and/or that "authority" means "authorities".

81. Further, section 28(3) operates in situations where the step must be carried out jointly and simultaneously. It cannot apply to a situation where, as Mr Hobson accepts, each LPA may adopt the JCS on different dates.

82. The whole structure of Part 2 of the 2004 Act is predicated on a development plan document being the development plan for the relevant local planning authority, which means that authority's geographical area. In the present case, the JCS became the development plan document for LDC's area once adopted by LDC; it did not become the development plan document for SDNPA's area until it was adopted by SDNPA. Conceptually and juridically, therefore, the JCS had a separate status before it was adopted by both authorities; and, I would add, thereafter – it continues to apply to each authority's area on a discrete basis.

83. It follows that WDC is in-time to challenge SDNPA's adoption of the JCS but out-of-time to challenge LDC's adoption of the JCS. Whether this matters will be addressed in the final section of this judgment.

The First Ground

84. Mr Hobson's submissions had two essential limbs or elements, which at times were in danger of becoming conflated. As I shall explain at the end of this judgment, the reasons for the conflation may not be difficult to understand, but at least for analytical purposes I consider that the two elements should be separated. The first limb of his argument was that the HRA did not even purport to undertake an evaluation, for these scoping purposes, of combined effects. The second limb was that, if it did, it was based on Natural England's advice which was vitiated by legal error.

85. Examining the first limb, it cannot be seriously in dispute that Article 6(3) of the Habitats Directive requires an assessment of possible in-combination effects. It says so in terms. It is also clear that, by the time the HRA was being prepared for the purposes of this JCS, the neighbouring district council had adopted its JCS (in alliance with SDNPA) which had been based on an HRA stating that the impact of the plan on the relevant stretch of the A26 adjacent to the SAC was "neutral". However, it is also clear that it was "neutral" in the sense that it was below the threshold of 1,000 AADT.

86. Did this HRA purport to examine possible in-combination effects, or did it exclude these as being legally irrelevant? I have already mentioned the debate between Counsel as to the true interpretation and effect of the DMRB, and whether it requires the evaluation of in-combination effects at the scoping stage. Mr Findlay's attempt to persuade me that it does not was in danger of being counter-productive. If the HRA, based as it was at least in material part on the DMRB, failed to address in-combination effects on grounds of principle, I would have held that the HRA would be vitiated by legal error. It would be based on policy or guidance, alternatively an interpretation of it, which was flawed, being contrary to Article 6(3) of the Habitats Directive. Further, if I understood Mr Moules' submission correctly, he was contending that the upshot of the DMRB was that in-combination effects only fell to be considered at the "appropriate assessment" stage, and not at the scoping stage. He directed my attention to paragraph 3.6 (see my paragraph 57 above). I have already said that this is not my reading of paragraph 3.6, but if I am wrong about that I see no logical distinction between (a) in-combination effects relevant to scoping, and (b) in-

combination effects relevant to "appropriate assessment". Article 6(3) draws no such distinction, and none can sensibly exist. If cumulative effects are not considered at the scoping stage, they clearly risk not being considered at all.

87. Despite the Defendant's collective efforts to blow me off course, I will hold fast to the right co-ordinates. In my judgment, the better interpretation of the DMRB is that, at least in principle, in-combination effects are potentially relevant at both stages. The DMRB may not be as clear as it might be, and I have already pointed out that paragraph 3.12 does not expressly require a cumulative assessment (it does not expressly preclude one either). But in my view that is the effect of paragraph 1.7(v) of Volume 11, Section 2, Part 4, dealing with "*Scoping* of Environmental Impact Assessments" (my emphasis). Furthermore, there is nothing in this HRA which indicates that a restrictive approach to the DMRB was taken. On the contrary, the HRA stated that in-combination effects fell for consideration at the scoping stage: see paragraphs 2.7, 5.20, and 5.22 – 5.27.

88. It follows that I must reject the first limb of Mr Hobson's submission that in-combination effects were eliminated from consideration within the HRA on *a priori* grounds.

89. However, in my judgment there is much greater force in the submission (the second limb) that Natural England's advice was plainly erroneous.

90. I appreciate that this is a specialist area and that the court must avoid delving into the minutiae of expert opinion evidence which is beyond its competence. The court should be doubly slow to criticise expert opinion where there is no contrary evidence being advanced by WDC. Even so, these self-denying ordinances, although salutary, are by no means absolute.

91. I return to the AQTAG21 document (see paragraph 62 above), and the second bullet point. This provides the only reason, beyond bare assertion, for Natural England's conclusion that in-combination effects are in practice covered by the 1,000 AADT threshold. I repeat the relevant portions:

> *"Experience of permitting allows us to be confident that it is unlikely that a substantial number of plans or projects will occur in the same area at the same time, such that their in-combination impact would give rise to concern at the appropriate assessment stage. If such a situation was [sic] to arise then the assessment could be determined on a case-specific basis."*

92. It is true that this bullet point is directed to stage 3 and not to stage 2 (on AQTAG's numbering), but I have already said that there can be no difference between the stages for these purposes. I do not know the empirical basis for this professional judgment, but it is not scientific. To the extent that it is a planning judgment, it is anecdotal and little more than an assertion. On the facts of the instant case, it is not a question of a couple of minor developments or projects being sought to be taken in combination, but a Core Strategy covering a twenty-year period which has already assessed the impact of additional traffic flows on an SAC within its borders. There is no sensible or logical basis for excluding the WCS from account. The final sentence of the cited

passage states that were there to be a substantial number of other plans these should be taken into account on a case-specific basis. This sentence is probably envisaging a situation where the AADT levels have not yet been modelled in relation to the other plans. Yet, in a case where the relevant AADT levels referable to two plans are known, the logic of the final sentence indicates that these should be considered in tandem.

93. The point may be tested in this manner. If the HRA for the WCS had stated that the modelled AADT value was 1,050 rather than 950, Mr Moules agreed that an "appropriate assessment" would have had to be made at the second stage: in other words, that these impacts could not be regarded as *de minimis*, or neutral, or be removed from scope. However artificial it may be to take a fixed threshold, and however minor in reality any predicated environmental impact may be, Mr Moules rightly accepted that the assessment would have to proceed to the next stage. This would be the case, therefore, despite the 1,000 AADT level being robust and extremely precautionary. In my judgment, there may be no distinction logically to be made between 1,050 additional traffic flows from one district and 1,050 (on our figures, in fact 1,140) additional traffic flows from two districts. The cars are the same and the nitrogen dioxide is the same. Mr Moules would have made the identical submission (and it would have been incorrect) had both AADT figures been 950. The >1,000 AADT figure is also above the *de minimis* threshold mentioned by Advocate General Sharpston.

94. Mr Moules came close to submitting that anything below 1,000 AADT was nugatory, and that this was a "zero sum game" (my attempt in oral argument to summarise the point he was making). I cannot accept that. A toxicologist would no doubt agree with Mr Moules that a rat subjected to one million of the lowest homeopathic doses of a toxin (i.e. zero) would suffer no adverse effects. But the same toxicologist would also point out that one dose at 95% of the relevant safety threshold for the toxin might have an effect if added to another small dose. This is very basic science. There can be no difference for these purposes between adverse animal and environmental effects.

95. I should return to the AECOM Memo referred to under paragraph 64 above. It refers to correspondence with AQTAG in March 2015 which has not been made available. AECOM assert that AQTAG has always drawn a distinction between, I paraphrase, minuscule effects which can be ignored, even in combination, and effects which are capable of being non-neutral, once combined. I can discern no explicit or implied reference to that distinction in anything I have been shown. In any event, an AADT of 950 is not minuscule. Even so, I can well see that distinctions may be capable of being drawn in practice, because if it is known that specific impacts are very low indeed, or are likely to be such, these can properly be ignored (e.g. if each AADT were known to be 20, it would require 50 of these to attain the threshold: depending on the precise facts, a reasonable planning judgment could be made that 50 plans or projects is inherently unlikely). This largely addresses the practical difficulty referred to in the AECOM Memo, but I appreciate that it does not give a complete answer to all situations, in particular where any given plan yields an impact close to the threshold. It is unnecessary for me to examine how these practical issues should be resolved because they do not in fact arise in the present case.

96. Finally, in a further AECOM memorandum dated 21st October 2016, which must also therefore be seen as post-decision evidence, the following assertion is made:

> *"Based on AECOM's experience of hundreds of air quality assessments we can confirm that a change in flows of 190 AADT on the A26 within 200m of [the SAC] would be very likely to result in an imperceptible change in concentrations of nitrogen oxides and nitrogen deposition rates. This is based on the traffic scoping criteria presented in the air quality assessment guidance within [the DRMB] which indicates that at changes in traffic flows of less than 1,000 AADT significant changes in air quality are not expected … In practice such small changes would be well within the limits of natural fluctuation that would be expected on this site year to year."*

In my view, this merely repeats the basic error. I repeat: 1,050 AADT is above the threshold; each tranche of 190 AADT (or whatever) is well below the threshold, and taken in isolation may well be regarded as making little contribution; 950 AADT + 190 AADT (from two sources) is exactly the same as 1,140 AADT (from one source). In my latter example, one could notionally disaggregate the composite figure and assert, making the same methodological error, that each relatively small amount may be disregarded.

97. I must mention the two authorities which I have held in abeyance, and revert briefly to the recent case of DLA Delivery Ltd.

98. First, in Ashdown Forest Economic Development LLP v SSCLG and others [2014] EWHC 406 (Admin), Sales J (as he was then) was considering WDC's decision to limit the housing requirement figure to 9,440, rather than the higher figure suggested by the claimant developer, in the light of the HRA and the 950 AADT figure. Part of WDC's reasoning process, as endorsed by the examining Inspector, was that there was little headroom (i.e. little space between 950 and 1,000) and that collaborative work with neighbouring districts would be required to ascertain whether there was really any scope for further proposed development. Sales J rejected the developer's contention that this was over-precautionary, and paragraphs 79-82 of his judgment must be read in that context. Although WDC's stance in that case was consistent with the stance it is taking now, I do not read Sales J as impliedly endorsing it; the issue simply did not arise for consideration in that case.

99. In SSCLG and another v Wealden DC [2017] EWCA Civ 39, WDC was challenging an inspector's grant of planning permission following an appeal by the developer. The 950 AADT figure featured in this case too. However, the issue for the Court of Appeal was not the same as the issue for this court: the case hinged on whether the inspector was entitled to take into account potential mitigation measures. That said, Natural England had given the same advice about in-combination effects as it had given in our case (see paragraph 70 of the inspector's decision letter). Mr Moules submitted that, if Natural England's advice was incorrect, Lindblom LJ would have said so. The answer to that submission is that no-one argued before the Court of Appeal that it was wrong.

100. In DLA Delivery Ltd a developer brought a procedural challenge to LDC's decision to allow the Newick Neighbourhood Plan to proceed to a referendum. The

second ground of appeal to the Court of Appeal was whether LDC had discharged the requirements of Article 6(3) of the Habitats Directive. In the HRA dated January 2013 (which I deduce to be the same HRA at issue in the instant case, although nothing turns on that), it was recognised that mitigation measures would be required in relation to new residential development within 7 kms of the Ashdown Forest SAC, as there was "no evidence to suggest that there would not be significant negative effects alone and in combination, on the [SAC] by increasing recreational disturbance". Thus, the real question was the suitability of the mitigation measures. I have considered the whole of Lindblom LJ's judgment, in particular paragraphs 29-52 and 73-76, but it does not bear directly on the issues I have to determine. Nonetheless, it might be said to lend some general support for my rejection of what I have called the first element or limb of Mr Hobson's primary submission. It does not support his second limb.

101. The examining Inspector in the instant case was not bound to follow the HRA, based as it was (at least in material part) on Natural England's advice, but in my judgment it is clear that he did so. It is also clear that Natural England's expert advice cannot be supported on logical and empirical grounds. I have reached this conclusion taking into account all the materials the Defendants expressly invited me to consider, but – as I will be explaining below – the same result flows even if all post-decision evidence were excluded from consideration. The second limb of Mr Hobson's submissions must be upheld.

102. This holding is necessary for Mr Hobson's forensic purposes, but is it sufficient? In order accurately to answer that question I must return to the jurisdiction of this court under section 113 of the 2004 Act. This jurisdiction is certainly wide enough to embrace error of law, including Wednesbury error, in the development plan documents. It was the role of the examining Inspector to determine whether the development plan documents were "sound" and in conformity with relevant regulatory requirements, including (in my view) the provisions of the Habitats Regulations. Thus, the current challenge is not directed to Natural England's advice; it is a challenge to the JCS based, at least in material part, on that advice.

103. There are a number of factual matters which need to be mentioned:

(1) LDC and SDNPA accepted Natural England's advice in good faith. Indeed, it is clear from paragraph 29 of the witness statement of LDC's senior strategic planning officer, Tondra Thom, that she sought a second opinion from Dr James Riley of AECOM in March 2016; and that he supported the Natural England position. She has exhibited a number of internal memoranda from AECOM, including those I have analysed at paragraphs 64, 95 and 96 above, but these all appear to post-date the decisions. Nothing particularly turns on this, but I am not clear which AECOM documents, if any, Ms Thom was considering in March 2016.

(2) The AQTAG material was not made available to any relevant decision-maker in this case, including those responsible for preparing the HRA. The decision-makers were simply told that it was Natural England's expert view that "1,000 AADT" was a sufficiently protective threshold to cover in-combination effects, or words to that effect.

(3) WDC did not attend the JCS hearings but two letters were written (see paragraphs 28 and 29 above). WDC clearly stated that adding 190 to 950 takes one above the 1,000 AADT threshold, and also clearly stated that no in-combination assessment had been carried out. However, WDC did not clearly state that Natural England's advice, to the effect that the 1,000 AADT level was sufficiently protective to accommodate in-combination assessment, was or must be incorrect. WDC knew the nature of Natural England's advice although, in parallel with LDC and SDNPA, it did not know on what methodology it was based. Even so, the author of WDC's correspondence may have thought that the point being made was so obvious that it did not need to be driven home.

104. The undertaking of an HRA is a condition precedent to the soundness of the development plan documents. That said, an HRA has here been undertaken. But I would also hold that an HRA infected by public law error would undermine the soundness of the development plan documents. Thus, if it were clear from the HRA, or any other document, that relevant policy or guidance had been misconstrued, or that such policy or guidance was itself legally flawed, the court would have to intervene. That said, I have held that the HRA did not commit errors of this nature. In so doing, I have rejected the Defendants' interpretation of the DMRB. Had I accepted their interpretation, I would have held that the HRA was legally flawed because the DMRB was erroneous. Thus, the real issue which arises is whether this HRA was infected by public law error because key advice on which it was based was plainly wrong.

105. Here, we have an HRA which refers to Natural England's advice and grounds itself upon it. As I have said, very little if any detail is given as to the basis of that advice, and as to any supporting reasoning and methodology. In my judgment, that advice cannot be characterised as a condition precedent to the validity of the HRA, in the sense of being an objective fact. Rather, it is part of the overall judgmental or evaluative basis for the conclusion set out in the HRA that, even taking into account cumulative effects, the impact would be neutral on this section of the A26. Accordingly, in terms of public law categories (to the extent that they illuminate) we fall under the rubric of Wednesbury unreasonableness rather than of "error of fact" or anything else.

106. I accept that these decision-makers have obtained expert advice and that LDC took additional counsel from AECOM. In my judgment, the issue hinges in the first instance on whether it was obvious from the face of Natural England's advice, having regard to any reasons given for it, that it was plainly wrong.

107. In my view, it was not apparent why Natural England was advising that a cumulative assessment did not require an aggregation of two figures. Of course, had the decision-makers seen the additional material which has been made available to me through Natural England itself, in discharge of its public law duty to place its cards on the table, the position would (on my analysis) be entirely straightforward. Although the Defendants were astute to ensure that I take post-decision evidence into consideration, there may be difficulties with an analysis which proceeds from the perspective of hindsight.

108. I have pondered whether there could be technical or methodological reasons pertaining to the science of environmental modelling militating against the need to undertake what looks to me like simple addition. Yet no such reasons have been suggested; it would be speculative to imagine that these might exist; and, I believe that Natural England's advice, brief as it was, cried out for further explanation. I return to the point that the cars are the same and the nitrogen dioxide is the same, regardless of their provenance. This case falls within the exceptional category of case where, at the very least, further specific inquiry of Natural England was necessary. Had the straightforward question been asked (namely, why does a cumulative assessment not entail the addition of two figures?), we know what the answer would have been: the relevant documents would have been produced, and/or an explanation identical to that contained in Ms Ashdown's witness statement would have been given. On that premise, I would hold that the only rational conclusion would have been for the decision-makers to have rejected Natural England's advice. For these purposes, it makes no difference if the decision-makers are the local planning authorities or the examining Inspector. The latter should have found that the development plan documents were unsound.

109. In any event, I would be prepared to go further. Even if one ignores all the post-decision evidence, the advice that in-combination effects are somehow catered for by the 1,000 AADT threshold lacks coherence, particularly in a situation where both figures are known – and one of them is already close to the margin. I have found that an HRA existed as a matter of precedent fact, and I have also fastened on Sales LJ's analysis in Smyth that evaluative assessments must be made. This must include an evaluation of expert evidence. However, if expert advice induces a decision-maker into error in carrying out the judgments mandated by Article 6(3), I consider that it would be both artificial and wrong to hold that the court should not characterise what has occurred as irrational. The Wednesbury error in the underlying advice[2] creates, without more, an equivalent Wednesbury error in the evaluative assessments carried out in formulating the HRA. If, for instance, the decision-makers had taken in-house advice which was plainly wrong, this court would intervene. The position can be no different because that advice was taken from a third party. Overall, it follows, I regret to say, that the baton I handed to Mr Moules (see paragraph 71 above) has helped nobody.

110. The Wednesbury error is even more obvious, in my judgment, if the post-decision evidence is taken into account, as I have already done in the context of what I have called the second limb of Mr Hobson's submission. It is not open to the Defendants to complain about this; the evidence was relied upon by them, and not by WDC. For the avoidance of doubt, I believe that this evidence is probably admissible in these proceedings because it served to explain, rather than to supplement, the advice that Natural England gave to the decision-makers.

111. Accordingly, applying traditional public law principles to this case, I am driven to conclude that the HRA is vitiated by Natural England's plainly erroneous advice. I have reached this conclusion on two bases: the first, because the decision-makers should have undertaken further inquiry of Natural England in circumstances where no explanation had been given for not aggregating two amounts; the second, because Natural England's error directly infects the decision-making process.

112. Although I have rejected Mr Hobson's submissions on what I have called his first limb of ground 1, and have upheld them on his second limb, I am not ignoring the obvious point that the distinction between these limbs is very fine indeed. As I have found, the premise of the HRA was that a cumulative assessment is required. Natural England was not saying otherwise. I have identified no guidance, policy or what I have called *a priori* basis which led those responsible for the HRA to fail to undertake what at least purported to be such an assessment. On the other hand, in reality no cumulative assessment *was* carried out because the only proper way in which it could be, in the circumstances of this case, was to do the addition. To all intents and purposes, therefore, Natural England's advice removed the premise of the HRA – that a cumulative assessment is required - and brought about a clear breach of Article 6(3) of the Habitats Directive.

Disposal

113. I have held that WDC is out-of-time to challenge LDC's adoption of the JCS. No such issue arises as regards WDC's challenge to SDNPA's adoption of the JCS. I have also held that the development plan documents in this case, in particular the HRA (together with other documents which are based on the HRA), are flawed for legal error in reliance on advice from Natural England that was plainly incorrect.

114. Natural England must reconsider its advice in the light of this judgment. Further, I direct that the Government Legal Department send a copy of this judgment to Highways England: the DRMB should be re-examined, and clarified, to reflect the concerns I have indicated.

115. When I handed down a first draft of this judgment to the parties, I invited submissions in writing on the issue of relief. I anticipated that there might not be agreement at the Bar as to the correct approach. Given the complexity of the issue, I invited two rounds of submissions from the parties, and posed a number of specific questions for Mr Moules in particular to address. I continue to be grateful to Counsel for their assistance.

116. Mr Hobson submitted that it has been sufficient for WDC's purposes to have succeeded against SDNPA. The focus of the challenge is to a "development plan document" (see section 113(7)) which is a joint document with two authors. It is the document which falls to be quashed, in whole or in part, not the decision to adopt it. The reference to quashing in part (see section 113(7)(a) and (7C)(a)) can only relate to specific policies in the JCS "which are of general coverage, and not to their geographical extent". Accordingly, Mr Hobson invited me to quash policies SP1 and SP2 of the JCS, in line with the relief sought in his Grounds.

117. In his further written submissions Mr Hobson relied on section 28(6) - (9) of the 2004 Act, but these subsections do not in my view take the argument any further. In so far as they have any potential relevance, that relates to the conclusion I have already reached on the time point (see paragraphs 75-83 above). Mr Hobson did not rely on section 28 at that stage of the debate, and having now looked at these provisions for the first time I consider that he was right not to do so.

