

## Chapter 15: Summary of Significant Effects



# Chapter 15

## Summary of Likely Significant Effects

### Introduction

**15.1 Chapters 6 to 14** of the Environmental Impact Assessment (EIA) Report present the findings of the predicted effects of the Proposed Development on a topic-by-topic basis. The significance of these effects has been assessed using criteria defined in the topic chapters. Where appropriate, the significance of effects has been categorised as Major, Moderate, Minor or Negligible. In the context of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (the 'EIA Regulations'), effects assessed as being of 'Major' or 'Moderate' significance are considered to be significant effects. Where this differs for certain topic chapters this has been clearly stated, and details are provided for how significant effects have been defined for that particular assessment.

**15.2** In line with Schedule 4 of the EIA Regulations, PAN 1/2013, and other relevant EIA guidance, the EIA Report has focused on identifying significant environmental effects (both positive and adverse) of the Proposed Development, during construction and operation (including cumulatively).

**15.3 Table 15.1 to 15.4** below summarises the predicted significant effects of the Proposed Development prior to and following the implementation of mitigation. All effects are adverse unless otherwise stated.

### Summary of Significant Effects

**15.4** Prior to committed mitigation, significant effects are predicted in relation to the following topics:

- **Landscape and Visual Amenity: Chapter 6;**
- **Geology, Hydrology, Hydrogeology and Peat: Chapter 7;**
- **Socio-Economics: Chapter 13** (adverse in relation to public access and positive in relation to economic benefits); and
- **Other Issues (Climate Change): Chapter 14** (positive).

**15.5** Prior to committed mitigation, significant effects are not predicted in relation to the following topics and these are therefore not discussed further in this chapter:

- **Ecology: Chapter 8;**
- **Ornithology: Chapter 9;**
- **Cultural Heritage: Chapter 10;**
- **Noise and Vibration: Chapter 11;** and
- **Traffic and Transport: Chapter 12.**

**15.6** Following mitigation, significant effects remain for the following topics:

- **Landscape and Visual Amenity: Chapter 6;**
- **Socio-Economics: Chapter 13** (positive); and
- **Other Issues (Climate Change): Chapter 14** (positive).

### Landscape and Visual Amenity

**15.7** It should be noted that wind turbines, as tall man-made structures, introduce features which are likely to bring about substantial landscape and visual changes. Measures to reduce effects upon the landscape resource and upon views and visual amenity are predominantly achieved through the design of the Proposed Development, as described in **Chapter 3: Site Selection and Design Strategy** and the supporting **Design and Access Statement**. As all mitigation for landscape and visual effects is embedded within the final design for the Proposed Development, all effects discussed in this section are effectively residual effects as no further mitigation is proposed.

### Significant Landscape Effects

**15.8** The assessment predicts **Significant** effects on the landscape resource of the Site itself (**Major**) during construction and operation. The assessment predicts Significant effects on the Landscape Character Types (LCT) for:

- LCT 7 – Craggy Upland – **Significant (Major)** effect within 10 kilometres (km), reducing to Not Significant (Minor) beyond.
  - Direct operational effects on this LCT will arise through the introduction of 11 turbines and associated infrastructure within the Site (with the two other turbines located within the neighbouring LCT 6a – Loch Fyne Upland Forest Moor Mosaic).
- LCT 6a – Loch Fyne Upland Forest Moor Mosaic – **Significant (Moderate)** effect within 5km, reducing to Not Significant (Minor) elsewhere.
- LCT 20 – Rocky Mosaic – **Significant (Moderate)** near Inverinan (approximately 4km), and Not Significant (Minor) at Ford (12-15km) and elsewhere around Loch Awe and Loch Fyne.

**15.9** Given the varied status, and therefore uncertainty, associated with un-built wind farms across the Study Area the Cumulative Landscape and Visual Impact Assessment (CLVIA) has considered two potential development scenarios:

- Scenario 1: Higher level of certainty: the addition of the Proposed Development to a landscape with operational, under construction and consented wind farms.
- Scenario 2: Lower level of certainty: the addition of the Proposed Development to a landscape with operational, under construction, consented and undetermined valid planning applications (including selected applications at Scoping stage when their consideration is requested by consultees).

