



## Wylfa Newydd Project

### 6.7.12 ES Volume G - A5025 Off-line Highway Improvements G12 - Combined topic effects

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## 12 Combined topic effects

### 12.1 Introduction

- 12.1.1 Combined topic effects, also known as intra-development effects, occur when a single receptor is affected in more than one way by the same development.
- 12.1.2 This combined topic effects chapter considers those receptors that would experience more than one of the slight, moderate, large or very large effects identified in the preceding topic assessment chapters, and describes the predicted combined effects that would result.
- 12.1.3 Human receptors are considered first, followed by other receptors. Within those two main sections, receptors are grouped according to different types of receptors and the scale at which the effects have been assessed.
- 12.1.4 Within the section of this chapter relating to human receptors, in cases where effects would be different for residential and non-residential receptors, sub-headings are used to make this clear.
- 12.1.5 Embedded, good practice and additional mitigation measures are identified in the individual topic chapters and not in this chapter, which is based on the residual effects. It has not been possible to identify any additional mitigation to address combined effects that has not already been identified and committed to through the earlier steps in the Environmental Impact Assessment process.
- 12.1.6 Combined topic effects may be contributed to by multiple effects reported in one topic chapter (e.g. both a noise and a vibration effect) and/or in more than one topic chapter (e.g. both a noise and an air quality effect). Where combined topic effects result from individual effects reported in different topic areas, there is no published methodology for assessing such effects and assigning a level of significance to them, and so the assessment is limited to descriptions of the effects that would combine, based on professional judgement as to which effects would combine. The potential is recognised for some people affected to perceive the combined effect to be significant. Where combined effects result from individual effects reported within one topic, the significance criteria are as described in the relevant topic chapter.

### 12.2 Scope

- 12.2.1 The scope of this chapter is limited to the scope of this volume of the Environmental Statement, i.e. effects of the A5025 Off-line Highway Improvements.
- 12.2.2 All topics within this volume are scoped into the assessment of combined topic effects. However, the assessment has found that not all topics would contribute to combined topic effects. Appendix G12-1 (matrix of receptors and which topics affect them) (Application Reference Number: 6.7.47) indicates which receptors are shared by more than one topic.
- 12.2.3 In some cases, the effects reported in one topic chapter already have combined topic effects embodied within them (for example, amenity effects in

the public access and recreation topic are based in part on visual and noise effects), and so they are not considered again in this chapter.

- 12.2.4 The assessment of socio-economic effects reported in chapter G3 (socio-economics) (Application Reference Number: 6.7.3) included the consideration of potential air quality and noise and vibration effects as well as some consideration of traffic and transport effects (although traffic-related information is reported on a project-wide basis in volume C) (Application Reference Numbers: 6.3.1 to 6.3.7). Therefore, these topics are not considered in combination in this chapter.
- 12.2.5 Traffic-related effects are assessed on a project-wide basis; hence, they are excluded from the assessment of combined effects for this development in isolation.
- 12.2.6 Cumulative effects, both intra-project (resulting from the various developments that comprise the Wylfa Newydd Project) and inter-project (resulting from the Wylfa Newydd Project together with external projects) are not considered here, but are reported in volume I (cumulative effects) (Application Reference Numbers: 6.9.1 to 6.9.5).

## 12.3 Combined effects

### ***Human receptors in the vicinity of the A5025 Off-line Highway Improvements***

#### **Valley**

##### ***Residential receptors***

- 12.3.1 During construction, there are likely to be combined effects on residential properties within the community of section 1 Valley due to adverse effects on views and minor effects from noise and vibration and a not significant effect relating to dust deposition.
- 12.3.2 Noise from the A5025 Off-line Highway Improvements would have minor adverse effects at all 551 residential receptors. Vibration effects at these receptors would be of minor adverse significance. Residential properties located within the village of Valley and surrounding isolated residential properties would be expected to experience a not significant effect from dust deposition, due to the construction of the A5025 Off-line Highway Improvements.
- 12.3.3 There would be a moderate adverse effect on views and a minor adverse noise effect at Preswylfa and Glyn Villa (receptor R4 within chapter G10, landscape and visual, Application Reference Number: 6.7.10) and parts of the Valley community (receptor C1) during construction. There would also be slight adverse effects on views and minor adverse noise and vibration effects for other residential properties in the Valley community.
- 12.3.4 Receptors in Valley that experience noise, vibration and/or visual effects may be more likely to feel that dust deposition at a particular level would contribute to a combined topic effect.

- 12.3.5 It is possible that the combined topic effects on residential receptors in Valley would be perceived, by some people affected, to be significant during construction.