118. Mr Moules and Mr Findlay both submitted that the effect of Mr Hobson's argument was to subvert my ruling that WDC is out-of-time to challenge LDC's adoption of the JCS. Although the challenge is to the JCS as a "development plan document", Counsel submitted that section 113(7) should be interpreted in such a way that any appropriate remedy is limited to the administrative area of the local planning authority against whom an in-time challenge has succeeded. Mr Moules initially submitted that I should quash policies SP1 and SP 2 insofar as the JCS is a development plan document for the administrative area of SDNPA, but in his further written submissions on the issue of relief indicated that I might consider other possible options. Mr Findlay advanced a number of additional submissions, giving me a range of options, all directed to the point that, on analysis, the contribution of additional housing in SDNPA's administrative area is so small that I should effectively ignore it for these purposes, and abstain from granting any relief.

119. I agree with Mr Moules that Mr Hobson's submission possesses a beguilingly simple quality. For that reason, it has attraction. However, I also agree with him that the submission is incorrect. In my judgment, it neatly, and erroneously, circumvents the combined effect of section 113, subsections (2), (3), (3B) and (11). These provisions make clear that the challenge is directed to the JCS *qua* "relevant document", and in my opinion it stands as a development plan document for LDC and for SDNPA separately. This is the effect of sections 17(8), 37(3) and 38(3)(b), as previously analysed in this judgment. Ultimately, the ability to challenge a development plan document under this section is inextricably intertwined with the adoption of the document as such by the LPA sought to be impeached. Or, put another way, it would be contrary to the intendment and policy of section 113 for an in-time challenge in relation to SDNPA's adoption of the JCS to have any remedial effect in relation to LDC's development plan document.

120. Further, on their true construction subsections (7), (7A) and (7B) enable the court to grant relief, including partial quashing, on the basis of what Mr Hobson characterises as geographical coverage and/or in respect of individual decision-makers. This, again, reflects the status of the JCS as a "relevant document" for each separate local planning authority. If power were exercised under section 113(7)(b), for example, the JCS would, in the circumstances of the present case, have to be remitted to SDNPA and not to LDC.

121. Considering the same point but from a different perspective, it follows that I do not have power to quash the JCS insofar as it is a development plan document for the geographical area of LDC. Nor do I have power to grant any other relevant relief against LDC under section 113(7B). As regards LDC, my judgment is solely of declaratory effect and, as Mr Moules puts it, "will necessarily be relevant to the weight decision-makers give to policies SP1 and SP2 and also their decision whether an appropriate assessment is required for individual planning applications".

122. The next question which arises is the form and nature of the relief I should grant against SDNPA, if any. Given the discretionary nature of this jurisdiction, I should refrain from granting any relief if satisfied that the legal error I have identified could have made no material difference to the outcome. The level of satisfaction would have to be high: in cases of reasonable doubt, the court should nonetheless grant relief in the appropriate form.

123. Policy SP1 covers both plan areas without clearly differentiating between them for these purposes. However, SP1 and SP2 come as a pair of spatial policies, and are mutually interdependent.

124. Mr Findlay took me to the fine detail of the breakdown of new homes in policy SP2. It seems clear that, of the 6,900 homes that policy SP1 identifies to be provided in the plan period, only 1,177 homes plus windfall are planned to be provided in the area of SDNPA - the figure is reached by adding all the homes in Lewes and Ditchling which are the two main settlements in the National Park. Further, an examination of the HRA Addendum dated March 2014 shows that the AADT referable to the A26 and attributable to these 1,177 homes is, on a reasonable worst case basis, 49. I note that Mr Hobson chose not to enter this discussion. In my judgment, Mr Findlay's factual analysis is correct, but where that takes him is another matter.

125. The basic arithmetic is entirely straightforward. Mr Findlay invites me to conclude that 950 + 49 is still below the threshold of 1,000 AADT. He relies on further arguments too, but in my view these are either an attempt to revive points I have already rejected, or go behind what was common ground before me (sc. the irrelevance of the 7 km and 15 km notional boundaries). Mr Moules recognises that there may be two possible approaches, although observes that the logic of my judgment on the main issue means that a cumulative assessment of all known elements (including LDC's contribution) takes the AADT figure above the 1,000 threshold.

126. The point is not free from difficulty, although I reject Mr Hobson's submission that this difficulty is a reason for not limiting any quashing order to SDNPA. The 950 AADT contribution from WDC must be taken as a "given" and included in the calculation. By parity of reasoning, the 141 AADT contribution from LDC must be treated in the same way, although no separate challenge may now be made to it. Thus, the in-combination assessment which should notionally (for these purposes) be undertaken by SDNPA, or by the court considering the question of relief, must proceed on the basis of an AADT contribution of 1,091 coming from elsewhere. In these circumstances, I would frame the issue slightly differently than did Mr Moules. Should I just be considering the *additional* contribution coming from SDNPA taking a baseline figure which is already above the threshold, or should I be taking a more holistic view, being aware of the fact that no proper in-combination assessment has yet been undertaken?

127. I would agree with Mr Findlay that the difference between an AADT of 1,091 and one of 1,140 cannot be regarded as significant. This is not because an AADT of 49 should always be regarded as minuscule, but rather because no relevant threshold is being breached. The position would be different if the figures under scrutiny were, for example, 991 and 1,040. Furthermore, I would also agree with Mr Findlay that, on the alternative approach which I have disfavoured, and which ignores LDC's contribution, SDNPA's contribution viewed in isolation is just below the threshold of 1,000 AADT.

128. However, the real question in my judgment concerns the correct treatment of what I have called the baseline AADT figure of 1,091. The logic of my judgment is

that WDC's contribution must be taken into account. It is also the logic of my judgment that LDC's contribution should be taken into account. Both contributions cannot be separately challenged, for different reasons, but both are relevant for these purposes. I agree that SDNPA's contribution has not brought about the exceeding of the threshold, whichever way the arithmetic is done. Taking a narrow view of causation, SDNPA's contribution has not *caused* the transcending of the threshold. Even so, I have concluded that this is too circumscribed an approach. Article 6(3) of the Habitats Directive is not predicated on the sort of fine causative distinctions which may appeal to a common lawyer but approaches the issue more broadly and purposively, in line with the precautionary principle. It requires an in-combination assessment which (on these facts) does not differentiate between the separate contributions of WDC, LDC and SDNPA. In my judgment, the contributions must be aggregated; and, if the total figure indicates a likely significant effect, it is incumbent on the plan-maker to proceed to the next stage in the assessment process.

129. I have considered Mr Findlay's submission that it is unnecessary to quash policies SP1 and SP2, and that it is sufficient to remit with a direction, alternatively sufficient to quash these policies in part. I am not convinced that Mr Findlay's panoply of potential options makes much difference in practice, because whatever relief is granted these policies would need to be reconsidered by SDNPA in the light of this narrative judgment. The parties did not assist me with submissions as to the practical effect of my judgment, in particular what would need to be done if a detailed assessment of environmental impact had to be carried out. In my view, it is simpler, neater and more appropriate to quash policies SP1 and SP2 to the extent that they form part of the development plan for SDNPA's area.

130. I am not minded to grant any form of additional declaratory relief.

ORDER

UPON HEARING J. Hobson QC and S. Lyness of Counsel on behalf of the Claimant, and R. Moules of Counsel on behalf of the First Defendant and J. Findlay QC and C. Parry on behalf of the Second and Third Defendants, on 8 February 2017

IT IS ORDERED THAT:

(1) Policies SP 1 and SP 2 of the Lewes District Local Plan Part 1 Joint Core Strategy 2010-2030 are hereby quashed to the extent that they form part of the Development Plan for the Third Defendant's administrative area;

(2) The First and Third Defendants shall each pay 50% of the Claimant's costs (referable to the claims against those Defendants), to be assessed if not agreed;

(3) The Claimant shall pay the Second Defendant's costs (referable to the claim against that Defendant), to be assessed if not agreed;

(4) All applications for permission to appeal refused.

Dated this 20th day of March 2017

Note 1 On 9th July 2015 the Court of Appeal overturned part of Sales J's judgment, but immaterially for the purposes of these proceedings.

Note 2 If the point were made that the Natural England advice could not be judicially reviewed, I would revise this wording to reflect a form of Bolam test. The substance of the matter would remain the same.

Appendix 7

No Significant Effects Report

Revision 1

Abergelli Power Project
No Significant Effects Report

Abergelli Power Limited
Novemeber 2018

Document Control			
Document Properties			
Organisation	AECOM		
Author	Ursula Jones and Milly Kent		
Approved by (1st checker)	James Riley		
Approved by (2nd checker)	Max Wade		
Title	No Significant Effects Report		
Document Reference	N/A		
Version History			
Date	**Version**	**Status**	**Description/Changes**
30/11/2017	V1.0	Draft	First draft
13/12/2017	V1.8	Draft	Draft incorporating comments
26/04/2018	V2.0	Final	Final addressing S42 responses
06/11/2018	V3	Final	Submitted at Deadline 1 in response to FWQ

Prepared for:

Abergelli Power Limited

Prepared by:

AECOM Limited
3rd Floor
Portwall Place
Portwall Lane
Bristol
BS1 6NA
UK

T: +44 117 901 7000
aecom.com

CONTENTS

TABLES

PLATES

FIGURES

APPENDICES

1. No Significant Effects Report

1.1 Introduction

a) Background

1.1.1 This report represents a Habitats Regulations Assessment (HRA) Screening Document prepared as part of the Environmental Impact Assessment for Abergelli Power Project (hereafter referred to as the 'Project).

1.1.2 The report is designed to serve two key functions:

- To assist Abergelli Power Limited (APL, hereafter referred to as the Applicant) by making it easier to undertake and consult on a Habitat Regulations Assessment; and,
- To act as a confirmatory checklist that can be used to ensure that the relevant information needed for a Habitats Regulations Assessment has been undertaken.

b) The Habitats Directive and Habitat Regulations

1.1.3 The need for an assessment of impacts on Natura 2000 sites (the collective name for European designated sites, including Special Protection Areas (SPA) and Special Areas of Conservation (SAC)) is set out within Article 6 of the Habitats Directive, and transposed into UK law by the Habitats Regulations. The ultimate aim of the Habitats Directive 1992 is to "maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest" (Article 2(2)). This aim relates to habitats and species, not the European Sites themselves, although the European Sites have a significant role in delivering favourable conservation status.

1.1.4 It is a requirement of the Habitats Directive 1992 and the Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations' (Plate 1.1)) that plans and projects are subject to 'Appropriate Assessment' if it is likely that they will lead to significant adverse effects on a Natura 2000 site, either alone or in combination with other plans or projects. It is the duty of the competent authority (the Secretary of State in relation to the Project) to make the determination as to whether significant adverse effects are likely and, if necessary, to then undertake the Appropriate Assessment. The promoter of the Project can be asked to supply information to inform those assessments and decisions.

1.1.5 The Habitats Directive applies the precautionary principle to European Sites. Consent should only be granted for plans and projects once the relevant competent authority has ascertained either that no likely significant effects will arise or (through the Appropriate Assessment) that there will be no adverse effect on the integrity of the European Site(s) in question. Where an appropriate assessment has been carried out and results in an assessment of adverse effects on integrity, or if uncertainty remains, consent must only be granted if there are no alternative

solutions and there are imperative reasons of over-riding public interest (IROPI) for the development, and compensatory measures have been secured.

1.1.6 Throughout this report, the term 'Habitat Regulations Assessment' is used to refer to the overall procedure required by the Habitat Regulations, as described above.

1.1.7 All the European sites referenced in this document are shown in Figure 1.

Plate 1.1: The legislative basis for Appropriate Assessment

Habitats Directive 1992

Article 6 (3) states that:

"*Any plan of project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives."*

Conservation of Habitats and Species Regulations 2017

Regulation 63 states that:

"*A competent authority, before deciding to … give any consent for a plan or project which is likely to have a significant effect on a European site … must make an appropriate assessment of the implications… for that site in view of that site's conservation objectives… The competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site".*

1.1.8 This report has been prepared having regard to all relevant case law relating to the Habitats Regulations – in particular, the recent European Court of Justice case of People Over Wind, Peter Sweetman v Coillte Teoranta (C-323/17) has been taken into account as it directly concerns the approach to screening under the Habitats Regulations (the stage prior to appropriate assessment).

1.1.9 The case held that "it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site" (paragraph 40). This establishes that 'mitigation measures' cannot be taken into account at the screening stage, but it is important to note that not all mitigation measures are excluded from consideration – only those "intended to avoid or reduce the harmful effects of the… project *on that site*" (emphasis added). Mitigation measures which are (for example) intended to avoid effects on a local watercourse and which is not part of the European site, can be taken into account.

1.1.10 Where mitigation measures are mentioned in this report, they are therefore ones which may reduce or avoid harmful effects on certain (local) habitats or species, but they are not relied on to avoid or reduce harmful effects on the European sites discussed below. Such measures will, at most, ensure that a conclusion of no LSE in respect of a European site reached separately, is confirmed.

1.1.11 Preparation of this report has involved reference to Planning Inspectorate Advice Note Ten: Habitat Regulations Assessment relevant to Nationally Significant Infrastructure Projects (November 2017).

1.1.12 PINS Advice Note Ten requires an evaluation of the potential for the Project to require other consents which could also require Habitats Regulations Assessment by different competent authorities, and a statement as to whether the DCO boundary of the project overlaps with devolved administrations or other European Economic Area (EEA) States.

1.1.13 It is confirmed that the DCO boundary of the project does not overlap with areas of devolved administrations or with those of other EEA States.

1.1.14 The following competent authorities will need to conduct an HRA:

- the Secretary of State, in relation to the DCO application; and,
- Natural Resources Wales (NRW), in relation to the environmental permit application.

c) Project Description

1.1.15 The Project Site is approximately 35.52 ha and is located near to the village of Felindre, Swansea (see Figure 1). The Project development proposals are for a proposed 299MW Open Cycle Gas Turbine (OCGT) power station. The Project comprises the following principal elements:

- A new Power Generation Plant;
- A new Electrical Connection; and,
- A new Gas Connection.

1.1.16 The Power Generation Plant, Gas Connection and Electrical Connection together with their construction access/laydown and future maintenance access/laydown requirements are referred to as the Project.

1.1.17 A detailed description of the Project is provided in Chapter 3 of the Environmental Statement (ES) (Ref. 1.1). A summary is provided in Table 1-1 below.

Table 1-1: Project Components

Project Component	Description	Consenting Route
Power Generation Plant	An Open Cycle Gas Turbine (OCGT) peaking power generating station, fuelled by natural gas and capable of providing a rated electrical output of up to 299 Megawatts (MW). The Power Generation Plant comprises: • Generating equipment including one Gas Turbine Generator with one exhaust gas flue stack and	*Development Consent Order (DCO) pursuant to the Planning Act 2008*

Project Component	Description	Consenting Route
	Balance of Plant (BOP) (together referred to as the 'Generating Equipment') which are located within the 'Generating Equipment Site'; • An Access Road to the Project Site from the B4489 which lies to the west, formed by upgrading an existing access road between the B4489 junction and the Swansea North Substation (the Substation) and constructing a new section of access road from the Substation to the Generating Equipment Site; and • A temporary construction compound for the storage of materials, plant and equipment as well as containing site accommodation and welfare facilities, temporary car parking and temporary fencing (the Laydown Area. A small area within the Laydown Area will be retained permanently (the Maintenance Compound). • Ecological Mitigation Area – area for ecological enhancement within the Project Boundary. • Permanent parking and drainage to include: a site foul, oily water and surface water drainage system.	
Gas Connection	The Gas Connection will be in the form of a new above ground installation (AGI) and underground gas connection (the Gas Pipeline). This is to bring natural gas to the Generating Equipment from the National Transmission System. The Gas Pipeline will follow an approximate north-south route corridor, between the National Gas Transmission System south of Rhyd-y-pandy Road and the Generating	*The Gas Connection will be consented through the Town and County Planning Act (TCPA) and is not part of the DCO Application. Though this Project element is not part of the DCO Application, APL is likely to seek powers of compulsory acquisition over the land required for the Gas Connection.*

Project Component	Description	Consenting Route
	Equipment Site.	
Electrical Connection	This is an underground electrical cable to export power from the Generating Equipment to the National Grid Electricity Transmission System (NETS).	*The Electrical Connection will be consented through Permitted Development and is not part of the DCO Application. Though this Project element is not part of the DCO Application, APL is likely to seek powers of compulsory acquisition over the land required for the Electrical Connection.*

1.1.18 Table 1-2 provides indicative maximum and minimum dimensions for the main plant items which will be present at the Generating Equipment Site. The ground level at the Generating Equipment Site will be approximately 90 m AOD and the heights in Table 1-2 are measured from this level.

Table 1-2: Parameters for Assessment

Building or Structure	Maximum Height (m)	Minimum Height (m)	Maximum Length (m)	Maximum Width (m)
Gas turbine generator (including gas turbine, generator, air inlet filter house, air inlet duct, exhaust diffuser, and auxiliaries such as lube oil system, air dryers, fuel gas filter package, instrument air system, compressor washing)	27	-	50	40
Exhaust gas emission flue stack	45	35	-	12
Control room/office/ workshop	7	-	45	25
Emergency Generator	6	-	13	5
Gas receiving station (including compression station, emergency generator, Joule-Thompson boilers and other auxiliary control cabinets))	10	-	70	50
Gatehouse	4.5	-	9	8
Demineralised water tank	7	-	7	7
Fire water tank	15	-	15	15
Above ground installation (AGI)	3	-	85	35
Minimum offtake connection (MOC)	3	-	35	35
Gas Pipeline inspection gauge facility	3	-	35	35
Fin Fan Coolers	10	-	28	14
Transformer compound (including generator step up transformer, unit and other transformers, connection to underground cable and associated equipment.)	15	-	65	60

1.1.19 The need and alternatives for the Project are discussed in detail Chapter 5 Alternatives Considered of the ES (Ref. 1.1).

1.1.20 The detailed decommissioning methodology cannot be finalised until immediately prior to decommissioning, but would be in line with relevant legislation and policy at that time.

1.1.21 The working assumption has been made for the purposes of this assessment that after 25 years, the Generating Equipment would be removed and the Generating Equipment Site re-instated to a similar condition as before construction; below ground structures would remain in situ so as to avoid unnecessary disturbance of above ground habitats and/or species. Any decommissioning phase would be likely to be of a similar duration to construction i.e. 22 months.

1.1.22 A working assumption has been used that the Electrical Connection and Gas Connection would be decommissioned after 25 years. Elements of the Gas Connection and Electrical Connection may be left in situ as this is likely to cause less environmental effects than removal. This would be the case for the Pipeline, for example.

1.2 Designated Sites Scoped into HRA Screening

1.2.1 Table 1-3, Table 1-4 and Table 1-5 provide a description of all the Natura 2000 sites within 10km of the Power Generation Plant and which are scoped into the HRA Screening. The tables set out the distance of the relevant Natura 2000 site from the proposed stack, and justification for inclusion in the HRA Screening. This approach is in line with the consultation response received from NRW (email dated 13 September 2017).

Table 1-3: Crymlyn Bog SAC and Ramsar

Summary of Designating Features	Justification for Inclusion in HRA Screening
Crymlyn Bog SAC and Ramsar **6.7km south-east** Crymlyn Bog, which covers approximately 299ha, comprises floodplain-valley mire located within a lowland coastal context and is the most extensive wetland of its type in Wales. The mire features a complex mosaic of vegetation types, supporting examples of swamp, tall herb fen, fen meadow and carr communities. The site supports an exceptionally wide range of rich and poor fen communities, some of which bear a close floristic affinity to certain floodplain mires in East Anglia. The presence of significant areas of saw sedge (*Cladium mariscus*) swamp is notable in extensive stands of this uncommon vegetation type, occurring at only three other sites in Wales. Crymlyn Bog is part of a larger inter-estuarine complex which includes the adjacent Pant y Sais fen.	
SAC Annex I habitats that are a primary reason for selection of this site: • Transition mires and quaking bogs; and, • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae*. Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site: • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*).	Supports habitats sensitive to nitrogen and acid deposition.

Summary of Designating Features	Justification for Inclusion in HRA Screening
Ramsar Designated under Ramsar Criterion 1: Largest example of valley floodplain topogenous mire in South Wales, and one of the largest surviving fens in the west of Britain. Very few other sites are known to support a comparable complexity and diversity of vegetation. Designated under Ramsar Criterion 2: Supports a substantial population of the nationally-rare slender cotton-grass *Eriophorum gracile*, and a rich invertebrate fauna including many rare and highly localised species. Designated under Ramsar Criterion 3: The site supports 199 vascular plant species including 17 regionally-uncommon and one nationally rare.	