**15.10** Overall, for the three LCTs above for which significant effects have been predicted, future cumulative effects are not judged to be of a greater significance than those of the primary Landscape and Visual Amenity Impact Assessment (LVIA) in both Scenario 1 and Scenario 2. Cumulative landscape effects are summarised in **Table 15.1** below.

### Significant Visual Effects

**15.11** Significant effects are predicted for operational effects on views and visual amenity for the following viewpoints (VPs):

- Viewpoint 1 – Loch Awe – **Significant (Major)** effect.
- Viewpoint 2 – Dalavich Jetty – **Significant (Major)** effect.
- Viewpoint 4 – Folly at Dun na Cuaiche (Inveraray Castle GDL) – **Significant (Major)** effect.
- Viewpoint 5 – Minor road to west of Loch Awe (north of Dalavich) – **Significant (Major)** effect.
- Viewpoint 7 – Core Path above Inverinan – **Significant (Moderate)** effect.
- Viewpoint 9 – Kilmaha Viewpoint – **Significant (Moderate)** effect.
- Viewpoint 11 – Loch Avich, east of Loch Avich House – **Significant (Moderate)** effect.
- Viewpoint 13 – Loch Avich – Assessed as Not Significant (Minor) effect, however this could increase to **Significant (Moderate)** if forestry is removed in the future.
- Viewpoint 15 – Fincharn Castle, Loch Awe – **Significant (Moderate)** effect.
- Viewpoint 16 – B840, East of Ford – **Significant (Moderate)** effect.

**15.12** Significant effects are predicted for operational effects on the settlements Dalavich (**Major**) and Inverinan (**Moderate**). There are significant operational effects predicted for the following routes:

- Minor Road West of Loch Awe and Cycle Route – **Significant (Moderate)** effect.

- B840 – **Significant (Moderate)** effect for a short section of the route near Ford, reducing to Not Significant (Minor) elsewhere.

**15.13** Operational effects on the designated landscape – North Argyll APQ effects are predicted as **Significant (Moderate)** within 17km to the north-east, reducing to Not Significant (Minor) elsewhere within the APQ. Overall, the Proposed Development will not significantly affect the integrity of the APQ by adversely impacting on the landscape qualities for which it was designated.

**15.14** LVIA and CLVIA effects are summarised in **Table 15.1**.

### Geology, Hydrology, Hydrogeology and Peat

**15.15** During construction, **Moderate** effects are predicted for water quality, quantity on public water supply and distribution assets. Mitigation will include taking cognisance of Scottish Water (SW) services and pipework during detailed design and prior to and during construction works. The Applicant will also undertake detailed discussion with Scottish Water, including onsite meetings to avoid pipework and plan suitable mitigation measures to be installed during construction to ensure no damage to SW assets. Following mitigation there is a negligible residual effect predicted.

**15.16** Geology, Hydrology, Hydrogeology and Peat effects are summarised in **Table 15.2**.

### Socio-Economics

**15.17** During construction, there will be a **Moderate** effect on Public Access (Core Path C200b) and Inveraray Forest Circuit as the Site access follows this route for approximately 3km. Following mitigation in the form of standard health and safety mitigation implemented via the Construction Traffic Management Plan (CTMP), Construction Environmental Management Plan (CEMP) (presented in outline in **Appendix 4.2**) and an Access Management Plan (AMP) (presented in outline in **Appendix 13.1**) effects are assessed as Minor (adverse).

**15.18** The Applicant will pay community benefit funds at the prevailing Scottish Government recommended value, currently £5,000/MW equivalent of installed capacity, for each year of operation for up to 40 years, to help fund local community projects within the community(ies) of interest. At the current recommended rate, community benefit payments could total £429,000 per annum and over £17.1 million over the course of the Proposed Development's 40 year operational life. Community benefit funds will be administered by a trust or similar body. The assessment predicts a **Moderate (positive)** effect or the Proposed Development in relation to direct economic benefits during operation.