## Llanfachraeth

### *Residential receptors*

- 12.3.6 During construction, there are likely to be combined effects on residential properties within the Llanfachraeth community, due to adverse effects on views, minor effects from noise and vibration, and a not significant effect relating to dust deposition.
- 12.3.7 Noise effects from the A5025 Off-line Highway Improvements would be of major significance at two residential receptors around Llanfachraeth. In addition, seven properties are expected to experience moderate adverse noise effects while noise effects of minor significance are expected at 224 properties. Vibration effects are expected to be minor at three residential properties and negligible at all others. Residential properties located within the village of Llanfachraeth and surrounding isolated residential properties would be expected to experience a not significant effect from dust deposition due to the construction of the A5025 Off-line Highway Improvements.
- 12.3.8 There would be a very large adverse effect on views and a major adverse noise effect experienced at 1 Parc Llynnon (receptor R25) during construction. There would be a large adverse effect on views and a major adverse noise effect experienced at Pen-y-groes (receptor R40).
- 12.3.9 Residents at the following properties would experience a very large adverse effect on views and a moderate adverse effect due to noise:
- Erw Goch Cottage and 1 and 2 Pont yr Arw (receptor R24); and
  - 4, 12, 13 and 14 Parc Llynnon (receptor R27).
- 12.3.10 There would be a very large adverse effect on views and a minor adverse effect due to noise for Erw Goch, properties along the eastern edge of Llanfachraeth and at numbers 2, 3, 5, 6, 7, 8, 9, 10 and 11 Parc Llynnon (which are represented by receptors R24, R25 and R27).
- 12.3.11 There would be a large adverse effect on views and a minor adverse effect due to noise for properties along the north-eastern edge of Llanfachraeth, Bedo, Plas Ellen, Tan y Bryn and Penrhos Newydd, and adjacent properties (receptors R28, R30, R33 and R36).
- 12.3.12 Residents at the following properties would experience a moderate adverse effect on views and a minor adverse effect due to noise: Tyn Ffynnon (receptor R23); Bryn Farm and nearby properties (receptor R31); Green Farm and nearby properties (receptor R32); The Rectory (receptor R37); and Penyrorsedd (receptor R38).
- 12.3.13 There would be a slight adverse effect on views and a minor adverse effect due to noise for other residential properties within Llanfachraeth community (receptors C4) which may be also subject to minor adverse effects due to vibration.

12.3.14 Receptors in Llanfachraeth that experience noise, vibration and/or visual effects may be more likely to be more sensitive to dust deposition at a particular level that would otherwise be considered as not significant.

12.3.15 It is likely that the combined topic effects on the identified residential receptors in Llanfachraeth during construction would be perceived, by some people affected, to be significant.

## Llanfaethlu

### *Residential receptors*

12.3.16 During construction, there are likely to be combined effects on residential properties within and around the Llanfaethlu, due to adverse effects on views and increases in noise, vibration and a not significant effect relating to dust deposition.

12.3.17 Noise effects from the A5025 Off-line Highway Improvements would be of major significance at six residential receptors around Llanfaethlu. In addition, four properties are expected to experience noise effects of moderate significance in the area, with minor significance expected at 146 properties. Vibration effects within this area are expected to be minor at nine residential properties and negligible at all others.

12.3.18 Of the nine instances of minor vibration effects at residential property, six are predicted to occur at the same properties where major noise effects are expected. The other three instances are expected at properties that would experience noise effects of moderate significance. Residential properties located within the village of Llanfaethlu and surrounding isolated residential properties would be expected to experience a not significant effect from dust deposition, due to the construction of the A5025 Off-line Highway Improvements.

12.3.19 There would be a very large adverse effect on views and a moderate adverse effect due to noise during construction, for Rhos-ty-mawr (receptor R56). There is also a potential minor adverse impact on groundwater levels here, as a result of the proposed road cutting.

12.3.20 A large adverse effect on views and a major adverse noise effect would be experienced at Awel y Rhyd, Siop Soar, Tyn Llech and the annexe at Siop Soar (receptors R48, R49 and R50), during construction.

12.3.21 Residents at Ty'n Rardd (receptor R64) would experience a moderate adverse effect on views and a major adverse effect due to noise. Residents at Ty Capel Soar and Ael y Bryn (receptors R49 and R63) would experience a large adverse effect on views and a moderate adverse effect due to noise.

12.3.22 There would be a large or moderate adverse effect on views and a minor adverse effect due to noise for Mountain View, Fadog Frech, Cae'r Bryniau, Plas Uchaf, Tan y Bryn and properties on Y Bryn and Bryn Llwyd (receptors R47, R52, R53, R54, R55, R57 and R60) as well as Llanfaethlu community (receptor C5).