Table 1-4: Carmarthen Bay and Estuaries SAC

Summary of Designating Features	Justification for Inclusion in HRA Screening
Carmarthen Bay and Estuaries SAC **7km west** Carmarthen Bay and Estuary is an example of a large estuarine site covering approximately 66,092ha on the south coast of Wales, encompassing the estuaries of the Rivers Loughor, Tâf and Tywi (coastal plain estuaries) and the Gwendraeth (a bar-built estuary). Carmarthen Bay is also an example of an extensive shallow bay which varies considerably in salinity, wave action, tides, and sediment types and therefore has a wide, varied range of flora and fauna associated with each of the zones. The estuary complex includes the sandbank of Helwick Bank, which is a linear shallow subtidal sandbank that is unusual in being highly exposed to wave action and tidal action, as well as several other smaller sandbanks in relatively shallow waters. The site also includes extensive areas of intertidal mudflats and sandflats as well as being a representative of pioneer glass wort (Salicornia spp.) saltmarsh which has a full transition sequence to upper salt-meadow and important sand dune habitats.	
Annex I habitats that are a primary reason for selection of this site: • Sandbanks which are slightly covered by sea water all the time; • Estuaries; • Mudflats and sandflats not covered by seawater at low tide; • Large shallow inlets and bays; • Salicornia and other annuals colonizing mud and sand; and, • Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*). Annex II species that are a primary reason for selection of this site: • Twaite shad *Alosa fallax*	Hydrological connectivity between the Project Site via the Afon Llan and Afon Lliw. Supports habitats sensitive to nitrogen deposition.

Summary of Designating Features	Justification for Inclusion in HRA Screening
Annex II species present as a qualifying feature, but not a primary reason for site selection: • Sea lamprey *Petromyzon marinus*; • River lamprey *Lampetra fluviatilis*; • Allis shad *Alosa alosa*; and, • Otter.	

Table 1-5: Burry Inlet SPA and Ramsar

Summary of Designating Features	Justification for Inclusion in HRA Screening
Burry Inlet SPA and Ramsar **8.6km south-west** Burry Inlet is a large estuarine complex covering approximately 6,628ha and located between the Gower Peninsula and Llanelli in South Wales. It includes extensive areas of intertidal sand- and mud-flats, together with large sand dune systems at the mouth of the estuary. The site contains the largest continuous area of saltmarsh in Wales (2,200ha). The estuary experiences wide tidal fluctuations (about 8m) which have the consequence of exposing a large extent of intertidal sediments on a regular basis. These are mostly sandy, but muddy substrates are to be found in more sheltered areas. The Burry Inlet regularly supports large numbers of overwintering wildfowl and waders that feed in the saltmarshes and on the intertidal areas.	
SPA This site qualifies under Article 4.2 of the Birds Directive (2009/147/EC) by supporting populations of European importance of the following migratory species: <u>Over winter</u>: • Oystercatcher *Haematopus ostralegus*, 13,590 individuals representing at least 1.5% of the wintering Europe& Northern/Western Africa population (5 year peak mean 1991/2 - 1995/6); and, • Pintail *Anas acuta*, 1,772 individuals representing at least 3.0% of the wintering Northwestern Europe population (5 year peak mean 1991/2 - 1995/6). <u>Assemblage qualification: A wetland of international importance.</u> The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl Over winter, the area regularly supports 34,962 individual waterfowl (5 year peak mean 1991/2 – 1995/6) including: curlew *Numenius arquata*, black-tailed godwit *Limosa limosa islandica*, dunlin *Calidris alpina alpina*, knot *Calidris canutus*, shoveler *Anas clypeata*, shelduck *Tadorna tadorna*, oystercatcher *Haematopus*	Hydrological connectivity between the Project Site via the Afon Llan and Afon Lliw. Supports habitats sensitive to nitrogen and acidit deposition.

Summary of Designating Features	Justification for Inclusion in HRA Screening
ostralegus, pintail *Anas acuta*, whimbrel *Numenius phaeopus*. **Ramsar** Designated under Ramsar Criterion 5: *Assemblages of international importance.* Species with peak counts in winter: 41655 waterfowl (5 year peak mean 1998/99-2002/2003). Designated under Ramsar Criterion 6: *Species/populations occurring at levels of international importance.* Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: • Common redshank, *Tringa totanus totanus*, 857 individuals, representing an average of 0.7% of the GB population (5 year peak mean 1998/9 – 2002/3). Species with peak counts in winter: • Pintail, *Anas acuta*, NW Europe 2687 individuals, representing an average of 4.4% of the population (5 year peak mean 1998/9 – 2002/3); • Oystercatcher, *Haematopus ostralegus ostralegus*, Europe & NW Africa – wintering 14861 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9 – 2002/3); and, • Red knot, *Calidris canutus islandica*, W & Southern Africa (wintering) 3618 individuals, representing an average of 1.2% of the GB population (5 year peak mean 1998/9 – 2002/3). Species/populations identified subsequent to designation for possible future consideration under Criterion 6. Species with peak counts in winter: • Northern shoveler, *Anas clypeata*, NW & C Europe 467 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9 – 2002/3).	

1.3 Screening for Likely Significant Effects

a) Identification of Potential Impacts

1.3.1 All potential impacts from all stages of the Project have been considered. The potential pathways from all stages of the Project have been considered but the following pathways have been scoped out due to the design of the project, embedded mitigation detailed in the ES (Ref. 1.1), or the distance between the Project Site and the Natura 2000 sites making the pathway or effect unfeasible:

- Noise – As stated in Chapter 7: Noise and Vibration of the ES, the loudest noise during construction of the Project will be 92 dB at source and operation of the Project 55 dB at the Project Site Boundary. At a distance of over 6 km (for the nearest Natura 2000 site) this will reduce to well below existing ambient levels and will be inaudible. There are no Likely Significant Effect (LSE) on Natura 2000 sites within 10 km associated with noise;
- Vibration – As stated in Chapter 7: Noise and Vibration of the ES, in the absence of specific information on likely construction activities and plant, a qualitative assessment based upon professional judgement has been undertaken. Given the significant distance to residential receptors, this qualitative judgement made is that no significant vibration (medium or high magnitude impacts) is expected to result at residential NSRs from construction and therefore further assessment is scoped out. Given that the nearest Natura 2000 site is over 6 km from the nearest residential receptor it can be concluded that there will be no LSEs on Natura 2000 sites within 10 km during all stages of the Project associated with vibration;
- Construction dust and vehicle movements – Fine particulate in the size range of PM_{10} generated by construction activities and vehicle emissions can travel up to 1 km from a construction site if not adequately controlled, with larger dust particles travelling much shorter distances. The nearest Natura 2000 site is over 6 km away from the Project Site and, as such, there will be no LSEs on any Natura 2000 sites within 10km associated with dust;
- Direct habitat loss or fragmentation – There will be no construction or requirement to remove any habitat within any Natura 2000 site, as such there will be no LSEs on Natura 2000 sites within 10 km associated with direct habitat loss or fragmentation;
- Direct disturbance to species – There will be no construction or requirement to remove any habitat within any Natura 2000 site, as such there will be no LSEs on a Natura 2000 site within 10 km associated with direct disturbance to species;
- Alteration of management – The Project will not cause the alteration of site management actions at any Natura 2000 site within 10 km, as such there will be no LSEs on Natura 2000 sites associated with alteration of management;
- Increase in lighting – The nearest Natura 2000 site is over 6 km from the Project Site and as such light spill will not measurably increase onto Natura 2000 sites within 10 km. There will be no LSEs on Natura 2000 sites within 10 km associated with lighting from the Project. ; and
- Spread of invasive species –There will be no construction within, or requirement to access, any Natura 2000 site. The spread of invasive species into Natura 2000 sites will not be caused by the Project. There will be no LSEs on Natura 2000 sites associated with spread of invasive species.

1.3.2 The potential pathways by which the Project could impact the qualifying features of each Natura 2000 sites are as follows:

- Potential changes in water quality from construction of the Project, resulting in effects on habitats in Carmarthen Bay and Estuaries SAC and Burry Inlet SPA and Ramsar; and,
- Potential changes in air quality from operation of the Project, resulting in effects on habitats in Crymlyn Bog SAC and Ramsar, Carmarthen Bay and Estuaries SAC and Bury Inlet SPA and Ramsar.

1.3.3 Crymlyn Bog SAC and Ramsar site is not hydrologically connected to the Project Site. As such effects associated with water quality on Crymlyn Bog SAC and Ramsar site have been scoped out of any further assessment.

b) Potential Impacts on Water Quality

1.3.4 There is the potential for the Project to result in changes to water quality that could subsequently affect the habitats within the Natura 2000 sites identified above. There is a hydrological connection between the Project Site and Carmarthen Bay and Estuaries SAC and Burry Inlet SPA and Ramsar via the Afon Llan. Leaving the Project Site the Afon Llan flows for approximately 12 km before reaching the Afon Lliw and flowing into the Natura 2000 sites.

1.3.5 It envisaged that temporary toilets with appropriate foul waste facility will be in place during construction and maintenance operation and all foul waste generated during this period will be taken off-site for disposal at appropriate facilities by specialist contractors. Accordingly, no impact on water receptors is likely.

1.3.6 During operation the Project will either be unmanned or have a maximum of two toilets on site with approximately three shifts of five workers in a 24 hour period. A manned site will contribute nitrogen to Carmarthen Bay and Estuaries SAC and Burry Inlet SPA and Ramsar.

1.3.7 Connection to a public sewer is not deemed feasible. The drainage strategy has considered the use of either septic tanks within the site or a package sewage treatment plants for foul effluent. However, package treatment plants are the preferred option, subject to detailed design following completion of ground investigations. The choice of one or other of these disposal methods is not considered to have a material effect on the impact assessment. Due to the small quantity of foul water generated during operations, it is anticipated that treated water can be discharged via infiltration (soakaway) on site. In line with standard design practice, the foul water drainage system will be positioned to minimise the risk of inundation by floodwaters. Where there is an inadequate unsaturated zone beneath the site, the option of discharging to local watercourses will be adopted. Any discharges will be subject to the Environmental Permitting Regulations and will need to meet quality criteria set by NRW.

1.3.8 Chapter 9 (Water Quality and Flood Risk) of the ES (Ref. 1.1) identifies the sensitivity of the surface water and/or groundwater receptors (i.e. the tributary to

the east of the Afon Llan and/or Carmarthen Carboniferous Coal Measures groundwater body beneath the Project Site) likely to receive foul effluent from the Project Site as Medium. Taking into account the quantity of treated foul waste/wastewater likely to be generated from the packaged sewage treatment plant and dilution properties of these receiving receptors, the magnitude of pollution impacts from discharges is considered to be Negligible. Hence, the significance of effect is considered to be Negligible. There is considered to be no LSE associated with wastewater discharges resulting from the operation of the Project on Carmarthen Bay and Estuaries SAC and Burry Inlet SPA and Ramsar.

1.3.9 The embedded measures included in the construction and operation as a matter of course cover drainage and following best practice and guidelines, controlling pollution, storage of potential pollutants, and precautionary measures to limit the likelihood and effects of pollution incidents and/or runoff. These are deployed as standard to protect any surface watercourse. Similarly, the Project Site drainage will include filter drains / swales or oil interceptors as necessary to remove pollutants and all necessary treatment will take place within the Project Site before it is discharged to the existing watercourses. They directly assist in avoiding effects on local watercourses (not Natura 2000 sites) and assist in strengthening the conclusion reached already that there will be no LSEs on any Natura 2000 sites within 10 km associated with water pollution.

1.3.10 Potential effects during decommissioning are likely to be the same as for construction and will be controlled similarly. There are considered to be no LSEs associated with water quality resulting from the decommissioning phase of the Project.

c) Potential Impacts on Air Quality

1.3.11 Transport related emissions are most relevant to sites within 200 m of a major road. The Design Manual for Roads and Bridges (DMRB) (Ref. 1.3) identifies 200 m as the distance beyond which the contribution of traffic emissions to local pollutant concentrations is considered to be negligible. There are no roads within 200 m of any Natura 2000 site that are forecast to receive anything other than a nominal short term change in vehicle flows as a result of the construction and operation of the Project. There are considered to be no LSEs associated with traffic emissions related air quality as a result of the construction or operation phases of the Project.

1.3.12 Potential effects of traffic related emissions during decommissioning are likely to be the same as for construction. There are considered to be no LSEs associated with traffic emission related air quality resulting from the decommissioning phase of the Project.

1.3.13 There is the potential for the Project to result in changes to air quality that could subsequently affect the habitats within the Natura 2000 sites identified above. The air quality assessment, Chapter 6 of the Project ES (Ref. 1.1), sets out predicted changes in concentrations of emissions associated with the construction, operational and decommissioning phases of the development.

1.3.14 The analysis is summarised in the matrices in Appendix B.

1.3.15 There are two measures of particular relevance in this assessment. The first is the concentration of oxides of nitrogen (known as NOx) in the atmosphere. The main importance is as a source of nitrogen, which is then deposited on adjacent habitats either directly (known as dry deposition, including directly onto the plants themselves) or washed out in rainfall (known as wet deposition). The deposited nitrogen can then have a range of effects, primarily growth stimulation or inhibition[1], but also biochemical and physiological effects such as changes to chlorophyll content. NOx may also have some effects which are un-related to its role in total nitrogen intake (such as the acidity of the gas potentially affecting lipid biosynthesis) but the evidence for these effects is limited and they do not appear to occur until high annual concentrations of NOx are reached. The guideline atmospheric concentration of NOx advocated by Government for the protection of vegetation is 30 micrograms per cubic metre (μgm^{-3}), known as the Critical Level (Ref. 1.4). This is driven by the role of NOx in nitrogen deposition and in particular in growth stimulation and inhibition. If the total NOx concentration in a given area is below the critical level, it is unlikely that nitrogen deposition will be an issue, unless there are other sources of nitrogen (e.g. ammonia). If it is above the critical level then local nitrogen deposition from NOx could be an issue and should be investigated.

1.3.16 The second important metric is a direct determination of the rate of the resulting nitrogen deposition. Calculating nitrogen deposition rates has the advantage of being habitat specific and, for many habitats, of being directly relatable to measurable effects on the ground through scrutiny of published dose-response relationships. In contrast, the NOx critical level is entirely generic and cannot be related to dose-response relationships. Unlike NOx, the nitrogen deposition rate below which current evidence suggests that effects should not arise is different for each habitat. The rate (known as the Critical Load) is provided on the UK Air Pollution Information System website (www.apis.ac.uk) and is expressed as a quantity (kilograms) of nitrogen over a given area (hectare) per year ($kgNha^{-1}yr^{-1}$). More recently, there has also been research compiled[2] which investigates nitrogen dose-response relationships in a range of habitats.

1.3.17 For completeness, rates of acid deposition were also calculated. Acid deposition derives from both sulphur and nitrogen. It is expressed in terms of kiloequivalents (keq) per hectare per year. The thresholds against which acid deposition is assessed are referred to as the Critical Load Function. The principle is similar to that for a nitrogen deposition Critical Load.

[1] The addition of nitrogen is a form of fertilization, which can have a negative effect on habitats over time by encouraging more competitive plant species that can force out the less competitive species that are more characteristic of such habitats.

[2] Compiled and analysed in Caporn, S., Field, C., Payne, R., Dise, N., Britton, A., Emmett, B., Jones, L., Phoenix, G., S Power, S., Sheppard, L. & Stevens, C. 2016. Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Reports, Number 210.

1.3.18 The LSEs are assessed in relation to aerial pollutant concentrations (NOx only) and the resultant change in acid and nitrogen deposition at Natura 2000 sites within 10km of the proposed stack.

1.3.19 Table 1-6 presents the process contribution (PCs) from the proposed Project (worst case) and the resultant acid and nitrogen deposition rates in comparison to the relevant critical loads for each of the Natura 2000 sites identified within 10km of the Project Site. The worst case has been assumed to be the maximum number of hours that the plant can operate and a stack height of 35 m. The Power Generation Plant is a peaking site and will therefore only operate during periods of high power demand. It is therefore anticipated that the site will normally operate for 1,500 hours per year, but may operate for up to a maximum of 2,250 hours per year, as secured by a DCO Requirement in the draft DCO (Document Reference 3.1). The maximum number of hours that the plant can operate will be set out in the site's Environmental Permit and this operating period cannot be exceeded. A minimum stack height of 35 m has been proposed by APL for the proposed Project and a maximum height of 45 m. Air quality modelling informed the minimum and maximum stack height as presented in ES Appendix 6.1. The assessment of impacts at ecological receptors has, therefore, used a stack height of 35 m as this represents the worst-case in terms of dispersion.

1.3.20 For Natura 2000 sites where habitats are not the designated feature for the site (for example, an SPA with a designated feature of Oystercatcher), the effects of air quality have been assessed for the habitat on which the species or assemblage is reliant (for example, saltmarsh).

1.3.21 In April 2017 a High Court judgment[3] (colloquially known as the Ashdown Forest judgment) partially quashed the Lewes District and South Downs National Park Joint Core Strategy in England. This was on the basis that the HRA supporting the Joint Core Strategy only considered its own contribution in determining whether there would be a likely significant air quality effect on Ashdown Forest SPA. The judge ruled that the HRA had thus explicitly failed to undertake any form of assessment 'in combination' and that this was in contravention of the Conservation of Habitats and Species Regulations 2010 (now repealed and replaced by the 2017 Regulations). Previously, air quality impact assessments enabled likely significant effects to be immediately dismissed without further consideration if the contribution of the project in question fell below 1% of the critical level (for NOx) or critical load (for nitrogen deposition). In that context no assessment 'in combination' was required. However, in light of the above High Court judgment, this HRA does not rely on the use of that 1% threshold to dismiss the need to consider 'in combination' effects.

1.3.22 The information in Table 1-6 and 1-7 is based on the air quality modelling provided by the Applicant with a stack height of 35m (the worst case as noted above). The results of the modelling are set out in Appendix A, Table 1-9, Table 1-10 and Table

[3] Wealden District Council v Secretary of State for Communities and Local Government and others, 2017 [EWHC] 351 http://www.bailii.org/ew/cases/EWHC/Admin/2017/351.html [accessed 26/10/2017]

1-11 in which the worst case has been provided for each relevant Nature 2000 site using the receptor most sensitive to acid and nitrogen for each site.

1.3.23 In the tables below, nitrogen and acid deposition are rounded up to two decimal places to avoid false precision[4]. As such, the lowest deposition rates are reported as '< 0.01 kgN/ha/yr' and represent negligible deposition.

[4] Convention dictates that the number of significant figures used in the presentation of data should be limited to what is warranted by the precision of those data.

Table 1-6: Potential Effects of Air Quality – NOx Daily and Annual Process Contributions and Predicted Environmental Concentrations, and Process Contributions and Predicted Environmental Concentrations as a % of the Air Quality Standard

Name	Distance from stack (km)	Most sensitive receptor / most sensitive habitat on which a receptor is reliant	NOx Daily (µg/m3)		NOx Annual (µg/m3)		NOx Daily (µg/m3)		NOx Annual (µg/m3)	
			PC	PC as % AQS	PC	PC as % AQS	PEC	PEC as % AQS	PEC	PEC as % AQS
Carmarthen Bay and Estuaries SAC	7.2	Estuaries	3.70	5%	0.01	0.02%	27.5	37%	11.98	40%
Crymlyn Bog SAC/Ramsar	6.8	Transition mires and quaking bogs	3.62	5%	0.00	0.01%	35.4	47%	15.90	53%
Burry Inlet SPA and Ramsar	8.9	Saltmarshes	3.35	4%	0.01	0.02%	24.5	33%	10.79	36%

Table 1-7: Potential Effects of Air Quality – Nitrogen and Nitrogen Acid

Name	Distance from stack (km)	Most sensitive receptor / most sensitive habitat on which a receptor is reliant	Nitrogen						
			Empirical Critical Load Nitrogen (kg N/ha/yr)	Process Contribution (35m stack) (kg N/ha/yr)	Background (kg N/ha/yr)	Process Contribution as a percentage of the Min CL	Process Contribution as a percentage of the Max CL	PEC as % Min CL	PEC as % Max CL
Carmarthen Bay and Estuaries SAC	7.2	Estuaries	20-30	<0.01	15.1	<0.1%	<0.1%	76%	50%
Crymlyn Bog SAC/Ramsar	6.8	Transition mires and quaking bogs	5-10	<0.01	11.5	<0.1%	<0.1%	230%	115%
Burry Inlet SPA and Ramsar	8.9	Saltmarshes	20-30	<0.01	15.1	<0.1%	<0.1%	76%	50%
Name	**Distance from stack (km)**	**Most sensitive receptor / most sensitive habitat on which a receptor is reliant**	**Nitrogen Acid**						
			Critical Load Nitrogen acid (keq H^+/ha/yr – HNO_3)	**Process Contribution (35m stack) (keq H+/ha/yr – HNO_3)**	**Background (keq H+/ha/yr – HNO_3)**	**Process Contribution as a percentage of CLF**		**PEC as % CLF**	
Carmarthen Bay and Estuaries SAC	7.2	Estuaries	Not sensitive	<0.01	1.33	N/A		N/A	
Crymlyn Bog SAC/Ramsar	6.8	Transition mires and quaking bogs	0.70	<0.01	1.06	<0.1%		153%	
Burry Inlet SPA and Ramsar	8.9	Saltmarshes	2.02	<0.01	1.33	<0.1%		66%	

1.4 Summary of Likely Significant Effects Screening

a) Water Quality

1.4.1 Due to the standard-practice use of mobile welfare facilities during construction and operational maintenance, there will be no inputs of treated wastewater and runoff and/or pollution during construction and operational maintenance.

1.4.2 During operation discharges from the package treatment plant will be controlled via an Environmental Permit. There will be very low levels of discharges due to the low numbers of people on Site during operation. The discharges will disperse over a long distance before entering Carmarthen Bay and Estuaries SAC and Burry Inlet SPA and Ramsar.