**15.19** The estimated development and construction cost of the Proposed Development is expected to be approximately £85.8 million based on an estimated capital expenditure of £1m per installed MW. It was outwith the scope of the chapter to calculate expected direct economic benefits of construction of all schemes within the area, however, if the Proposed Development combined with the consented schemes within the region were constructed then a **Moderate (positive)** effect is predicted in relation to direct economic and employment benefits, cumulatively.

**15.20** The total community benefit contribution from other operational wind farms in the vicinity within Argyll and Bute Council area are already substantial. The funds generated from the Proposed Development have the potential to further increase this by £429,000 per annum, increasing the annual financial income to Argyll and Bute communities, and helping to deliver the economic growth opportunities of renewables. Overall, a **Moderate (positive)** cumulative operational effect is predicted in relation to direct economic benefits.

**15.21** Socio-Economic effects are summarised in **Table 15.3**.

### Other Issues: Climate Change Mitigation and Adaptation

**15.22** During operation **Moderate (positive)** effects are predicted for carbon losses and carbon offsetting (climate change mitigation). This increases to a **Major (positive)** effect for cumulative operational effects. No mitigation is proposed.

**15.23** Other Issues effects are summarised in **Table 15.4**.

### Interrelated Effects

**15.24** The EIA Regulations (Schedule 4, Paragraph 5) require that EIA Reports consider the interrelationships between aspects of the environment likely to be significantly affected by a development. It is considered that the following effects are interrelated:

- A number of heritage assets (**Chapter 10: Cultural Heritage**) are also discussed in the Landscape and Visual Impact Assessment (LVIA) in **Chapter 6**. As detailed in **Chapter 10**, the Cultural Heritage assessment and LVIA consider different kinds of receptors and effects, and hence can come to differing conclusions on levels of effect relating to the same heritage asset without this indicating an error in either assessment.
- There is a correlation between the sensitivity of viewpoints used for recreation and tourism and the landscape and visual assessment of the Proposed Development from these viewpoints within the wider 45km landscape and visual Study Area, with the assessment of effects in **Chapter 13: Socio-Economics** relating to the assessment of visual effects in **Chapter 6: Landscape and Visual Amenity**. Whilst the assessment of such interrelated effects is presented within **Chapter 13**, the assessment necessarily relates to the assessment in **Chapter 6**. It should be noted, however, that not all viewpoints are at locations which represent recreational and tourism interests.
- There is also some correlation between potential effects on recreational amenity resulting from noise effects during construction. Effects on noise are considered in **Chapter 11** and **Chapter 12** for construction noise.
- There are potential relationships between effects on geology, hydrology, hydrogeology and peat and effects on ecology. Specifically, excessive levels of suspended sediment in watercourses as a result of construction activities can have an indirect effect on watercourse ecology and fish. However, with embedded and additional site-specific mitigation (e.g. adherence to Guidelines for Pollution Prevention (GPPs), Sustainable Drainage Systems (SuDS), buffers etc.) there will be no significant residual effect on water quality of downstream watercourses. Therefore, effects on fisheries remain scoped out of this assessment (see **Chapter 8: Ecology**). In addition, changes to hydrology resulting from the Proposed Development could result in effects on Groundwater Dependent Terrestrial Ecosystems (GWDTEs), peatland habitats, aquatic habitats and other ecological receptors (for example, due to disruption of the hydrological processes that sustain GWDTEs). The potential for such interrelated effects has informed the assessment presented in **Chapter 7** and **Chapter 8**.
- There may be interrelationships between effects on ecology and ornithology in relation to the loss or reduction in quality of suitable habitats for breeding, or indirect effect on foraging due to the changes in conditions for prey items. The relevant effects in this respect have been considered for the purposes of the ornithological assessment presented in **Chapter 9**.
- There is the potential for a variety of effects of different kinds (particularly visual, noise and transport-related effects) to interact in a manner that influences the experience of residential amenity. The potential for such interactions has been taken into account within the EIA process for the Proposed Development. No effects beyond those reported within the relevant EIA Report chapters (**Chapter 6, Chapter 11** and **Chapter 12**) are predicted due to such an interaction.