- 12.3.23 There would be a slight adverse effect on views and a minor adverse effect due to noise for other residential properties within Llanfaethlu.
- 12.3.24 Receptors in Llanfaethlu that would experience noise, vibration and/or visual effects may be more likely to be more sensitive to dust deposition at a particular level that would otherwise be perceived as not significant.
- 12.3.25 It is likely that the combined topic effects experienced during construction in Llanfaethlu would be perceived, by some people affected, to be significant.

***Non-residential receptors***

**Llanfaethlu Primary School**

- 12.3.26 During construction, Llanfaethlu Primary School (receptor Z2) would experience a slight adverse effect on views, and a minor adverse noise and minor adverse vibration effect. The school would be expected to experience a not significant effect from dust deposition. It is possible that the combination of these effects may be perceived, by some people affected, to be significant.

**Cefn Coch**

***Residential receptors***

- 12.3.27 During construction, there are likely to be combined effects on residential properties due to adverse effects on views, increases in noise and vibration, and a not significant effect relating to dust deposition.
- 12.3.28 Noise effects from the A5025 Off-line Highway Improvements works would be of major significance at one residential receptor around Cefn Coch. In addition, ten properties are expected to experience noise effects of moderate significance in the area, with minor significance expected at the remaining twenty residential properties. Vibration effects within this area are expected to be minor at four residential properties and negligible at all others. Of the four minor instances of vibration effects at residential properties, one is predicted to occur at the same property where major noise effects are expected. The other three instances are expected at properties with noise effects of moderate significance. Residential properties located around Cefn Coch and surrounding isolated residential properties would be expected to experience a not significant effect from dust deposition due to the construction of the A5025 Off-line Highway Improvements. At four properties, these combined effects are likely to be perceived, by some people affected, to be significant.
- 12.3.29 Residents at Tyn Felin (receptor R76), the White House and Rhandir (receptors R80 and R87) would experience a very large adverse effect on views, and a moderate adverse effect due to noise, during construction. The combined effect at these receptors is likely to be perceived, by some people affected, to be significant.
- 12.3.30 Residents at Cefn Coch Farm (receptor R88) would experience a moderate adverse effect on views, and a moderate adverse effect due to noise, during construction. This combination of effects is likely to be perceived, by some people affected, to be significant.

- 12.3.31 Residents at Tyn-yr-odyn would experience a slight adverse effect on views, a major adverse noise effect and minor vibration effects, whilst residents at Tan-y-coed, Pandy Cefn Coch, Y Nyth and Pandy Bar (receptor R90) would experience a slight adverse effect on views and a moderate adverse noise effect during construction. It is likely that these combined effects would be perceived, by some people affected, to be significant.
- 12.3.32 There would be a large or moderate adverse effect on views and a minor adverse level of effect due to noise for the following properties: Bod Hedd (receptor R75); Cerrig Cam (receptor R81); Ty Capel (receptor R82); Pen y groes (receptor R79); Plas Brain (receptor R89); Ty-croes (receptor R83); and Tyddyn Waen (receptor R84). These combined effects would be likely to be perceived significant by some people affected.
- 12.3.33 There would be a slight adverse effect on views and a minor adverse effect due to noise for other residential properties at Cefn Coch. There would also be a minor adverse effect due to vibration for residential properties at Cefn Coch. It is less likely that these combined effects would be perceived, by the people affected, to be significant.
- 12.3.34 Receptors in Cefn Coch that experience noise, vibration and/or visual effects may be more likely to be more sensitive to dust deposition at a particular level that would otherwise be perceived as not significant.

### **Near Treglele (Power Station Access Road and Junction)**

#### ***Residential receptors***

- 12.3.35 During construction, there are likely to be combined effects on residential properties within the Treglele community due to adverse effects on views, increases in noise and a not significant effect relating to dust deposition.
- 12.3.36 Noise effects from the A5025 Off-line Highway Improvements works would be of minor significance at all 31 residential receptors within the area south of Treglele. There would also be a minor adverse level of effect (or lesser effect) due to vibration for residential properties near Treglele. Residential properties located near Treglele would be expected to experience a not significant effect from dust deposition due to the construction of the A5025 Off-line Highway Improvements. It is possible that, at some of these receptors, some residents may perceive these combined effects to be significant.
- 12.3.37 There would be a large or moderate adverse effect on views and a minor adverse effect due to noise for the following properties: Treglele community (receptors C6); Groes and Groesfechan (receptor R94); Bwlch and adjacent properties (receptor R93); Foel Fawr (receptor R95); properties along the southern edge of Treglele (receptor R100); and Ysgubor Ddegwm (receptor R101). At these properties, the combined effects would be likely to be perceived, by some people affected, to be significant.
- 12.3.38 There would be a slight adverse effect on views and a minor adverse effect due to noise for other residential properties near Treglele. These combined effects are unlikely to be perceived as significant.