1.4.3 There will be no LSEs on any Natura 2000 sites within 10 km associated with water quality.

b) Air Quality

1.4.4 Only NOx has been modelled as an emitted pollutant; no other relevant pollutants are expected (such as sulphur dioxide). Impacts due to emissions of sulphur dioxide and, by inference deposition of sulphur, have been scoped out of the assessment since natural gas is an inherently low sulphur fuel. However, background levels of sulphur deposition are considered in the assessment of acidification.

1.4.5 For all receptors, the annual (long-term) average and 24hr (short-term) average PEC (Predicted Environmental Concentration i.e. the total concentration including the Project) for NOx is forecast to be well below the critical level of 30 micrograms/cubic metre (for long-term NOx) and 75 micrograms/cubic metre (for short-term NOx). Since the critical level will not be breached there are no grounds to conclude a likely significant effect based on atmospheric concentrations alone.

i. Nitrogen Disposition

1.4.6 Considering the forecast change in nitrogen deposition rates due to the Project, the PC is extremely small being less than 0.01kgN/ha/yr in all instances. This is so small that it effectively represents no forecast change in nitrogen deposition, compared to the baseline.

1.4.7 For Carmarthen Bay and Estuaries SAC and Burry Inlet SPA and Ramsar site, where the current background levels for nitrogen are within the critical loads for the most sensitive receptor or most sensitive habitat on which a receptor is reliant at each of the sites, these increases are concluded not to have a LSE on either site.

1.4.8 For Crymlyn Bog SAC and Ramsar the background level is already in exceedance of the critical load for nitrogen for the most sensitive receptor or most sensitive habitat on which a receptor is reliant at the site. However, the increase arising from

the Project is deemed to be so small that it can be concluded the increase will not have a LSE on the site.

1.4.9 In published data on nitrogen dose-response relationships (Ref. 1.5) it has been shown that no habitats studied to date are responsive to such small incremental changes in nitrogen deposition. For example, Table 21 of Caporn et al 2016 (Ref. 1.5) list all investigated habitats including heathland, bogs, sand dunes and acid grassland. Even the most sensitive habitat presented in the table (sand dunes) required a dose of at least 0.1 kgN/ha/yr (an order of magnitude greater than the PC of the Project) to effect a change in species richness (defined as a reduction of at least 1 species), even at a very low background deposition rate of 5 kg/ha/yr. Most habitats studied required a considerably greater dose at low background rates. Habitats that were studied that are pertinent to this Project included bog (raised and blanket). Bog is the most sensitive out of all the receptors for the Natura 2000 sites with a critical load of 5 – 10 kgN/ha/yr.

1.4.10 The studies also indicate that the effect of adding a given amount of nitrogen is not simple, linear and additive as is often assumed but depends heavily on the existing nitrogen deposition. As such the response of vegetation to nitrogen deposition is far more subtle that the 'black and white' critical load concept suggests. In bog, for example, at background deposition rates of 15 – 20kgN/ha/yr an increase of 3.3kgN/ha/yr would be required to reduce species richness by one species. Note that this does not mean any species would be 'lost' from the affected area, just that one species would occur at a reduced frequency. The study illustrates the fairly subtle effect of nitrogen deposition at moderately high background rates.

1.4.11 Although woodland and fen are not included in the report in terms of deriving dose-response relationships the report indicates that the same broad pattern of response can be applied to fen and woodland habitats (at least at woodland edges which will be more exposed to pollutants).

1.4.12 As such, the extremely small PC of than 0.01kgN/ha/yr would have no perceptible effect on any of the habitats within any of the Natura 2000 sites.

ii. Nitrogen Acid Deposition

1.4.13 None of the receptors for Carmarthen Bay and Estuaries SAC are sensitive to nitrogen acid deposition.

1.4.14 For Crymlyn Bog SAC and Ramsar the PC is less than 0.01keqH+/ha/yr and so low as to be effectively zero. Although the background level is above the critical load for the most sensitive receptor, any increase less than 0.01keqH+/ha/yr will not cause a measurable exceedance of the critical load for nitrogen acid at the site.

1.4.15 For Burry Inlet SPA and Ramsar the PC is less than 0.01keqH+/ha/yr and so low as to be effectively zero. Furthermore, the background level is below the critical load for the most sensitive receptor, and as such any increase less than 0.01keqH+/ha/yr will not cause an exceedance of the critical load for nitrogen acid at the site.

1.5 In-Combination Effects

1.5.1 The Conservation of Habitats and Species Regulations 2017 state that when considering whether a specific plan or project is likely to have a significant effect on a Natura 2000 Site, consideration should be given to the effect of the proposal alone and in-combination with other plans and projects. Part of the HRA process is to identify the plans, programmes and projects that could have in-combination effects. The PINS Advice Note Ten: Habitat Regulations Assessment relevant to Nationally Significant Infrastructure Projects (January 2016) states that in assessing in-combination effects the following projects should be considered:

- Projects that are under construction;
- Permitted application(s) not yet implemented;
- Submitted application(s) not yet determined;
- All refusals subject to appeal procedures not yet determined;
- Projects on the National Infrastructure's programme of projects[5]; and
- Projects identified in the Swansea Unitary Development Plan and emerging development plans (Swansea Deposit Local Development Plan) with appropriate weight being given as they move closer to adoption, recognising that much information on relevant proposals will be limited and the degree of uncertainty which may be present.

1.5.2 The projects which have been researched are shown in Table 1-8 below. Table 1-12 in Appendix C provides the results of a screening exercise for each of the developments to demonstrate that there are no Likely Significant Effects from the Project in-combination with other projects. The Table 1-12 briefly summarises the level of data or information available in relation to each project, which in all cases is limited. On the basis of the information available, using professional judgment and adopting the precautionary principle, it is considered that the screening exercise is robust.

Table 1-8: Projects Considered In-Combination

# / Planning Application		Name	Description
Under Construction			
1	2006/0773 (varied by 2009/1520 and 2011/1143) and consecutive temporary planning permissions 2007/2513, 2009/0062, 2009/1585, 2011/1311 and 2014/0913 (varied by 2016/1270)	Felindre Business Park	Strategic business park for B1 and B2 uses to accommodate emerging industries, high tech manufacturing, high level services, ancillary uses, associated car parking, landscaping and access roads (outline). The site has been laid out and is effectively a serviced site, however no buildings have been constructed. Park and ride schemes also operate on match days to the Liberty football stadium; and for car parking for the Driver and Vehicle Licensing Agency (DVLA) site in Longview Road, Morriston.

[5] https://infrastructure.planninginspectorate.gov.uk/projects/

# / Planning Application		Name	Description
2	2013/0135	Abergelli Solar Farm	Installation of ground mounted array of solar panels, inverter substations and 2.4 m high fencing on land at Abergelli Farm. This development will be located adjacent to the Gas Connection.
3	2013/0865	Cefn Betingau Phase 1, Morriston	Construction of 9MW solar park consisting of installation of up to 135,000 pv panels and 9 inverter/transformer cabins and a single control building
4	2014/0739	Gelliwern Isaf Solar Park	6MWe solar park at Gelliwern Isaf Farm - installation of a solar PV array, construction of a storage room, invertor cabin, a substation, switchgear building and fencing
5	2014/1022	Brynwhilach Solar Park	Construction of 12.69MWe solar park consisting of installation of up to 47,000 pv panels and 8 inverter/transformer stations, 2 substations, storage container, new access tracks, security fencing/cctv and associated equipment and infrastructure work.
6	2007/1250 (varied by 2017/0325/S73)	Former J R Steelworks, Bryntywod (Griffiths Waste Management)	Retention of use of land as timber recycling centre including processing of wood, wooden materials, associated plant and machinery and previously tipped inert material together with on-site storage of wood chip material, construction of building for the dry storage of recycled wood waste and the creation of a 1m high clay bund around southern, western and northern boundaries of the site without complying with conditions 2, 3, 5, 9, 10, 11, 14 and 16 of planning permission 2007/1250 granted 11th December.
7	2012/1221	Mynydd y Gwair Wind Farm	Installation of 16 wind turbines (maximum height to blade tip of 127 m with a hub height of 80 metres), with a maximum generating capacity of 48MWe, associated tracks and ancillary infrastructure.
8	2014/0977	Parc Ceirw, Cwmrhydyceirw Quarry, Swansea	Proposed 250 to 300 residential properties, within a site of approximately 14 ha. The site was formerly an old quarry.
Permitted but not implemented			
9	2013/0795	Tyle Coch Mawr Wind Farm	Installation of four 5 kW wind turbines 20.7 m to tip and associated infrastructure.
10	2013/1835	Felindre Business Park	Construction of park and ride/share car park (approximately 480 spaces) with new vehicular access, security office, toilet, engineering and associated works,

# / Planning Application		Name	Description
			including lighting, fencing, drainage attenuation and landscaping.
11	2015/1529 (appeal ref 4369653)	Llettyr Morfil Farm	Construction of a 4.9 MW solar park (approx. 8.8 ha) including photovoltaic panels, four inverter stations, centre station, new access tracks, security fencing, security cameras and associated equipment and infrastructure works. Allowed on appeal in June 2016
12	2015/0308	Plot 8 Felindre Strategic Business Park	Two/three storey private hospital development with associated landscaping, site roads and car parking
13	2016/1522	Griffiths Waste Management Site, Bryntywod Llangyfelach Swansea SA5 7LP	Demolition of existing waste management facility buildings and construction of replacement buildings and associated infrastructure
14	2008/0912	Former Walters Yard Pontlliw Swansea	Construction of 67 dwellings with associated access, roads, parking, open space and demolition of existing buildings. Approved with S106 in March 2016.
Submitted but not determined			
15	2011/0345	Land at Llewellyn Road, Penllergaer	Construction of up to 200 residential units with associated access (outline).
16	2012/0721	Royal Fern Golf Resort	Application to vary Condition 8 of Outline Planning Permission 2008/0154 to extend the period for the submission of the reserved matters for a further three years in relation to the proposed development of 18 hole championship and 9 hole par 3 golf courses, golf club house including health facilities, sauna, swimming pool, gymnasium, golf school and academy, 80 golfing lodges, approximately 135 housing plots, green keepers flat, associated infrastructure, car parking and landscaping (outline).
17	2017/1822/OUT	Land West Of Llangyfelach Road Tirdeunaw	Outline planning application (with all matters reserved apart from strategic access junctions) for residential led mixed use development, to be developed in phases, including up to 1950 dwellings, link road, local centre provision of a primary school, community facilities, Public Open Space including facilities for children, and areas of landscaping (including sustainable drainage systems), outdoor sports provision including playing pitches, associated services, infrastructure and engineering

# / Planning Application		Name	Description
			works including new vehicular access, improvements to the existing highway network, new roads, footpaths / cycleways, and ancillary works.
18	2016/1478	Land North Of Garden Village Swansea	Hybrid planning application (with all matters reserved apart from strategic access) for residential-led mixed use development, to be developed in phases, including approximately 750 residential units; provision of 1 no. Primary school; circa 280m2 - 370m2 flexible A1-A3 / D1 floorspace; open space including parks; natural and semi natural green space; amenity green spaces; facilities for children and young people; outdoor sports provision including playing pitches; associated services, infrastructure and engineering works including new vehicular accesses, improvement works to the existing highway network, new roads, footpaths/cycleways; landscaping works (including sustainable drainage systems), ecological mitigation works and ancillary works. Submitted in July 2016 and currently pending determination. (The application would be referable to Welsh Ministers if the Council are minded to approve).
19	2017/0986/FUL	Former Civic Centre Penllergaer Swansea SA4 9GH	Construction of 80 no. residential units with associated access and landscaping
Identified / Allocated (and not referenced above)			
20	UDP Policy EC1(3)	Swansea Vale Strategic Mixed-Use Site	25 ha allocated employment land
21	UDP Policy EC1(10)	Land at Bryntywod, Felindre (Local Employment Site)	15.8 ha allocated employment land
22	UDP Policy EC1(12)	Penllergaer Business Park (Local Employment Site)	8.2 ha allocated employment land
23	UDP Policy HC13	West of Morriston Hospital	Hospital related activities
24	LDP Policy SD G	Northwest of M4 J46, Llangyfelach	Comprehensive mixed use development of up to 850 homes during the Plan period, incorporating a mix of low-medium and high density residential, a new district centre with commercial units, primary school, a mix of public realm, open space and play

# / Planning Application		Name	Description
			provision, new community buildings, and a strategic business park
25	LDP Policy SD A	South of Glanffrwd Road, Pontarddulais	Comprehensive, residential led, development of up to 720 homes, incorporating a primary school, leisure and recreation facilities, public open space and appropriate community facilities, employment and commercial uses
26	LDP Policy SD C	South of A4240, Penllergaer	Comprehensive, residential led, mixed use development of up to 750 homes during the Plan period (and up to 1,000 homes beyond the Plan period), incorporating primary school, leisure and recreation facilities, public realm, public open space and appropriate community and commercial uses
27	LDP Policy SD E	North of Clasemont Road, Morriston	Comprehensive, residential led, mixed use development of up to 675 homes during the Plan period, incorporating primary school, leisure and recreation facilities, public realm, public open space and appropriate community and commercial uses
28	LDP Policy SI 4	Morriston Hospital	Land adjacent to Morrison Hospital is safeguarded solely for the future development and expansion of the Hospital. Development at this location is restricted to healthcare related uses in association with the beneficial use of Morriston Hospital. Proposals must be delivered alongside appropriate new and enhanced highway infrastructure that will significantly improve the existing substandard road access leading to the site. A new access road is proposed as part of this proposal (Strategic Transport Strategy Table 9.2) to resolve road capacity issues from the roundabout immediately north of M4 J46.
29	LDP Policies RP7 and RP8 , paragraph 2.14.28 (Preferred Locations)	Former Tip Site, Felindre	Preferred areas for new waste management facilities include the former Tip site at Felindre. The site at Felindre is identified specifically for the potential to accommodate a Combined Heat and Power (CHP) Facility which could provide heat or power for adjacent proposed developments.
30	LDP Policy H1.11	Land at Ramsey Road, Clydach	60 dwellings
31	LDP Policy H1.21	Land east of	90 dwellings

# / Planning Application		Name	Description
		Pontarddulais Road, Gorseinon	
32	LDP Policy H1.26	Land at Carmel Road and Bryntirion Road, Pontlliw	100 dwellings
33	LDP Policy H1.30	Land north of Llewellyn Road, Penllergaer	50 dwellings
34	LDP Policy H1.31	Land at Bolgoed Road, Pontarddulais	50 dwellings

a) Water Quality

1.5.3 There are no inputs during construction in relation to water quality from the Project that can act in combination with other projects and this will be the same for decommissioning.

1.5.4 The inputs from Project wastewater discharges during operation are likely to be so small as to be well within the natural daily fluctuations of the nutrient levels within the Carmarthen Bay and Estuaries SAC and Burry Inlet SPA and Ramsar and therefore immeasurable in-combination with other projects. There is considered to be no LSE as a result of wastewater discharges from the Project acting in-combination with wastewater discharges from other projects.

b) Air Quality

1.5.5 Transport related emissions are most relevant to sites within 200 m of a major road. The Design Manual for Roads and Bridges (DMRB) (Ref. 1.3) identifies 200 m as the distance beyond which the contribution of traffic emissions to local pollutant concentrations is considered to be negligible. There are no roads within 200 m of any Natura 2000 site that are forecast to receive anything other than a nominal short term change in vehicle flows as a result of this Project.

1.5.6 There will be extremely low traffic flows expected as part of the construction and operation of the Project, and the operational traffic flows from the Project will not make a significant contribution to any in-combination effects and will be within the average daily variations of traffic flows.

1.5.7 A number of projects are likely to contribute to local pollutant concentrations through traffic emissions – using M4 Junction 46 and the B4489. However, there are no Natura 2000 sites located within 200 m of these locations.

1.5.8 There is no opportunity for a LSE as a result of traffic emissions from the Project acting in-combination with traffic emissions from other projects.

1.5.9 Projects with point source emissions have been considered for the in-combination assessment where deposition of those emissions may be geographically coincident with this Project. Two projects have been identified to be included in the in-combination assessment:

- 2015/1716. Land at Abergelli Farm near Felindre Swansea SA5 7NN. Emergency standby electricity generation facility comprising: modern modular diesel generator units (up to 14 in total), transformers, diesel storage tanks, boundary treatment including acoustic screening, access improvements and associated works.
- LDP Policies RP7 and RP8, paragraph 2.14.28 (Preferred Locations). Former Tip Site, Felindre. Preferred areas for new waste management facilities include the former Tip site at Felindre. The site at Felindre is identified specifically for the potential to accommodate a Combined Heat and Power (CHP) Facility which could provide heat or power for adjacent proposed developments.

1.5.10 The planning application for the Land at Abergelli emergency standby electricity generation facility was refused on 16 October 2015. The applicant has stated that there is no intention of resubmitting the application or to appeal of the decision notice (and the time for submitting an appeal has now expired).

1.5.11 The Former Tip Site, Felindre Combined Heat and Power (CHP) Facility is a preferred location in the Deposit Local Development Plan policy, and is therefore at an early stage in the (potential) consenting process. As such no planning application or background information is available to undertake in-combination air quality modelling or assessment. The Deposit Local Development Plan is currently at Examination and as a result only limited weight can be attached to the allocation.

1.6 Conclusion

a) Introduction

1.6.1 This section summarises the potential effects of the proposed Project and considers whether the requirement to proceed to Stage Two of the HRA process (Appropriate Assessment) is triggered in relation to the proposed Project.

1.6.2 An Appropriate Assessment is necessary when the screening exercise concludes that a project, alone or in combination with other plans or projects, is likely to give rise to significant effects on a Natura 2000 site. When required, an Appropriate Assessment considers the impact of the project on the integrity of the Natura 2000 site having regard to the site's conservation objectives.

b) Potential Effects

1.6.3 There are no LSEs on Natura 2000 sites within 10 km of the proposed development associated with water quality – as a result of wastewater discharges, pollution or runoff - or air quality – nitrogen and nitrogen acid deposition as a result of NOx emissions - from the proposed Project alone or in-combination with projects.

1.6.4 No other impacts arising from the construction, operation or decommissioning of the Project have the potential to have an impact on any Natura 2000 sites.

1.6.5 Therefore the Appropriate Assessment – Stage Two of the HRA – process is not required.

1.6.6 The Applicant remains committed to consultation with NRW and will continue to discuss the air quality aspects of the proposed development in the period before Examination of the DCO application. It is the Applicant's intention to agree a Statement of Common Ground with NRW covering the matters included in this report and it is proposed that further meetings and dialogue will take place as necessary between the Applicant and NRW with that objective.

References

Ref. 1.1 AECOM. (2018). Abergelli Power Project Environmental Statement.

Ref. 1.2 WSP (2017). Abergelli Power Station Outline Lighting Strategy. November 2017.

Ref. 1.3 DMRB (2007). Design Manual for Roads and Bridges, Volume 11 Environmental Assessment, Section 3 Environmental Assessment Techniques, Part 1 HA 207/07, Air Quality (May 2007).

Ref. 1.4 APIS (2017). Critical Loads and Critical Levels - a guide to the data provided in APIS, Section 3.3 Critical Levels, Table 1: Critical levels of air pollutants Available at http://www.apis.ac.uk/overview/issues/overview_Cloadslevels.htm#_Toc279788054 [Access on 29/11/2017].

Ref. 1.5 Caporn, S., Field, C., Payne, R., Dise, N., Britton, A., Emmett, B., Jones, L., Phoenix, G., S Power, S., Sheppard, L. & Stevens, C. (2016). Assessing the effects of small increments of atmospheric nitrogen deposition (above the critical load) on semi-natural habitats of conservation importance. Natural England Commissioned Reports, Number 210.

Figure 1.1 Location of Project Site and Natura 2000 Sites

Appendix A Air Quality Modelling: Table 1-9, Table 1-10 and Table 1-11

Table 1-9: Process Contributions of NOx

Natura 2000 Site	Most Sensitive Habitat Type	NOx Daily (µg/m3)		NOx Annual (µg/m3)		NOx Daily (µg/m3)		NOx Annual (µg/m3)	
		PC	PC as % AQS 75 µg/m3	PC	PC as % AQS 30 µg/m3	PC	PC as % AQS 75 µg/m3	PC	PC as % AQS 30 µg/m3
Carmarthen Bay and Estuaries SAC	Estuaries	3.70	5%	0.01	0.02%	27.5	37%	11.98	40%
Crymlyn Bog SAC & Ramsar	Transition mires and quaking bogs	3.62	5%	0.00	0.01%	35.4	47%	15.90	53%
Burry Inlet SPA & Ramsar	Saltmarsh	3.35	4%	0.01	0.02%	24.5	33%	10.79	36%

Table 1-10: Process Contributions, Critical Loads and Predicted Environmental Concentration of Nitrogen

Natura 2000 Site	Most Sensitive Habitat Type	Process Contribution	CL (kg N/ha/yr)	CL (kg N/ha/yr)	PC as % Min CL	PC as % Max CL	N Dep (kg N/ha/yr)	PEC	PEC as % Min CL	PEC as % Max CL
			Min CL	Max CL			Background	Max		
Carmarthen Bay and Estuaries SAC	Estuaries	0.001	20	30	0.00%	0.00%	15.1	15.1	76%	50%
Crymlyn Bog SAC & Ramsar	Transition mires and quaking bogs	0.001	5	10	0.01%	0.01%	11.5	11.5	230%	115%
Burry Inlet SPA & Ramsar	Saltmarsh	0.001	20	30	0.00%	0.00%	15.1	15.1	76%	50%

Table 1-11: Process Contributions, Critical Loads and Predicted Environmental Concentration of Nitrogen Acid

Natura 2000 Site	Most Sensitive Habitat Type	Process Contribution	Critical Load (keq/ha/yr) Max			Process Contribution	Background	PEC	
			CLminN	CLmaxN	CLmaxS	% CLF		PEC	% CLF
Carmarthen Bay and Estuaries SAC	Estuaries	0.0001	N/A	N/A	N/A	0.00%	1.33	1.41	0%
Crymlyn Bog SAC & Ramsar	Transition mires and quaking bogs	0.00004	0.32	0.70	0.37	0.01%	1.06	1.06	153%
Burry Inlet SPA & Ramsar	Saltmarsh	0.0001	0.44	2.02	1.58	0.00%	1.33	1.33	66%

Appendix B HRA Screening Matrices for the Abergelli Power Project

Planning Inspectorate

Advice Note 10

Habitats Regulations Assessment

HRA Screening Matrices for the Abergelli Power Project

Potential Effects

Potential effects upon the European site(s)* which are considered within the submitted HRA report (AECOM, 2017) are provided in the table below.

Effects considered within the screening matrices

Designation	Effects described in submission information	Presented in screening matrices as
Carmarthen Bay SAC Burry Inlet SPA and Ramsar	• Increase in nutrient inputs	• Water quality
Crymlyn Bog SAC and Ramsar Carmarthen Bay SAC Burry Inlet SPA and Ramsar	• Increase in concentration of NOx • Increase in deposition of Nitrogen • Increase in deposition of Acid	• Air quality

* As defined in Advice Note 10.

STAGE 1: SCREENING MATRICES

The European sites included within the screening assessment are:

Crymlyn Bog SAC

Crymlyn Bog Ramsar

Carmarthen Bay SAC

Burry Inlet SPA

Burry Inlet Ramsar

Evidence for, or against, likely significant effects on the European site(s) and its qualifying feature(s) is detailed within the footnotes to the screening matrices below.

Matrix Key:

✓ = Likely significant effect cannot be excluded
✖ = Likely significant effect can be excluded

C = construction
O = operation
D = decommissioning

HRA Screening Matrix 1 Carmarthen Bay and Estuaries SAC

Name of European site and designation: Carmarthen Bay and Estuaries SAC												
EU Code: UK0020020												
Distance to NSIP: 7km												
European site features	Likely effects of NSIP											
Effect	Water quality			Water quality In combination effects			Air quality			Air quality In combination effects		
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Estuaries	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Sandbanks which are slightly covered by sea water all the time;	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Mudflats and sandflats not covered by seawater at low tide;	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Large shallow inlets and bays	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Salicornia and other annuals colonizing mud and sand; and,	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j

Atlantic salt meadows (Glauco-Puccinellietalia maritimae).	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Twaite shad Alosa fallax	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Sea lamprey Petromyzon marinus	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
River lamprey Lampetra fluviatilis	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Allis shad Alosa alosa	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Otter Lutra lutra	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j

Evidence supporting conclusions:

a. Section 1.3.9 of the No Significant Effects Report states that the embedded mitigation for construction (to be secured under the Construction Environmental Management Plan (CEMP)) will include measures to control pollution, storage of potential pollutants, and precautionary measures will help to limit the likelihood and effects of pollution incidents and/or runoff in line with best practice and guidelines. The drainage strategy for the Project Site will include filter drains / swales or oil interceptors as necessary to remove pollutants and all necessary treatment will take place within the Project Site before it is discharged to the existing watercourses. There are deemed to be no Likely Significant Effects on the features as a result of pollution and/or runoff generated during construction.
b. Section 1.3.5 of the No Significant Effects Report states that during construction and operational maintenance temporary toilets with appropriate foul waste facility will be in place and all foul waste generated during this period will be taken off-site for disposal at appropriate facilities. No impact on water receptors is expected and there are deemed to be no Likely Significant Effects on the features as a result of wastewater generated during construction and operational maintenance.
c. There is a hydrological connection between the Project Site and Carmarthen Bay and Estuaries SAC via the Afon Llan. Leaving the Project Site, the Afon Llan flows for approximately 12 km before reaching the Afon Lliw and flowing into the Natura 2000 site.
   Section 1.3.7 of the No Significant Effects Report state that the drainage strategy has considered the use of either septic

tanks within the site or a package sewage treatment plants for foul effluent. However, package treatment plants are the preferred option, subject to detailed design following completion of ground investigations.
Due to the small quantity of foul water generated during operation (Section 1.3.6), it is anticipated that treated water can be discharged via infiltration (soakaway) on site. The foul water drainage system will be positioned to minimise the risk of inundation by floodwaters.
Where there is an inadequate unsaturated zone beneath the site, the option of discharging to local watercourses will be adopted. As stated in Section 1.4.2, any discharges will be subject to the Environmental Permitting Regulations and will meet quality criteria set by NRW.
As stated in Section 1.3.8, Chapter 9 (Water Quality and Flood Risk) of the Environmental Statement (Abergelli Power Project Environmental Statement, AECOM, 2018) states that given the quantity of treated wastewater likely to be generated from the packaged sewage treatment plant and dilution properties of the receiving receptors, the magnitude of pollution impacts from discharges is considered to be Negligible.
There are deemed to be no Likely Significant Effects associated with wastewater discharges resulting from the operation of the Project on the designated site features (section 1.3.8).

d. Sections 1.1.20 – 1.1.22 detail the decommissioning phase of the Project. Section 1.3.10 states that potential effects on water quality during decommissioning are likely to be the same as for construction and will be controlled similarly. There are considered to be no Likely Significant Effects associated with water quality resulting from the decommissioning phase of the Project.
e. Table 1-8 provides a list of projects that have the potential to act in combination with the Project. Table 1-12 provides the results of a screening exercise for each of the projects to demonstrate that the effects from the Project acting in-combination with the projects are not significant. Table 1-12 briefly summarises the level of data or information available in relation to each project, which in all cases is limited.
f. Section 1.5.3 of the No Significant Effects Report states that there are no inputs during construction in relation to water quality from the Project that can act in combination with other projects, this is likely the same for decommissioning.
g. Section 1.5.4 of the No Significant Effects Report states that the inputs from Project wastewater discharges during operation are likely to be so small as to be within the natural daily fluctuations of the nutrient levels within the Carmarthen Bay and Estuaries SAC and therefore immeasurable in-combination with other projects. There is considered to be no Likely Significant Effect as a result of wastewater discharges from the Project acting in-combination with wastewater discharges from other projects.
h. Section 1.3.11 states that there are no roads within 200 m of any Natura 2000 site that are forecast to receive anything other than a nominal short term change in vehicle flows as a result of the construction and operation of the Project. Transport related emissions are most relevant to sites within 200 m of a major road. The Design Manual for Roads and

Bridges (DMRB) identifies 200 m as the distance beyond which the contribution of traffic emissions to local pollutant concentrations is considered to be negligible. There are considered to be no Likely Significant Effects associated with traffic emissions related air quality as a result of the construction or operation phases of the Project.

i. Section 1.3.12 states that potential effects of traffic related emissions during decommissioning are likely to be the same as for construction. There are considered to be no Likely Significant Effects associated with traffic emission related air quality resulting from the decommissioning phase of the Project.

j. Sections 1.5.6 – 1.5.8 state there will be extremely low traffic flows expected as part of the construction and operation of the Project, and the operational traffic flows from the Project will not make a significant contribution to any in-combination effects and will be within the average daily variations of traffic flows. A number of projects are likely to contribute to local pollutant concentrations through traffic emissions - using M4 Junction 46 and the B4489. However, there are no Natura 2000 sites located within 200 m of these locations. This is likely to be the same for decommissioning. Section 1.5.8 states there is no opportunity for a Likely Significant Effect as a result of traffic emissions from the Project acting in-combination with traffic emissions from other projects.

k. Table 1-6, Table 1-7, Table 1-9, Table 1-10 and Table 1-11 of the No Significant Effects Report show the potential effects of NOx, nitrogen and nitrogen acidity on the most sensitive receptor of Carmarthen Bay and Estuaries SAC. Section 1.4.6 – 1.4.7 states that the process contributions are extremely small for nitrogen (<0.01kgN/ha/yr) and the current background levels for nitrogen are within the critical loads for the most sensitive receptor at the site the increase is concluded not to have a LSE on the site. Section 1.4.13 states that none of the receptors for the site are sensitive to nitrogen acidity deposition.

l. Table 1-8 and Sections 1.5.9 – 1.5.11 provide a summary of the projects and plans provided by the local authority for an in-combination assessment. One project that was refused planning has point source emissions; the promoter has stated they do not intend to resubmit the application or to appeal against the refusal. There is a point source emitter within the Local Development Plan; however there is no information on the plan since it is a preferred location only and as such it is not possible to obtain air quality data. It is concluded that there are no point source emitters that would contribute to an in-combination effect with the emissions from the proposed Project.

HRA Screening Matrix 2 Crymlyn Bog SAC

Name of European site and designation: Crymlyn Bog SAC												
EU Code: UK0012885												
Distance to NSIP: 6.7km												
European site features	Likely effects of NSIP											
Effect	Water quality			Water quality In combination effects			Air quality			Air quality In combination effects		
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Transition mires and quaking bogs	✖a	✖a	✖a	✖a	✖a	✖a	✖b	✖b,e	✖c	✖d	✖d,f	✖d
Calcareous fens with Cladium mariscus and species of the Caricion davallianae	✖a	✖a	✖a	✖a	✖a	✖a	✖b	✖b,e	✖c	✖d	✖d,f	✖d
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	✖a	✖a	✖a	✖a	✖a	✖a	✖b	✖b,e	✖c	✖d	✖d,f	✖d

Evidence supporting conclusions:

a. As stated in Section 1.3.3, Crymlyn Bog SAC is not hydrologically connected to the Project Site. As such effects associated with water quality have been scoped out of any further assessment.
b. Section 1.3.11 states that there are no roads within 200 m of any Natura 2000 site that are forecast to receive anything other than a nominal short term change in vehicle flows as a result of the construction and operation of the Project. Transport related emissions are most relevant to sites within 200 m of a major road. The Design Manual for Roads and Bridges (DMRB) identifies 200 m as the distance beyond which the contribution of traffic emissions to local pollutant concentrations is considered to be negligible. There are considered to be no Likely Significant Effects associated with traffic emissions related air quality as a result of the construction or operation phases of the Project.
c. As stated in Section 1.3.12, potential effects of traffic related emissions during decommissioning are likely to be the same as for construction. There are considered to be no Likely Significant Effects associated with traffic emission related air quality resulting from the decommissioning phase of the Project.
d. Sections 1.5.6 – 1.5.8 state there will be extremely low traffic flows expected as part of the construction and operation of the Project, and the operational traffic flows from the Project will not make a significant contribution to any in-combination effects and will be within the average daily variations of traffic flows. A number of projects are likely to contribute to local pollutant concentrations through traffic emissions - using M4 Junction 46 and the B4489. However, there are no Natura 2000 sites located within 200 m of these locations. This is likely to be the same for decommissioning. Section 1.5.8 states there is no opportunity for a Likely Significant Effect as a result of traffic emissions from the Project acting in-combination with traffic emissions from other projects.
e. Table 1-6, Table 1-7, Table 1-9, Table 1-10 and Table 1-11 of the No Significant Effects report show the potential effects of NOx, nitrogen and nitrogen acidity generated during operation of the Project on the most sensitive receptor of Crymlyn Bog SAC. Sections 1.4.6 and 1.4.8-1.4.12 states that the process contributions are extremely small for nitrogen (<0.01kgN/ha/yr) and the current background levels for nitrogen are in exceedance of the critical loads for the most sensitive receptor at the site the increase is concluded not to have a LSE on the site due to the extremely low level of increase. Section 1.4.14 states that the process contribution for nitrogen acidity deposition is effectively zero.
f. Table 1-8 and Sections 1.5.9 – 1.5.11 provide a summary of the projects and plans provided by the local authority for an in-combination assessment. One project that was refused planning has point source emissions; the promoter has stated they do not intend to resubmit the application or to appeal against the refusal. There is a point source emitter within the Local Development Plan; however there is no information on the plan since it is a preferred location only and as such it is not possible to obtain air quality data. It is concluded that there are no point source emitters that would contribute to an in-combination effect with the emissions from the proposed Project.

HRA Screening Matrix 3 Crymlyn Bog Ramsar

Name of European site and designation: Crymlyn Bog Ramsar												
Ramsar designation has no EU Code, [SAC] EU Code for this site is: UK0020020												
Distance to NSIP: 6.7km												
European site features	Likely effects of NSIP											
Effect	Water quality			Water quality In combination effects			Air quality			Air quality In combination effects		
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Ramsar criterion 1 Valley floodplain topogenous mire and fen habitats	✖a	✖a	✖a	✖a	✖a	✖a	✖b	✖b,e	✖c	✖d	✖d,f	✖d
Ramsar criterion 2 Slender cotton-grass (Eriophorum gracile)and invertebrate assemblage, including fen raft spider (Dolomedes plantarius)	✖a	✖a	✖a	✖a	✖a	✖a	✖b	✖b,e	✖c	✖d	✖d,f	✖d
Ramsar criterion 2 Peatland	✖a	✖a	✖a	✖a	✖a	✖a	✖b	✖b,e	✖c	✖d	✖d,f	✖d
Ramsar criterion 3	✖a	✖a	✖a	✖a	✖a	✖a	✖b	✖b,e	✖c	✖d	✖d,f	✖d

Plant species assemblage												

Evidence supporting conclusions:

a. As stated in Section 1.3.3, Crymlyn Bog Ramsar is not hydrologically connected to the Project Site. As such effects associated with water quality have been scoped out of any further assessment.
b. Section 1.3.11 states that there are no roads within 200 m of any Natura 2000 site that are forecast to receive anything other than a nominal short term change in vehicle flows as a result of the construction and operation of the Project. Transport related emissions are most relevant to sites within 200 m of a major road. The Design Manual for Roads and Bridges (DMRB) identifies 200 m as the distance beyond which the contribution of traffic emissions to local pollutant concentrations is considered to be negligible. There are considered to be no Likely Significant Effects associated with traffic emissions related air quality as a result of the construction or operation phases of the Project.
c. As stated in Section 1.3.12, potential effects of traffic related emissions during decommissioning are likely to be the same as for construction. There are considered to be no Likely Significant Effects associated with traffic emission related air quality resulting from the decommissioning phase of the Project.
d. Sections 1.5.6 – 1.5.8 state there will be extremely low traffic flows expected as part of the construction and operation of the Project, and the operational traffic flows from the Project will not make a significant contribution to any in-combination effects and will be within the average daily variations of traffic flows. A number of projects are likely to contribute to local pollutant concentrations through traffic emissions - using M4 Junction 46 and the B4489. However, there are no Natura 2000 sites located within 200 m of these locations. This is likely to be the same for decommissioning. Section 1.5.8 states there is no opportunity for a Likely Significant Effect as a result of traffic emissions from the Project acting in-combination with traffic emissions from other projects.
e. Table 1-6, Table 1-7, Table 1-9, Table 1-10 and Table 1-11 of the No Significant Effects report show the potential effects of NOx, nitrogen and nitrogen acidity generated during operation of the Project on the most sensitive receptor or most sensitive habitat on which a receptor is reliant of Crymlyn Bog Ramsar. Section 1.4.6 and 1.4.8-1.4.12 states that the process contributions are extremely small for nitrogen (<0.01kgN/ha/yr) and the current background levels for nitrogen are in exceedance of the critical loads for the most sensitive receptor at the site the increase is concluded not to have a LSE on the site due to the extremely low level of increase. Section 1.4.14 states that the process contribution for nitrogen acidity deposition is effectively zero.
f. Table 1-8 and Sections 1.5.9 – 1.5.11 provide a summary of the projects and plans provided by the local authority for an in-combination assessment. One project that was refused planning has point source emissions; the promoter has stated they

do not intend to resubmit the application or to appeal against the refusal. There is a point source emitter within the Local Development Plan; however there is no information on the plan since it is a preferred location only and as such it is not possible to obtain air quality data. It is concluded that there are no point source emitters that would contribute to an in-combination effect with the emissions from the proposed Project.

HRA Screening Matrix 4 Burry Inlet SPA

Name of European site and designation: Burry Inlet SPA												
EU Code: UK9015011												
Distance to NSIP: 8.6km												
European site features	Likely effects of NSIP											
Effect	Water quality			Water quality In combination effects			Air quality			Air quality In combination effects		
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Oystercatcher (Haematopus ostralegus)	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Pintail (Anas acuta)	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Overwinter waterfowl assemblage of international importance.	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j

Evidence supporting conclusions:

a. Section 1.3.9 of the No Significant Effects Report states that the embedded mitigation for construction (to be secured under the Construction Environmental Management Plan (CEMP)) will include measures to control pollution, storage of potential pollutants, and precautionary measures will help to limit the likelihood and effects of pollution incidents and/or runoff in line

with best practice and guidelines. The drainage strategy for the Project Site will include filter drains / swales or oil interceptors as necessary to remove pollutants and all necessary treatment will take place within the Project Site before it is discharged to the existing watercourses. There are deemed to be no Likely Significant Effects on the features as a result of pollution and/or runoff generated during construction.

b. Section 1.3.5 of the No Significant Effects Report states that during construction and operational maintenance temporary toilets with appropriate foul waste facility will be in place and all foul waste generated during this period will be taken off-site for disposal at appropriate facilities. No impact on water receptors is expected and there are deemed to be no Likely Significant Effects on the features as a result of wastewater generated during construction and operational maintenance.
c. There is a hydrological connection between the Project Site and Burry Inlet SPA via the Afon Llan. Leaving the Project Site, the Afon Llan flows for approximately 12 km before reaching the Afon Lliw and flowing into the Natura 2000 site.
   Section 1.3.7 of the No Significant Effects Report state that the drainage strategy has considered the use of either septic tanks within the site or a package sewage treatment plants for foul effluent. However, package treatment plants are the preferred option, subject to detailed design following completion of ground investigations.
   Due to the small quantity of foul water generated during operation, it is anticipated that treated water can be discharged via infiltration (soakaway) on site. The foul water drainage system will be positioned to minimise the risk of inundation by floodwaters.
   Where there is an inadequate unsaturated zone beneath the site, the option of discharging to local watercourses will be adopted. As stated in Section 1.4.2, any discharges will be subject to the Environmental Permitting Regulations and will meet quality criteria set by NRW.
   As stated in Section 1.3.8, Chapter 9 (Water Quality and Flood Risk) of the Environmental Statement (Abergelli Power Project Environmental Statement, AECOM, 2018) states that given the quantity of treated wastewater likely to be generated from the packaged sewage treatment plant and dilution properties of the receiving receptors, the magnitude of pollution impacts from discharges is considered to be Negligible.
   There are deemed to be no Likely Significant Effects associated with wastewater discharges resulting from the operation of the Project on the designated site features (section 1.3.8).
d. Sections 1.1.20 – 1.1.22 detail the decommissioning phase of the Project. Section 1.3.10 states that potential effects on water quality during decommissioning are likely to be the same as for construction and will be controlled similarly. There are considered to be no Likely Significant Effects associated with water quality resulting from the decommissioning phase of the Project.
e. Table 1-8 provides a list of projects that have the potential to act in combination with the Project. Table 1-12 provides the results of a screening exercise for each of the projects to demonstrate that the effects from the Project acting in-

combination with the projects are not significant. Table 1-12 briefly summarises the level of data or information available in relation to each project, which in all cases is limited.

f. Section 1.5.3 of the No Significant Effects Report states that there are no inputs during construction in relation to water quality from the Project that can act in combination with other projects, this is likely the same for decommissioning.
g. Section 1.5.4 of the No Significant Effects Report states that the inputs from Project wastewater discharges during operation are likely to be so small as to be within the natural daily fluctuations of the nutrient levels within Burry Inlet SPA and therefore immeasurable in-combination with other projects. There is considered to be no Likely Significant Effect as a result of wastewater discharges from the Project acting in-combination with wastewater discharges from other projects.
h. Section 1.3.11 states that there are no roads within 200 m of any Natura 2000 site that are forecast to receive anything other than a nominal short term change in vehicle flows as a result of the construction and operation of the Project. Transport related emissions are most relevant to sites within 200 m of a major road. The Design Manual for Roads and Bridges (DMRB) identifies 200 m as the distance beyond which the contribution of traffic emissions to local pollutant concentrations is considered to be negligible. There are considered to be no Likely Significant Effects associated with traffic emissions related air quality as a result of the construction or operation phases of the Project.
i. Section 1.3.12 states that potential effects of traffic related emissions during decommissioning are likely to be the same as for construction. There are considered to be no Likely Significant Effects associated with traffic emission related air quality resulting from the decommissioning phase of the Project.
j. Sections 1.5.6 – 1.5.8 state there will be extremely low traffic flows expected as part of the construction and operation of the Project, and the operational traffic flows from the Project will not make a significant contribution to any in-combination effects and will be within the average daily variations of traffic flows. A number of projects are likely to contribute to local pollutant concentrations through traffic emissions - using M4 Junction 46 and the B4489. However, there are no Natura 2000 sites located within 200 m of these locations. This is likely to be the same for decommissioning. Section 1.5.8 states there is no opportunity for a Likely Significant Effect as a result of traffic emissions from the Project acting in-combination with traffic emissions from other projects.
k. Table 1-6, Table 1-7, Table 1-9, Table 1-10 and Table 1-11 of the No Significant Effects report show the potential effects of NOx, nitrogen and nitrogen acidity on the most sensitive habitat on which a receptor of Burry Inlet SPA is reliant. Section 1.4.6 – 1.4.7 states that the process contributions are extremely small for nitrogen (<0.01kgN/ha/yr) and the current background levels for nitrogen are within the critical loads for the most sensitive receptor at the site the increase is concluded not to have a LSE on the site. Section 1.4.15 states that the process contribution for nitrogen acidity deposition is so low (<0.01keqH+/ha/yr) that it will not cause an exceedance of the critical load for nitrogen acidity at the site.
l. Table 1-8 and Sections 1.5.9 – 1.5.11 provide a summary of the projects and plans provided by the local authority for an in-combination assessment. One project that was refused planning has point source emissions; the promoter has stated they

do not intend to resubmit the application or to appeal the refusal. There is a point source emitter within the Local Development Plan; however there is no information on the plan since it is a preferred location only and as such it is not possible to obtain air quality data. It is concluded that there are no point source emitters that would contribute to an in-combination effect with the emissions from the proposed Project.