- 12.3.39 Receptors near Tregle that experience noise, vibration and/or visual effects may potentially be more likely to be more sensitive to dust deposition at a particular level that would otherwise be perceived as not significant.

### ***Other receptors in the vicinity of the A5025 Off-line Highway Improvements***

#### **Landscape character**

- 12.3.40 There would be an increased perception of adverse change to local landscape character, where there are also minor, moderate or major adverse effects predicted for receptors during the construction of the A5025 Off-line Highway Improvements in sections 1, 3, 5 and 7. This includes within the non-designated wider landscape, and within the Isle of Anglesey Area of Outstanding Natural Beauty (AONB) at section 3 Llanfachraeth and section 5 Llanfaethlu.
- 12.3.41 During operation, there would be an increased perception of adverse change to local landscape character, including within the non-designated wider landscape, when combined with the removal of or change in existing landscape features.
- 12.3.42 The combined effects on the landscape character would be likely to be perceived, by some people in the area, to be significant during construction of the A5025 Off-line Highway Improvements.

#### **Isle of Anglesey AONB special qualities**

- 12.3.43 The predicted effects on the special qualities of the Isle of Anglesey AONB during construction and operation are described below. Only the affected special qualities are listed. When considered together, there would be some combined effects on the special qualities of the AONB. However, these effects are unlikely to be significant as they would be very localised on the periphery of the AONB at section 3 Llanfachraeth and section 5 Llanfaethlu. Beyond these locations, effects on the special qualities of the AONB are not likely to be apparent.
- Expansive views: users of the footpath at viewpoint 24 would experience a slight adverse effect on views during construction and operation. Residents at viewpoint 30 and users of Gorad Road at viewpoints 5 and 6 would experience a slight adverse effect on views during construction.
  - Peace and tranquillity: increases in noise levels have been predicted within the Isle of Anglesey AONB at section 3 Llanfachraeth and section 5 Llanfaethlu during construction, although these would be relatively localised (refer to chapter G6, noise and vibration, Application Reference Number: 6.7.6 for further details). There would be an increase in noise levels during operation within the Isle of Anglesey AONB due to traffic at section 5 Llanfaethlu, although not all of the traffic would be attributable to the A5025 Off-line Highway Improvements. Conversely, there is likely to be a reduction in noise levels within the Isle of Anglesey AONB at

section 3 Llanfachraeth due to the change of alignment of the road (refer to chapter C5, noise and vibration effects of traffic, Application Reference Number: 6.3.5 for further details).

- Built environment, including Conservation Areas and Listed Buildings: there would be a slight adverse effect on the setting of the Grade II\* Listed Building St. Maethlu's Church during construction and operation. There would be a slight adverse effect on the setting of the non-designated historic building St. Machraeth's Church during construction and operation (refer to chapter G11, cultural heritage, Application Reference Number: 6.7.11 for further details).
- Archaeology and ancient monuments/historic landscapes, parks and gardens: there would be a slight adverse effect on the setting of archaeological remains at St. Machraeth's Church graveyard during construction. There would be a slight adverse effect on the historic landscapes of 'fieldscape central eastern Mon' and 'Llanfachraeth' during construction and operation (refer to chapter G11, Application Reference Number: 6.7.11, for further details).
- Rural agricultural/coastal communities: parts of the Llanfachraeth and Llanfaethlu communities are located within the AONB. There would be a major beneficial effect on the Llanfachraeth community due to a reduction of traffic. Conversely, there would be a minor adverse effect on the community of Llanfaethlu due to severance (refer to chapter G3, Application Reference Number: 6.7.3, for further details).
- Welsh language: this is discussed within the Welsh Language Impact Assessment within the Development Consent Order application.
- Soil, air and water quality: degradation of soil and dust deposition would take place during the construction of the A5025 Off-line Highway Improvements (refer to chapters G5 (air quality) and G7 (soils and geology) (Application Reference Numbers: 6.7.5 and 6.7.7) for further details).

### Heritage assets

12.3.44 Potential effects on the setting of heritage assets arising from visual intrusion and changes in landscape character, changes in the noise environment and vibration, in air quality and from changes in hydrology have also been considered in this chapter. No combined topic effects are therefore predicted for cultural heritage.