HRA Screening Matrix 5 Burry Inlet Ramsar

Name of European site and designation: Burry Inlet Ramsar												
Ramsar designation has no EU Code, [SPA] EU Code for this site is: UK9015011												
Distance to NSIP: 8.6km												
European site features	Likely effects of NSIP											
Effect	Water quality			Water quality In combination effects			Air quality			Air quality In combination effects		
Stage of Development	C	O	D	C	O	D	C	O	D	C	O	D
Ramsar criterion 5 Overwinter wildfowl assemblage of international importance	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Ramsar criterion 6 Common redshank (Tringa totanus totanus),	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Ramsar criterion 6 Pintail	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Ramsar criterion 6 Oystercatcher	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j
Ramsar criterion 6 Red knot (Calidris	✖a,b	✖b,c	✖d	✖e,f	✖e,g	✖e,f	✖h	✖h,j	✖i	✖e,j	✖e,j,k,l	✖e,j

canutus islandica)												

Evidence supporting conclusions:

a. Section 1.3.9 of the No Significant Effects Report states that the embedded mitigation for construction (to be secured under the Construction Environmental Management Plan (CEMP)) will include measures to control pollution, storage of potential pollutants, and precautionary measures will help to limit the likelihood and effects of pollution incidents and/or runoff in line with best practice and guidelines. The drainage strategy for the Project Site will include filter drains / swales or oil interceptors as necessary to remove pollutants and all necessary treatment will take place within the Project Site before it is discharged to the existing watercourses. There are deemed to be no Likely Significant Effects on the features as a result of pollution and/or runoff generated during construction.
b. Section 1.3.5 of the No Significant Effects Report states that during construction and operational maintenance temporary toilets with appropriate foul waste facility will be in place and all foul waste generated during this period will be taken off-site for disposal at appropriate facilities. No impact on water receptors is expected and there are deemed to be no Likely Significant Effects on the features as a result of wastewater generated during construction and operational maintenance.
c. There is a hydrological connection between the Project Site and Burry Inlet Ramsar via the Afon Llan. Leaving the Project Site, the Afon Llan flows for approximately 12 km before reaching the Afon Lliw and flowing into the Natura 2000 site. Section 1.3.7 of the No Significant Effects Report state that the drainage strategy has considered the use of either septic tanks within the site or a package sewage treatment plants for foul effluent. However, package treatment plants are the preferred option, subject to detailed design following completion of ground investigations.
   Due to the small quantity of foul water generated during operation, it is anticipated that treated water can be discharged via infiltration (soakaway) on site. The foul water drainage system will be positioned to minimise the risk of inundation by floodwaters.
   Where there is an inadequate unsaturated zone beneath the site, the option of discharging to local watercourses will be adopted. As stated in Section 1.4.2, any discharges will be subject to the Environmental Permitting Regulations and will meet quality criteria set by NRW.
   As stated in Section 1.3.8, Chapter 9 (Water Quality and Flood Risk) of the Environmental Statement (Abergelli Power Project Environmental Statement, AECOM, 2018) states that given the quantity of treated wastewater likely to be generated from the packaged sewage treatment plant and dilution properties of the receiving receptors, the magnitude of pollution impacts from discharges is considered to be Negligible.
   There are deemed to be no Likely Significant Effects associated with wastewater discharges resulting from the operation of the Project on the designated site features (section 1.3.8).

d. Sections 1.1.20 – 1.1.22 detail the decommissioning phase of the Project. Section 1.3.10 states that potential effects on water quality during decommissioning are likely to be the same as for construction and will be controlled similarly. There are considered to be no Likely Significant Effects associated with water quality resulting from the decommissioning phase of the Project.
e. Table 1-8 provides a list of projects that have the potential to act in combination with the Project. Table 1-12 provides the results of a screening exercise for each of the projects to demonstrate that the effects from the Project acting in-combination with the projects are not significant. Table 1-12 briefly summarises the level of data or information available in relation to each project, which in all cases is limited.
f. Section 1.5.3 of the No Significant Effects Report states that there are no inputs during construction in relation to water quality from the Project that can act in combination with other projects, this is likely the same for decommissioning.
g. Section 1.5.4 of the No Significant Effects Report states that the inputs from Project wastewater discharges during operation are likely to be so small as to be within the natural daily fluctuations of the nutrient levels within Burry Inlet Ramsar and therefore immeasurable in-combination with other projects. There is considered to be no Likely Significant Effect as a result of wastewater discharges from the Project acting in-combination with wastewater discharges from other projects.
h. Section 1.3.11 states that there are no roads within 200 m of any Natura 2000 site that are forecast to receive anything other than a nominal short term change in vehicle flows as a result of the construction and operation of the Project. Transport related emissions are most relevant to sites within 200 m of a major road. The Design Manual for Roads and Bridges (DMRB) identifies 200 m as the distance beyond which the contribution of traffic emissions to local pollutant concentrations is considered to be negligible. There are considered to be no Likely Significant Effects associated with traffic emissions related air quality as a result of the construction or operation phases of the Project.
i. Section 1.3.12 states that potential effects of traffic related emissions during decommissioning are likely to be the same as for construction. There are considered to be no Likely Significant Effects associated with traffic emission related air quality resulting from the decommissioning phase of the Project.
j. Sections 1.5.6 – 1.5.8 state there will be extremely low traffic flows expected as part of the construction and operation of the Project, and the operational traffic flows from the Project will not make a significant contribution to any in-combination effects and will be within the average daily variations of traffic flows. A number of projects are likely to contribute to local pollutant concentrations through traffic emissions - using M4 Junction 46 and the B4489. However, there are no Natura 2000 sites located within 200 m of these locations. This is likely to be the same for decommissioning. Section 1.5.8 states there is no opportunity for a Likely Significant Effect as a result of traffic emissions from the Project acting in-combination with traffic emissions from other projects.
k. Table 1-6, Table 1-7, Table 1-9, Table 1-10 and Table 1-11 of the No Significant Effects report show the potential effects of NOx, nitrogen and nitrogen acidity on the most sensitive habitat on which a receptor of Burry Inlet Ramsar is reliant. Section

1.4.6 – 1.4.7 states that the process contributions are extremely small for nitrogen (<0.01kgN/ha/yr) and the current background levels for nitrogen are within the critical loads for the most sensitive receptor at the site the increase is concluded not to have a LSE on the site. Section 1.4.15 states that the process contribution for nitrogen acidity deposition is so low (<0.01keqH+/ha/yr) that it will not cause an exceedance of the critical load for nitrogen acidity at the site.

l. Table 1-8 and Sections 1.5.9 – 1.5.11 provide a summary of the projects and plans provided by the local authority for an in-combination assessment. One project that was refused planning has point source emissions; the promoter has stated they do not intend to resubmit the application or to appeal against the refusal. There is a point source emitter within the Local Development Plan; however there is no information on the plan since it is a preferred location only and as such it is not possible to obtain air quality data. It is concluded that there are no point source emitters that would contribute to an in-combination effect with the emissions from the proposed Project.

Appendix C HRA Cumulative Assessment Screening Table 1-12

Projects considered for the in-combination assessment are presented in Table 1-8. The following table (Table 1-12) provides the results of a screening exercise for each of the projects to demonstrate that the effects from the Project acting in-combination with the projects are not significant. The Table summarises the level of data or information available in relation to each project, which in all cases is limited. On the basis of the information available, using professional judgment and adopting the precautionary principle, it is considered that the screening exercise is robust.

Table 1-12: Screening of Developments Considered in the Cumulative Assessment

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
Under Construction											
1	Felindre Business Park	Business park	The aim of the Park is to home high-tech manufacturers, and research and technology industries. Submission indicated that reserved matters for the building plots would be sought within 10 years of consent, i.e. by mid-2021 – there have been no further submissions yet. Landscaping of the 61 ha site has been completed to schedule. The site includes 4 km of foul and storm drains, to prevent transport of pollutants. Remediation of the former tinplate works occurred between 1998 and 1999.	There is limited information available on the City and County of Swansea (CCS) planning portal.	0.9	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access.	No	During construction there is likely to be an increase in air emissions due to increase in vehicle movements. During operation, there is likely to be an increase in air emissions from commercial and industrial sources and operational traffic.	Potential discharges during construction, which has been ongoing for over 5 years.	Business Park site is in close proximity to Project Site. Landscaping and main earthworks have already been completed; however no buildings have been constructed. The construction date of the building plots is unknown. The Park is located more than 5km from the boundary of any European designated site. At such distances localised effects (including operation emissions) associated with proximity of development are unlikely. Emissions (from plant) and discharge will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
2	Abergelli Solar Farm	Solar farm	Approximately 37,000 panels, spaced 7 m apart, will be fixed at a height of 3 m above ground. The development is not predicted to have any adverse effects on the surrounding habitats or landscape, and the site will retain its public access. The project is predicted to have a 3 to 4 month construction period. The site will be drained using a SuDS system.	There is limited information available on the CCS planning portal.	0.2	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access.	No	Construction has already occurred; therefore there will be no emissions through this period. During operation, it is unlikely that there will be air emissions due to the nature of the development.	Construction has already occurred; therefore there will be no further discharges in this respect. During operation, it is unlikely that there will be discharges due to the nature of the development.	The solar farm is already constructed therefore no LSE during construction, No LSE anticipated during operation due to the nature of development.	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
3	Cefn Betingau Phase 1, Morriston	Solar farm	Approximately 40,000 panels will be fixed at a height of 3.5 m above ground.	There is limited information available on the CCS planning portal.	0.7	Likely to use different M4 junction (Junction 45).	No	Construction has already occurred; therefore there will be no emissions through this period. During operation, it is unlikely that there will be air emissions due to the nature of the development.	Construction has already occurred; therefore there will be no discharges in this respect. During operation, it is unlikely that there will be discharges due to the nature of the development.	The solar farm is already constructed therefore no LSE during construction. No LSE anticipated from emissions during operation due to the nature of development. Any discharges during operation will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
4	Gelliwern Isaf Solar Park	Solar farm	Series of solar power units, with an approximate 5 MW output.	There is limited information available on the CCS planning portal.	2.0	Likely to use different M4 junction (Junction 47).	No	Construction has already occurred; therefore there will be no emissions through this period. During operation, it is unlikely that there will be air emissions due to the nature of the development.	Construction has already occurred; therefore there will be no discharges in this respect. During operation, it is unlikely that there will be discharges due to the nature of the development.	The solar farm is already constructed therefore no LSE during construction. No LSE anticipated from emissions during operation due to the nature of development. Any discharges during operation will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
5	Brynwhilach Solar Park	Solar farm	Series of solar power units, with an approximate 12.7 MW output. Construction of the first phase took place between December 2016 and March 2017. The second phase of the solar farm on the western half of the site is due to be built at a later date. Pre-commencement conditions discharged and non-material amendments approved in early 2017 – submitted documents indicate development will be complete by mid/late-2018.	There is limited information available on the CCS planning portal.	0.3	Likely to use the M4 Junction 46 and B4489. Likely to use the same construction access.	No	During construction of the second phase, there is likely to be an increase in air emissions due to traffic. This is predicted to be complete by mid/late 2018 therefore this will not overlap with the Project. During operation, it is unlikely that there will be air emissions due to the nature of the development.	During operation, it is unlikely that there will be any discharges due to the nature of the development.	The solar farm is already constructed therefore no LSE during construction. No LSE anticipated from emissions during operation due to the nature of development. Any discharges during operation will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
6	Former J R Steelworks, Bryntywod (Griffiths Waste Management)	Waste management facilities	Plant and materials recycling facility, located on a former steelworks site. Development originally completed in 2013 though recent approval sought minor amendments.	There is limited information available on the CCS planning portal.	1.6	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction	No	There may be an increase in vehicles and emissions during construction and operation.	There may be an increase in discharges during construction and operation.	The Former J R Steelworks is over 1.6 km from the Project Site therefore there are unlikely to be significant in-combination emissions from the Project Site. The minor amendments to the	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
						access				waste facility are not anticipated to be major works. Any emissions or discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	
7	Mynydd y Gwair Wind Farm	Wind farm	An onshore wind farm, consisting of 16 turbines, with an installed capacity of 33.6 MW. Construction is currently ongoing. Commenced in Feb 2017. Approved Construction Management Statement indicates 2 year construction phase.	There is limited information available on the CCS planning portal.	7.2	Likely to use different M4 junction (Junction 45), or the A483	No	There may be an increase in vehicles and emissions during construction.	There may be an increase in discharges during construction. Due to the nature of the project, there will also be no discharges to watercourses and limited traffic during operation.	The project is located over 7.2 km away from the Project Site, therefore localised effects from transport is unlikely to occur. Construction of the wind farm is also likely to be complete before the construction of the Project; therefore no cumulative effects are anticipated.	Scoped Out
8	Parc Ceirw, Cwmrhydyceirw Quarry, Swansea	Housing development	Proposed 250 to 300 residential properties, within a site of approximately 14 ha. The site was formerly an old quarry.	There is limited information available on the CCS planning portal.	1.7	Likely to use either different M4 junction (Junction 45), or M4 Junction 46 (southern exit)	No	During construction and operation, there is likely to be an increase in vehicles and emissions. .	There may be an increase in discharges during construction and operation.	Due to the distance of the Project Site from the Parc Ceirw development, and that the sites are separated by the M4 with different access routes, there will be no shared receptors or cumulative effects. Any emissions or discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
Permitted but not Implemented											
9	Tyle Coch Mawr Wind Farm	Wind farm	Installation of four 5 kW turbines. Permission expires on 07/11/18. No condition details submitted yet	There is limited information available on the CCS planning portal.	5.0	Likely to use either the M4 Junction 46, or the A483	No	There may be an increase in vehicles and emissions during construction. Due to the nature of the project, there is not anticipated to be any significant emissions during operation	There may be an increase in discharges during construction. Due to the nature of the project, there is not anticipated to be any significant discharges to watercourses during operation.	Due to the distance of the Project Site from the Tyle Coch Mawr development, and that the sites will use different access routes, there will be no shared receptors or cumulative effects. Any emissions or discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
10	Felindre Business Park	Business park	Construction of park and ride/share car park (approximately 480 spaces) with new vehicular access, security office, toilet, engineering and associated works, including lighting, fencing, drainage attenuation and landscaping. Permission expires on 02/07/19. No condition details submitted yet.	There is limited information available on the CCS planning portal.	0.9	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access	No	During construction, there is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	Increased traffic is likely to be contained to peak times of use which may differ from construction traffic from the Project. Any discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
11	Llettyr Morfil Farm	Solar Park	Series of solar power units, with an approximate 5 MW output. Most pre-commencement details approved in July 2017. Approved Construction Method Statement states 16-week construction period.	There is limited information available on the CCS planning portal.	0.2	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access	No	During construction, there is likely to be an increase in air emissions from construction traffic. During operation, it is unlikely that there will be air emissions due to the nature of the development.	There may be an increase in discharges during construction. Due to the nature of the project, there is not anticipated to be any significant discharges to watercourses during operation.	Increased traffic is likely to be contained to peak times of use which may differ from construction traffic from the Project and only for 16 weeks, compared to the Projects 22 month construction phase. Any discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
12	Plot 8 Felindre Strategic Business Park	Business park	Two/three storey private hospital development with associated landscaping, site roads and car parking. Permission expires on 15/05/20. Some pre-commencement details approved in July 2016; others outstanding.	There is limited information available on the CCS planning portal.	0.9	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access	No	There is likely to be an increase in air emissions from construction and operational traffic. Plot is relatively small (one plot of the Felindre Business Park) and associated traffic, air pollution, and discharges will be minimal.	There may be an increase in discharges during construction and operation.	Increased traffic is likely to be contained to peak times of use which may differ from construction traffic from the Project. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
13	Griffiths Waste Management Site, Bryntywod Llangyfelach Swansea SA5 7LP	Waste management facilities	Second part of the Former J R Steelworks' site. Demolition of existing waste management facility buildings and construction of replacement buildings and associated infrastructure. Permission expires on 21/09/21. Pre-commencement details approved in May 2017	There is limited information available on the CCS planning portal.	1.3	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	Increased traffic is likely to be contained to peak times of use which may differ from construction traffic from the Project. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
14	Former Walters Yard Pontlliw	Housing	Construction of 67 residential dwellings on a site of 2.2 ha.	There is limited information	2.8	Likely to use different M4	No	There is likely to be an increase in air emissions	There may be an increase in	This site and the Project will use different access routes; therefore	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
	Swansea	development	Development of associated access, roads, parking, open space, and demolition of existing buildings. Permission expires on 21/09/21. Pre-commencement details approved in May 2017	available on the CCS planning portal.		junction (Junction 47)		from construction and operational traffic.	discharges during construction and operation.	there will be no shared receptors or cumulative effects. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	
Submitted but not Determined											
15	Land at Llewellyn Road, Penllergaer	Housing development	Outline application for the construction of 200 residential dwellings	There is limited information available on the CCS planning portal.	3.4	Likely to use different M4 junction (Junction 47)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project sites will use different access routes; therefore there will be no shared receptors or cumulative effects.	Scoped Out
16	Royal Fern Golf Resort	Recreational development	Application of a high quality leisure and visitor facilities, within a 150 ha site.	There is limited information available on the CCS planning portal.	3.0	Likely to use the M4 Junction 46 (southern exit)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	The development is a significant distance away and separated by the M4. As such, any cumulative effects on air quality or effluent discharges during construction and operation are unlikely.	Scoped Out
17	Land West Of Llangyfelach Road Tirdeunaw	Housing development	Outline planning application for the construction of 1950 dwellings. These will be constructed in phases. Development of associated access, a primary school, roads, parking, open space, and demolition of existing buildings.	There is limited information available on the CCS planning portal.	2.9	Likely to use the M4 Junction 46 (southern exit)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	The development is a significant distance away and separated by the M4. As such, any cumulative effects on air quality or effluent discharges during construction and operation are unlikely. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW.	Scoped Out
18	Land North Of Garden Village Swansea	Housing development	Outline planning application for the construction of 750 dwellings. These will be constructed in phases. Development of associated access, a primary school, roads, parking, open space, and demolition of existing buildings.	There is limited information available on the CCS planning portal.	5.2	Likely to use different M4 junction (Junction 47)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes; therefore there will be no shared receptors or cumulative effects.	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
19	Former Civic Centre Penllergaer Swansea SA4 9GH	Housing development	Application or the construction of 80 residential dwellings.	There is limited information available on the CCS planning portal.	2.4	Likely to use different M4 junction (Junction 47)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	Both of these sites will use different access routes, therefore there will be no shared receptors or cumulative effects.	Scoped Out
Identified / Allocated (but not referenced above)											
20	Swansea Vale Strategic Mixed-Use Site	Business park	25 ha allocated employment land	There is limited information available on the CCS planning portal.	3.0	Likely to use different M4 junction (Junction 20)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	Both the Swansea Vale and the Project will use different access routes, therefore there will be no shared receptors or cumulative effects. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
21	Land at Bryntywod, Felindre (Local Employment Site)	Business park	15.8 ha allocated employment land	There is limited information available on the CCS planning portal.	0.6	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	Increased traffic is likely to be contained to peak times of use which may differ from construction traffic from the Project. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
22	Penllergaer Business Park (Local Employment Site)	Business park	8.2 ha allocated employment land	There is limited information available on the CCS planning portal.	2.0	Likely to use different M4 junction (Junction 48)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes; therefore there will be no shared receptors or cumulative effects. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
23	West of Morriston	Hospital	Space allocated for hospital	There is limited information	1.0	Likely to use different M4	No	There is likely to be an increase in air emissions	There may be an increase in	This site and the Project will use different access routes; therefore	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
	Hospital	development	expansion related activities	available on the CCS planning portal.		junction		from construction and operational traffic.	discharges during construction and operation.	there will be no shared receptors or cumulative effects. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	
24	Northwest of M4 J46, Llangyfelach	Housing development	Residential and mixed-use development of approximately 850 houses, plus associated development, including a primary school, leisure and recreational facilities, open space, and community facilities.	There is limited information available on the CCS planning portal.	1.0	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	Increased traffic is likely to be contained to peak times of use which may differ from construction traffic from the Project. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
25	South of Glanffrwd Road, Pontarddulais	Housing development	Residential and mixed-use development of approximately 720 houses, plus associated development, including a primary school, leisure and recreational facilities, open space, and community facilities. It is predicted that 486 residential dwellings will be constructed between 2020 to 2025.	There is limited information available on the CCS planning portal.	6.0	Likely to use different M4 junction (Junction 48)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes; therefore there will be no shared receptors or cumulative effects. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
26	South of A4240, Penllergaer	Housing development	Residential and mixed-use development of approximately 750,000 houses, plus associated development, including a primary school, leisure and recreational facilities, open space, and community facilities. It is predicted that 644 residential dwellings will be constructed between 2019 to 2025.	There is limited information available on the CCS planning portal.	3.5	Likely to use different M4 junction (Junction 47)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes; therefore there will be no shared receptors or cumulative effects. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
										reasonably foreseeable to assess at this stage.	
27	North of Clasemont Road, Morriston	Housing development	Residential and mixed-use development of approximately 675,000 houses, plus associated development, including a primary school, leisure and recreational facilities, open space, and community facilities. It is predicted that 490 residential dwellings will be constructed between 2020 to 2025.	There is limited information available on the CCS planning portal.	1.7	Likely to use the M4 Junction 46 (southern exit)	No	During construction, there is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	The development is a significant distance away, and is separated from the Site by the M4. As such, the cumulative air quality, effluent discharges, traffic impacts during construction and operation are unlikely. Both of these sites will use different access routes, therefore there will be no shared receptors or cumulative effects. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
28	Morriston Hospital	Hospital development	Space allocated for future hospital expansion related activities	There is limited information available on the CCS planning portal.	0.5	Likely to use different M4 junction (Junction 45)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes; therefore there will be no shared receptors or cumulative effects. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
29	Former Tip Site, Felindre	Waste management facilities	Preferred area for the new waste management facilities. The site is a former tip site. The site has also been identified as a potential location for a combined Heat and Power (CHP) Facilities.	There is limited information available on the CCS planning portal.	0.4	Likely to use the M4 Junction 46 and B4489 Likely to use the same construction access	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	Increased traffic is likely to be contained to peak times of use which may differ from construction traffic from the Project. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
										site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	
30	Land at Ramsey Road, Clydach	Housing development	Outline application for the construction of 60 residential dwellings Construction Start 2020/21 Construction Complete 2021/22	There is limited information available on the CCS planning portal.	3.3	Likely to use different M4 junction (Junction 45)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes, and are a significant distance from one another; therefore there will be no shared receptors or cumulative effects. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
31	Land east of Pontarddulais Road, Gorseinon	Housing development	Space allocated for residential dwellings. Construction Start 2023/24 Construction Complete 2025/26	There is limited information available on the CCS planning portal.	5.1	Likely to use different M4 junction (Junction 47)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes, and are a significant distance from one another; therefore there will be no shared receptors or cumulative effects. Emissions (from any plant) and discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. The construction phases of the housing development and the Project are unlikely to overlap therefore no cumulative effects are likely. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
32	Land at Carmel Road and Bryntirion Road, Pontlliw	Housing development	Outline application for the construction of 90 residential dwellings Construction Start 2019/20	There is limited information available on the CCS planning portal.	3.1	Likely to use different M4 junction (Junction 47)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes, and are a significant distance from one another; therefore there will be no shared receptors or cumulative	Scoped Out

Location	Development Name	Type of Development	Available Information	Documents / Reports available online?	Proximity to Site (km)	Likely to use same construction access route (M4 Junction 46, and B4489) Green = no cumulative effects anticipated	New roads within 200m of a European Site?	Emissions	Discharges	Likely Significant Effect?	
			Construction Complete 2022/23							effects. Emissions (from plant) and any discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	
33	Land north of Llewellyn Road, Penllergaer	Housing development	Space allocated for residential dwellings. Construction Start 2023/24 Construction Complete 2024/25	There is limited information available on the CCS planning portal.	3.7	Likely to use different M4 junction (Junction 47)	No	There is likely to be an increase in air emissions from construction and operational traffic.	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes, and are a significant distance from one another; therefore there will be no shared receptors or cumulative effects. Emissions (from plant) and any discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out
34	Land at Bolgoed Road, Pontarddulais	Housing development	Outline application for the construction of 100 residential dwellings Construction Start 2019/20 Construction Complete 2020/21	There is limited information available on the CCS planning portal.	4.8	Likely to use different M4 junction (Junction 48)	No	There is likely to be an increase in air emissions from construction and operational traffic. .	There may be an increase in discharges during construction and operation.	This site and the Project will use different access routes, and are a significant distance from one another; therefore there will be no shared receptors or cumulative effects. Emissions (from plant) and any discharges will be controlled via the appropriate Environmental Permit, regulated by NRW. This is also an allocated site with aspirational development opportunities which are not reasonably foreseeable to assess at this stage.	Scoped Out

Appendix 8

Peat Survey Report

Abergelli Power Project

Peat Survey Ground Investigation

Abergelli Power Limited

Project number: 60542910

September 2018

Quality information

Prepared by	Checked by	Verified by
Graeme Fearn Senior Engineering Geologist	Steven Harris Principal Engineering Geologist	Paul Gross Technical Director

Revision History

Revision	Revision date	Details	Authorized	Name	Position
01	28/08/2018				
02	17/09/2018	Client comments	NW	Natalie Williams	Principal Consultant

Prepared for:

Abergelli Power Limited

Prepared by:

Graeme Fearn
Senior Engineering Geologist
T: 01256 310 262
E: graeme.fearn@aecom.com

AECOM Infrastructure & Environment UK Limited
Midpoint, Alencon Link
Basingstoke
Hampshire RG21 7PP
United Kingdom

T: +44(0)1256 310200
aecom.com

Table of Contents

Figures

Tables

1. Introduction

1.1 Scope and Objective

This document is the Peat Survey Report for the proposed Abergelli Power Project (hereafter referred to as 'the Project') described below. This report has been prepared by AECOM on behalf of Abergelli Power Limited (APL).

The Project is a gas-fired 'peaking' plant which is designed to operate when there is a surge in demand for electricity associated with a particular stress event (e.g. where there is a sudden demand in power required by consumers or a sudden drop in power being generated by plants which are constantly operational such as a sudden outage).

The Project is situated on open agricultural land located approximately 2 km north of junction 46 of the M4 within the administrative boundary of the City and County of Swansea Council (CCS). Figure 1 shows the location of the Project approximately 1 km southeast of Felindre and 1.4 km north of Llangyfelach. The land upon which the Project will be developed, or which is required for construction of the Project, is referred to as the 'Project Site'. The Project Site covers an area of up to approximately 35 ha.

AECOM prepared and submitted an Environmental Statement (ES) in May 2018 (AECOM, 2018) as part of the Development Consent Order (DCO) Application for the Project.

This Peat Survey Report has been prepared for the Project in order to provide the Local Planning Authority with information on the presence of peat at the Project Site. If peat is encountered in layers greater than 500 mm thickness, as defined in the Peatland Code Peatland Code: Field Protocol document, Version 1.1 (International Union for Conservation of Nature (IUCN), March 2017) (Ref. 1), it is anticipated that a Peat Management Plan (PMP) would be required.

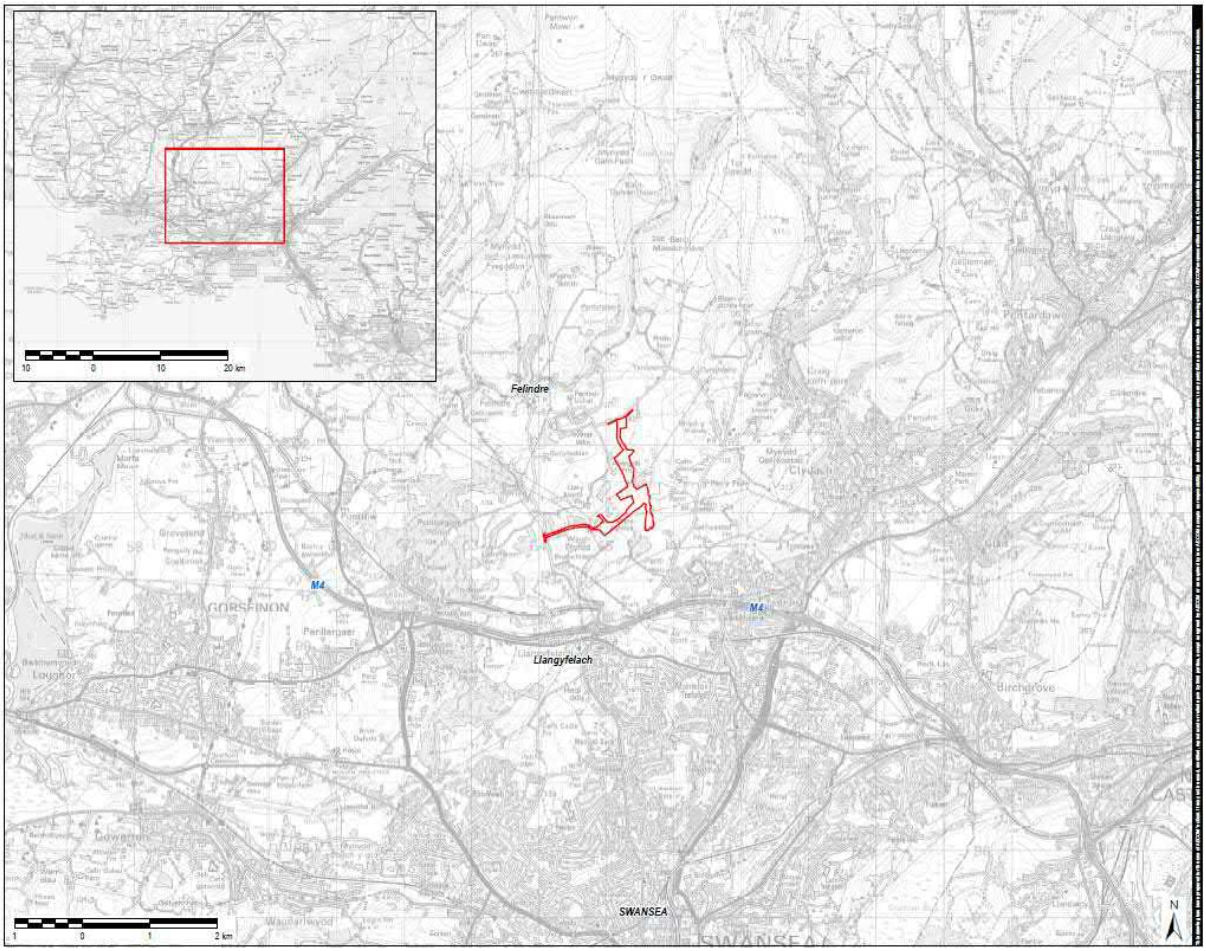


Figure 1: Project Site Location Plan

1.2 Project Description

The National Grid reference for the Project is 265535E 201344N. The Project comprises the following components, which are located in Figure 2 in Appendix A.

Table 1: Project Components

Project Component	Description
Power Generation Plant	An Open Cycle Gas Turbine (OCGT) peaking power generating station, fuelled by natural gas and capable of providing a rated electrical output of up to 299 Megawatts (MW). The *Power Generation Plant* comprises: • Generating Equipment including one Gas Turbine Generator with one exhaust gas flue stack and Balance of Plant (BOP) (together referred to as the '*Generating Equipment*') which are located within the '*Generating Equipment Site'* ; • An *Access Road* to the Project Site from the B4489 which lies to the west, formed by upgrading an existing access road between the B4489 junction and the Swansea North Substation (the *Substation*) and constructing a new section of access road from the Substation to the Generating Equipment Site; and • A temporary construction compound for the storage of

Project Component	Description
	materials, plant and equipment as well as containing site accommodation and welfare facilities, temporary car parking and temporary fencing (the *Laydown Area*). A small area within the Laydown Area will be retained permanently (the *Maintenance Compound*). • *Ecological Mitigation Area* – area for ecological enhancement within the Project Site Boundary; and • Permanent parking and drainage to include: a site foul, oily water and surface water drainage system.
Gas Connection	The Gas Connection will be in the form of a new above ground installation (AGI) and underground gas connection (the Gas Pipeline). This is to bring natural gas to the Generating Equipment from the *National Gas Transmission System*. The Gas Pipeline will follow an approximate north-south route corridor, between the National Gas Transmission System south of Rhyd-y-pandy Road and the Generating Equipment Site.
Electrical Connection	This is an underground electrical cable to export power from the Generating Equipment to the *National Grid Electricity Transmission System (NETS)*.

1.3 Project Site Description

The current land use for the Project Site is predominantly agricultural, with fields used for sheep and horse grazing bounded by a mixture of drainage ditches, fencing and hedgerows with substantial gaps in them. Ground levels vary from approximately 146 m above ordnance datum (AOD) at the highest point in the north-west corner at Rhyd-y-pandy Road to approximately 80 m AOD along the southern perimeter, with ground levels generally falling in a southerly and south easterly direction.

Most of the Project Site is improved grassland but there are areas of marshy grassland in the location of the proposed Power Generation Plant.

There are several springs, with their associated streams and drainage ditches, which discharge into the Afon Llan (see Figure 5). The Afon Llan links with the Afon Lliw and the River Loughor, which discharges into the Bristol Channel. There are no main rivers within the Project Site Boundary.

The Generating Equipment Site is located primarily within fields used for grazing, bounded by a mixture of drainage ditches, fencing and poor quality hedgerows with substantial gaps in them. The Generating Equipment Site and Laydown Area are both crossed by a soft surface horse training track known as ‘the gallops’ (Figure 2), which runs diagonally north-west to south-east.

2. Existing Information

2.1 Data Sources

The following sources have been consulted to determine the history of the Project Site:

- Google Earth was used as a source of aerial imagery
- BGS Website – Geology of Britain Viewer,
  - http://mapapps.bgs.ac.uk/geologyofbritain/home.html. Accessed on 27 November 2017
- British Geological Survey 1:50,000 Geology Series Sheet 247 Swansea Bedrock and Superficial Deposits
- Envirocheck Report (October 2017)
- NATMAP Soilscapes dataset (Cranfield University) Cranfield University 2017. The Soils Guide. Available: www.landis.org.uk. Cranfield University, UK. Last accessed 08/03/2018 LandIS Soils Guide
- Abergelli Power Project, Environmental Statement, AECOM (May 2018)

According to the BGS online viewer, the Project Site is predominantly underlain by two types of glacial deposits. Across the northern half these deposits are described as sand and gravel whereas in the southern half the deposits are described as diamicton, a poorly sorted soil with a wide range of particle sizes. An area of peat is shown as being present in the central section of the Project Site. This is described by the BGS online Lexicon as an organic-rich clay or accumulation of wet, dark brown, partially decomposed vegetation. The BGS sheet 247 indicates that the glacial deposits are Devensian in Age with the peat being of more recent Holocene age. In Figure 2 the location of the peat, as extracted from the Envirocheck geology report, is shown in relation to other geological deposits.

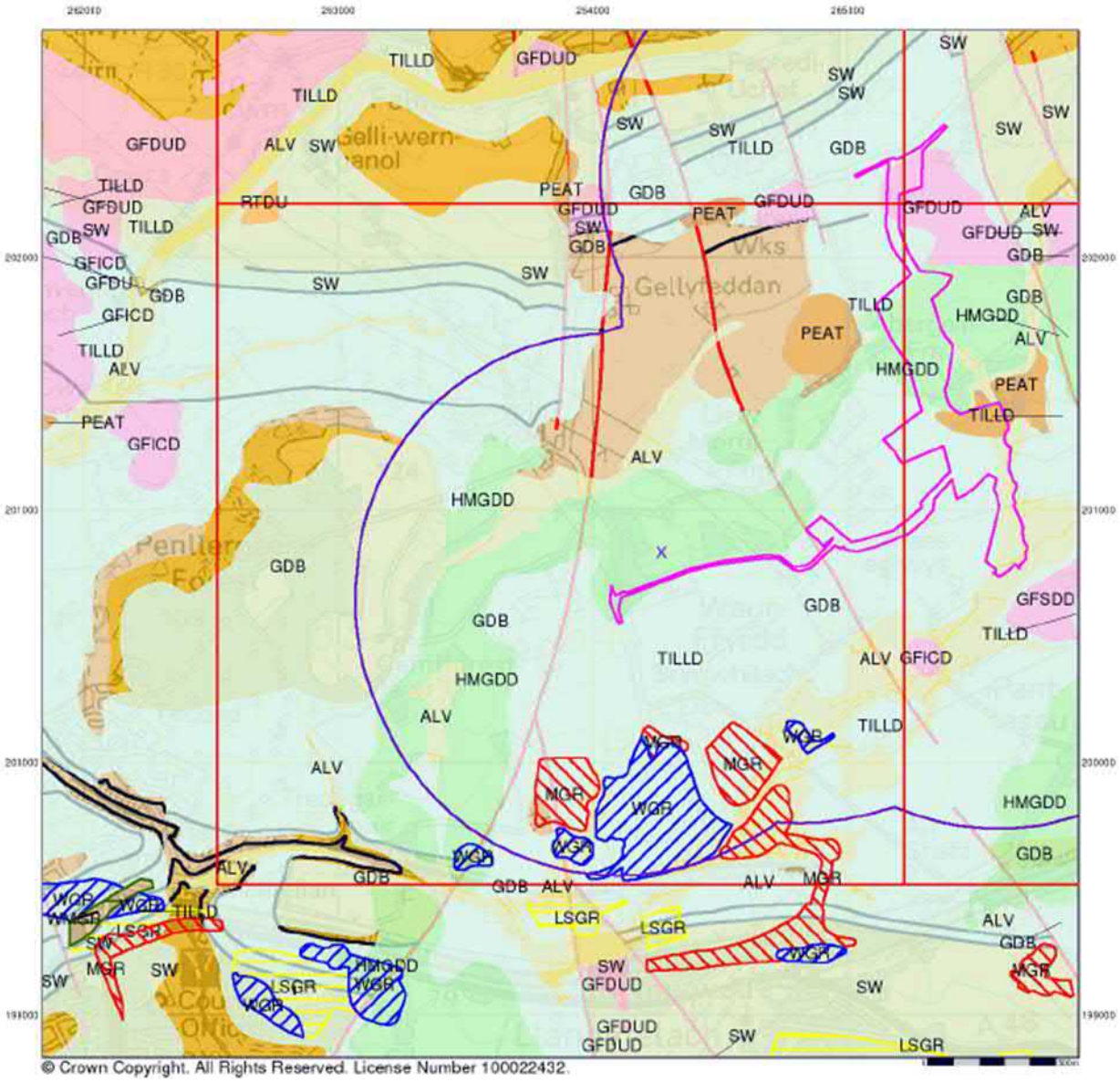
Soilscapes defined the ground profile as follows:

- Northern section (Gas connection) is underlain by both freely draining slightly acid loamy soils and slowly permeable wet very acid upland soils with a peaty surface.
- The central section (Generating Equipment Site) is largely underlain by slowly permeable wet very acid upland soils with a peaty surface (Figure 3). This is characterised by grass moor and some heather with flush and bog communities in wetter parts.
- The southern section (Ecological Mitigation Area) is predominantly underlain by slowly permeable wet very acid upland soils with a peaty surface with areas of freely draining slightly acid loamy soils.

The Soilscape maps do not give thicknesses of these soils.

The OS Maps indicate that there are several springs, sinks and a pond in the central section of the Project Site. The locations of these features are shown in Figure 5.

According to the British Geological Survey (BGS) geological mapping, there are areas of peat identified within the footprint of the Generating Equipment Site. The peat is shown to cover a total area of approximately 2.5 ha to 3 ha within the Project Site Boundary with its thickness unknown.



ALV	Alluvium	Clay, silt and sand
GFDUD	Glaciofluvial Deposits Devensian	Sand and gravel
TILLD	Till. Devensian	Diamicton
HMGDD	Hummocky Glacial Deposits Devensian	Sand and gravel
PEAT	Peat- Unidentified Deposits	Unidentified

Figure 3: Geological Map extract from Envirocheck showing the location of peat within the Project Site

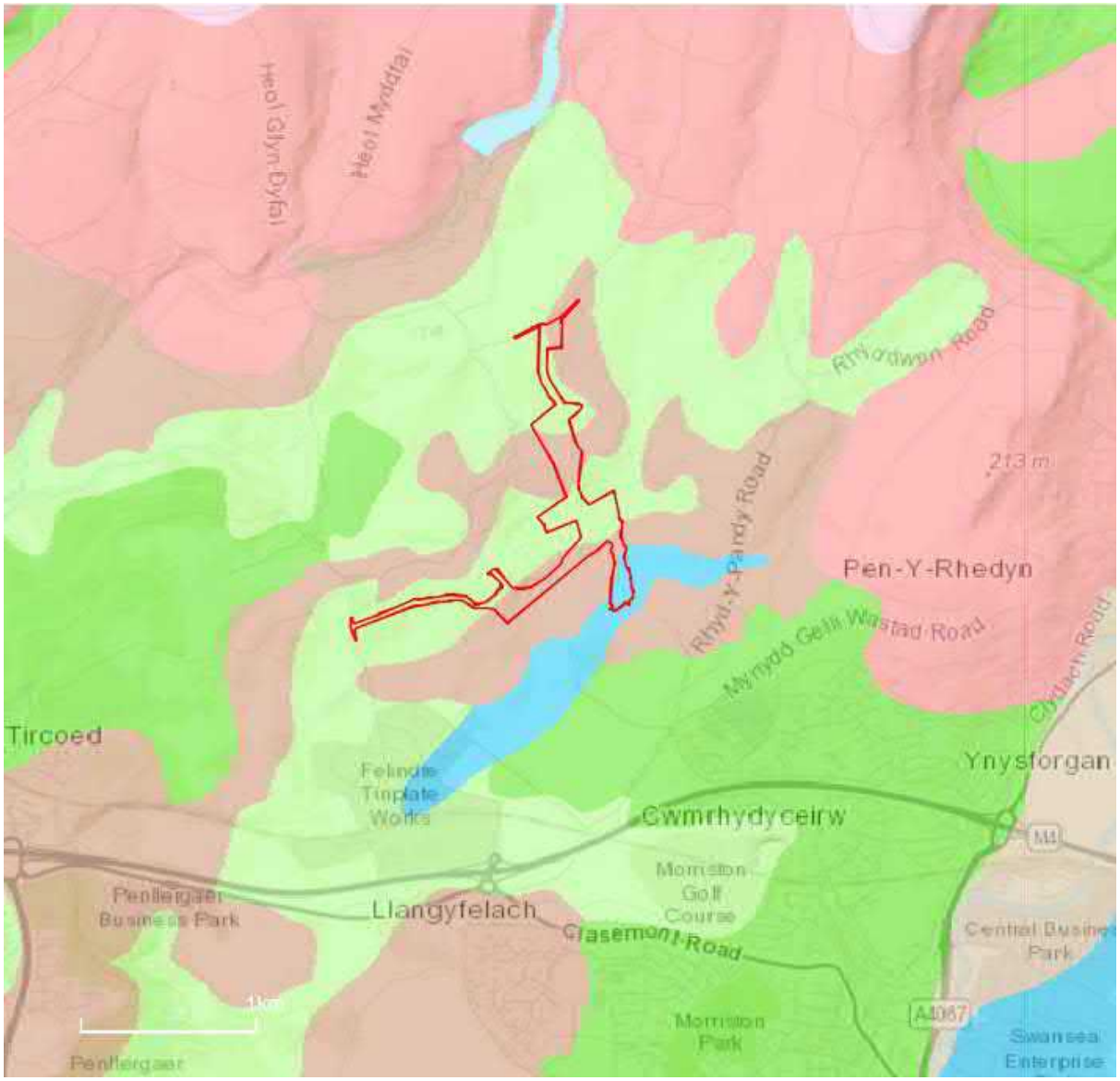


Figure 4: Soilscape Soil Information Map with annotated Project Site location sections

*not to scale

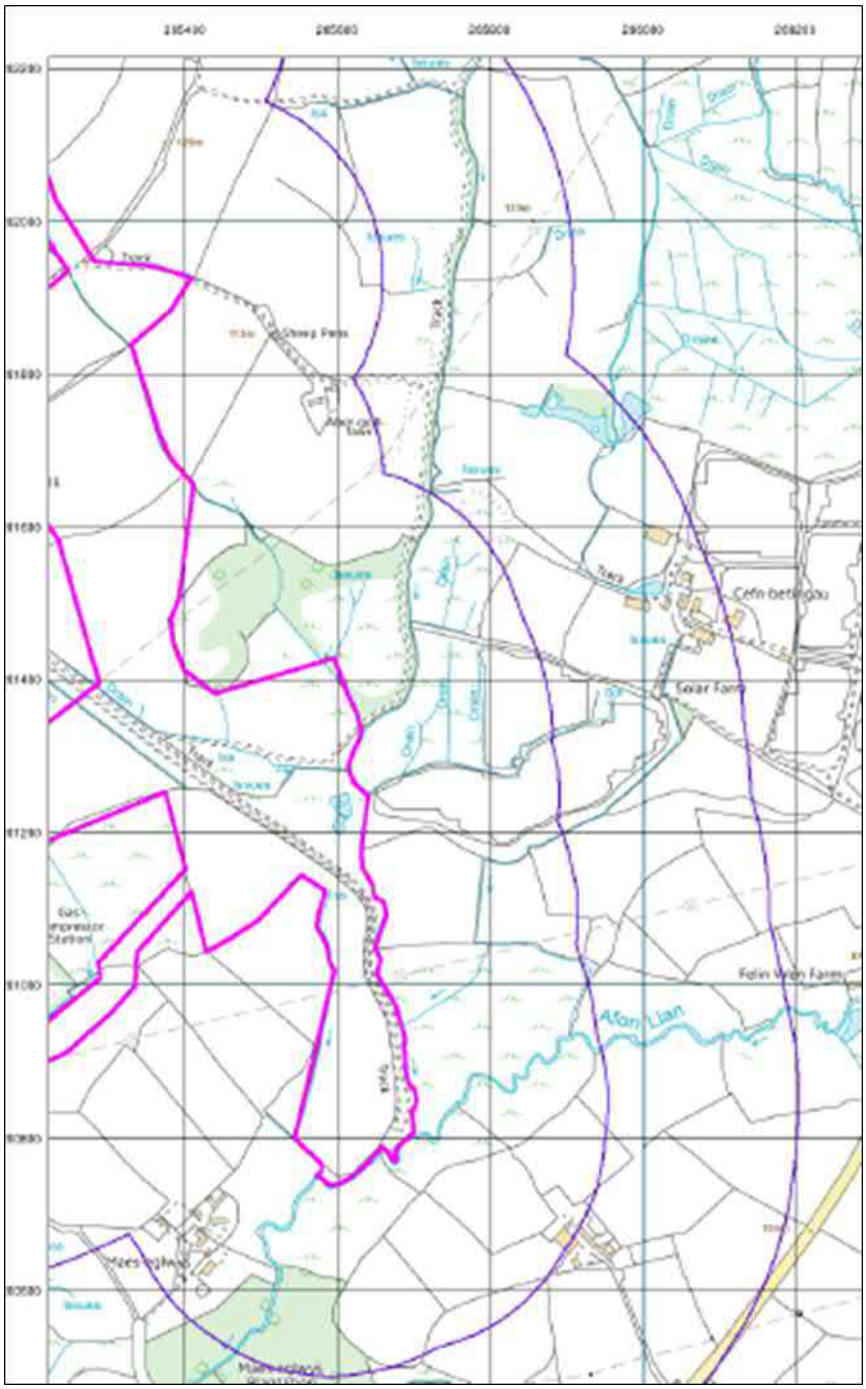


Figure 5: An extract of the Envirocheck Vector Map Local Published 2017 (scale 1:10,000) showing areas of issues and springs within the Project Site Boundary which is marked in pink.

3. Peat Survey

The Peat Survey was undertaken by AECOM for a duration of 3 days between the 24th and 26th of June 2018.

The aim of the Peat Survey was to confirm the presence of peat at shallow depth, ≤1.2m bgl, on the Project Site and then to delineate the lateral extents of any deposits. This would inform whether any special conservation measures would be required for the peat and also allow for a calculation of the carbon balance of the scheme

The Peat Survey was planned by AECOM following the guidance contained within the Peatland Code: Field Protocol document, Version 1.1 (International Union for Conservation of Nature (IUCN), March 2017). This document suggests a survey based on points at 100 m centres.

Based on this methodology a Peat Survey comprising of 47 separate exploratory hole locations was initially proposed across the Project Site. These holes would be trial pits excavated with hand tools to a maximum depth of 1.2m bgl. Consideration was also taken of buried services and any associated buffer zones which meant that the final proposed locations were sometimes further or closer than 100 m. The overall amount of survey points remained the same and this was considered to still be consistent with the Peatland Code (Ref 1).

The proposed survey exploratory hole locations are shown on Figure 6 in Appendix A.

3.1 Project Site Constraints

The following survey points were not undertaken during the field work due to a combination of land access, buried services, spatial constraints and prevailing ground conditions as summarised in Table 2.

Table 2: Summary of Exploratory Hole Location Abandonments

Exploratory Hole Location	Reason for Abandonment
TP01 – TP06	Initially planned along Access Road where only limited excavation is proposed and thus no major excavation of any peat would be expected.
TP07 – TP15	Access issues.
TP27 and TP28	Heavily overgrown. TP25a and TP26a excavated in their place as close as possible to original proposed locations.
TP33 – TP35, TP38 – TP40, TP42 and TP44	Omitted from the programme during the fieldwork as it was considered unlikely to encounter peat in these areas due to the findings of the adjacent exploratory holes.

The locations of the abandoned exploratory hole locations are shown in yellow on Figure 6.

4. Summary of Findings

The findings of the Peat Survey largely confirmed the anticipated ground conditions outlined in Section 2.1 with the exception of the presence of peat. Selected photographs from the survey are presented in Appendix A.

Topsoil was encountered in all twenty four trial pits excavated and was found to be underlain by glacial deposits described as sandy gravely clay with medium cobble content and low boulder content in all but four of the pits. These pits were excavated to a maximum depth of between 0.20m bgl and 1.20m bgl with the base of the clay not proven in any location. The clay was firm to stiff and all trial pits experienced difficult digging with hand tools. Pits terminated before 1.20m bgl in the clay were typically due to a boulder being encountered in the base of the pit preventing further excavation. It is not considered likely that peat identified on the geological maps would have formed beneath these glacial deposits due to their relative ages.

The four pits that did not immediately encounter glacial deposits, TP26, TP26a, TP25a and TP22 (photographs 11 & 12 and 16 & 17), instead encountered Made Ground typically comprising very dark grey clayey gravelly sand with occasional cobble sized fragments of wood and coarse gravel sized fragments of coal, clinker, plastic and brick. The Made Ground varied in proven thickness between 0.15 m and 0.5 m and was underlain by glacial deposits. The base of the Made Ground was not encountered in TP25a as the pit walls were collapsing preventing further excavation.

None of the trial pits encountered peat.

The ground conditions encountered in the trial pits are summarised in Table 3:

Table 3: Summary of Ground Conditions

Exploratory Hole Number	Final Depth (m)	Strata			
		Topsoil	Made Ground	Peat	Glacial Deposits
TP16 – TP21	0.7 - 0.9	0.0 - 0.15m	N	N	0.15 – 0.9m
TP22	0.9	0.15m	0.15 – 0.6m	N	0.6 – 0.9m
TP23 – TP25	0.3 – 1.0	0.0 – 0.3m	N	N	0.2 – 1.0m
TP25a – TP26a	0.15 – 0.7	0.0 – 0.2m	0.01 – 0.7m	N	0.3m
TP29 – TP32	0.2 – 0.9	0.0 – 0.2m	N	N	0.15 – 0.9m
TP36 – 37, TP41, TP43 and TP45 – TP47	0.45 – 1.2	0.0 – 0.3	N	N	0.1 – 1.2m

N = not encountered

Appendix A contains photographic evidence of each of the exploratory holes showing the ground conditions encountered.

5. Conclusions and Recommendations

AECOM were commissioned to undertake a Peat Survey on behalf of APL in order to determine the presence of peat on the Project Site.

The Peat Survey was planned following the guidance in the Peatland Code (2017) [Ref 1]. The survey comprised of twenty four hand excavated pits to maximum depth of 1.20m bgl. These pits confirmed the expected geology of glacial deposits but did not encounter any peat. The BGS geological mapping indicates that the peat is younger than the glacial deposits. Glacial deposits were encountered across the Project Site suggesting that peat is likely to be absent within the Project Site.

As no evidence of peat has been during the course of the Peat Survey a PMP for the Project Site is not required. It should be noted that if during any ground investigation undertaken to facilitate design of the power station peat is encountered, the need for a PMP will need to be re-evaluated.

6. References

Ref. 1 Peatland Code: Field Protocol document, Version 1.1 (International Union for Conservation of Nature (IUCN), March 2017).

Appendix A Figures

AECOM Limited
1 Callaghan Square
Cardiff, CF10 5BT
+44 (0)29 2067 4600 tel
www.aecom.com

Project Title:

ABERGELLI POWER PROJECT

Client:

Abergelli power
A Drax Group company

LEGEND

- Project Site Boundary
- Generating Equipment SIte
- Above Ground Installation (AGI)
- Gas Connection
- Electrical Connection (400kV Cable)
- Laydown Area
- Access Track
- Ecological Mitigation Area

AECOM Internal Project No:

60542910

Drawing Title:

PROJECT LAYOUT

Scale at A3: 1:8,000

Drawing No:				Rev:
FIGURE 2				005
Drawn:	**Chk'd:**	**App'd:**	**Date:**	
GM	CC	CA	24/08/18	

100 0 100 200 300 400 500 m

N

Filename: P:\UKCDF1-IE\Projects\Environmental\Jobs - Potential\2017\2017 Q1\Abergelli Power Station\010 GIS\02_Maps\Ground\20180819\F2_ProjectLayout.mxd

AECOM Limited
1 Callaghan Square
Cardiff, CF10 5BT
+44 (0)29 2067 4600 tel
www.aecom.com

Project Title:

ABERGELLI POWER PROJECT

Client:

Abergelli power

LEGEND

- Proposed Peat Probe Locations
- Proposed Peat Probe Locations- Not Excavated
- Project Site Boundary
- Utility Safeguarding Buffers

Note: Indicative Project Layout

AECOM Internal Project No:

60542910

Drawing Title:

PEAT SURVEY EXPLORATORY HOLE LOCATIONS

Scale at A3: 1:8,000

Drawing No:	Rev:
FIGURE 6	005

Drawn:	Chk'd:	App'd:	Date:
GM	CC	CA	19/08/18

100 0 100 200 300 400 500 m

N

Filename: P:\UKCDF1-IE\Projects\Environmental\Jobs - Potential\2017\2017 Q1\Abergelli Power Station\010 GIS\02_Maps\Ground\20180819\Fig_6_PeatSurveyExploratory.mxd

Appendix B Photographs

Photograph 1: TP47 showing succession of topsoil over glacial strata

Photograph 2: TP46 showing glacial deposits beneath topsoil

Photograph 3: TP45 showing topsoil over glacial deposits

Photograph 4: TP43 sandy gravelly clay with medium cobble content

Photograph 5: Base of TP43 showing impassable boulder

Photograph 6: TP41 showing succession of topsoil over glacial deposits

Photograph 7: TP36 showing glacial deposits with impassable boulders at base of pit

Photograph 8: TP37 showing glacial deposits

Photograph 9: TP37: Spoil heap showing glacial deposits comprising sandy gravelly clay with medium cobble content and low boulder content.

Photograph 10: TP25 showing wet ground conditions underlying clayey sandy topsoil with frequent roots. Beneath the topsoil were glacial deposits with high boulder content.

Photograph 11: TP25a showing made ground deposits

Photograph 12: TP25a showing made ground deposits including burned wood fragment at far left of spoil pile.

Photograph 13: TP23 showing succession of glacial deposits including compacted boulders underlying topsoil

Photograph 14: TP24 showing succession of topsoil over glacial deposits

Photograph 15: Detail of clayey topsoil with many rootlets in TP24

Photograph 16: TP22 showing succession of topsoil over made ground with glacial deposits at base

Photograph 17: TP22 detail of clayey sandy slightly gravelly topsoil with frequent rootlets

Photograph 18: TP21 showing succession of topsoil over glacial deposits

Photograph 19: TP16 sandy clayey topsoil with frequent rootlets overlying glacial deposits

Photograph 20: TP16 glacial deposits

Photograph 21: TP20 showing glacial deposits beneath topsoil

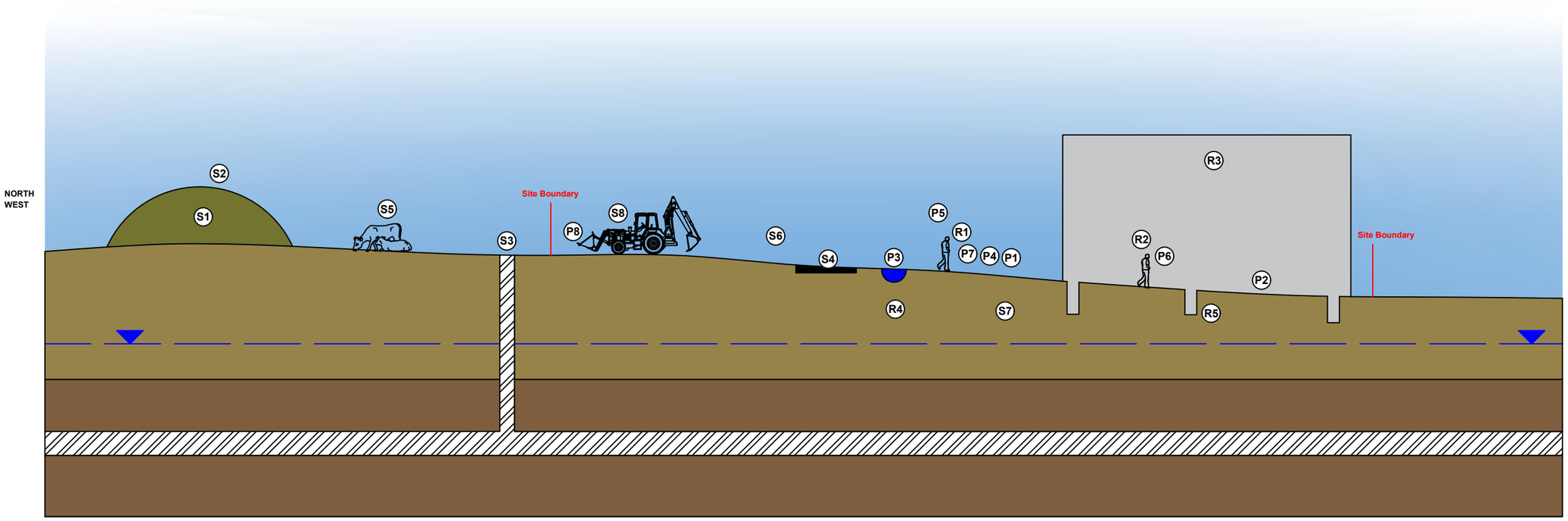
Photograph 22: TP17 showing topsoil over glacial deposits. Water ingress at base associated with gravel band

Photograph 23: TP31 showing glacial deposits comprising slightly gravelly sandy clay with low cobble content

aecom.com

Appendix 9

Block diagram schematic of the CSM



Source:

S1. Off-Site: Waste within the historic landfill and landfill extension (including the process of drying out water treatment sludge)

S2. Landfill gas generation

S3. Mine gas generation

S4. Natural gas from potential peat stratum

S5. Agricultural land (potential sheep dips, use of fertilisers)

S6. Natural radon gas

S7. Aggressive soil conditions

S8. Chemicals used during construction works including oils/fuels, liquid concrete and other materials

Pathway:

P1. Direct contact with shallow groundwater impacted with landfill leachates.

P2. Migration of ground gases / vapours into buildings including accumulation in confined spaces

P3. Surface run-off

P4. Dermal contact and ingestion of soils and dust. Inhalation of dust

P5. Inhalation of soil vapours outdoors

P6. Inhalation of soil vapours indoors

P7. Direct contact with shallow groundwater and soil

P8. Accidental releases to ground including spillage/ leakage from containers and engines, followed by vertical/lateral migration.

Receptor:

R1. Construction Workers

R2. Human Health: Future workers on the Generating Equipment

R3. Built environment / structures / services

R4. Controlled waters (groundwater in Secondary A superficial and bedrock aquifers and drainage ditches within the Project Site Boundary)

R5. Buried concrete structures of the Project

N

AECOM Limited
1 Callaghan Square
Cardiff, CF10 5BT
+44 (0)29 2067 4600 tel
www.aecom.com

Project Title:

ABERGELLI POWER PROJECT

Client:

LEGEND

AECOM Internal Project No:

60542910

Drawing Title:

CONCEPTUAL SITE MODEL

Scale at A3: Not to Scale

Drawing No:	Rev:
FIGURE 1	01

Drawn:	Chk'd:	App'd:	Date:
GM	MG	RK	22/10/2018

Filename: \\eu.aecomnet.com\euprojectvol\UKCDF1-IE\Projects\Environmental\Jobs - Potential\2017\2017 Q1\Abergelli Power Station\010 GIS\02_Maps\Ground\Abergelli_CSM_v1.dwg