**Table 15.1: Landscape and visual amenity summary of significant effects**

Predicted Effect	Significance of Residual Effect	Cumulative Effect
<b>Construction Effects</b>		
The Site	<b>Significant (Major)</b> effect	-
<b>Operational Effects on Landscape Character</b>		
The Site	<b>Significant (Major)</b> effect	-
LCT 7 – Craggy Uplands	<b>Significant (Major)</b> effect within 10km reducing to Not Significant (Minor) beyond.	No significant additional or total cumulative effects under Scenario 1. Significant (Moderate) effect under Scenario 2.
LCT 6a – Loch Fyne Upland Forest Moor Mosaic	<b>Significant (Moderate)</b> effect within 5km, reducing to Not Significant (Minor) elsewhere.	No significant additional or total cumulative effects under Scenario 1. Not Significant (Minor) effect under Scenario 2.
LCT 20 – Rocky Mosaic	<b>Significant (Moderate)</b> near Inverinan (approximately 4km) and Not Significant (Minor) at Ford (12-15km) and elsewhere around Loch Awe and Loch Fyne.	No significant additional or total cumulative effects under Scenario 1. Not Significant (Minor) effect under Scenario 2.

Predicted Effect	Significance of Residual Effect	Cumulative Effect
<b>Operational Effects on Views and Visual Amenity</b>		
Viewpoint 1 – Loch Awe	<b>Significant (Major)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Major) effect under Scenario 2.
Viewpoint 2 – Dalavich Jetty	<b>Significant (Major)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Major) effect under Scenario 2.
Viewpoint 4 – Folly at Dun na Cuaiche (Inveraray Castle GDL)	<b>Significant (Major)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Major) effect under Scenario 2.
Viewpoint 5 – Minor road to west of Loch Awe (north of Dalavich)	<b>Significant (Major)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Major) effect under Scenario 2.
Viewpoint 7 – Core Path above Inverinan	<b>Significant (Moderate)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Moderate) effect under Scenario 2.
Viewpoint 9 – Kilmaha Viewpoint	<b>Significant (Moderate)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Moderate) effect under Scenario 2.
Viewpoint 11 – Loch Avich, east of Loch Avich House	<b>Significant (Moderate)</b> effect	No significant additional or total cumulative effects under Scenario 1 or 2.
Viewpoint 13 – Loch Avich	Not Significant (Minor) effect. This could increase to <b>Significant (Moderate)</b> if forestry is removed in the future.	No significant additional or total cumulative effects under Scenario 1. Not Significant (Minor) effect under Scenario 2.
Viewpoint 15 – Fincharn Castle, Loch Awe	<b>Significant (Moderate)</b> effect	No significant additional or total cumulative effects under Scenario 1. Not Significant (Minor) effect under Scenario 2.
Viewpoint 16 – B840, east of Ford	<b>Significant (Moderate)</b> effect	No significant additional or total cumulative effects under Scenario 1. Not Significant (Minor) effect under Scenario 2.
<b>Operational Effects on Settlements</b>		
Dalavich	<b>Significant (Major)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Moderate) effect under Scenario 2.
Inverinan	<b>Significant (Moderate)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Moderate) effect under Scenario 2.
<b>Operational Effects on Routes</b>		

Predicted Effect	Significance of Residual Effect	Cumulative Effect
Minor road west of Loch Awe and cycle route	<b>Significant (Moderate)</b> effect	No significant additional or total cumulative effects under Scenario 1. Significant (Moderate) effect under Scenario 2.
B840	<b>Significant (Moderate)</b> effect for a short section of the route near Ford, reducing to Not Significant (Minor) elsewhere.	No significant additional or total cumulative effects under Scenario 1. Not Significant (Minor) effect under Scenario 2.
<b>Operational Effects on Designated Landscapes</b>		
North Argyll APQ	<b>Significant (Moderate)</b> within 17km to the north-east, reducing to Not Significant (Minor) elsewhere within the APQ.  Overall the Proposed Development will not significantly affect the integrity of the APQ by adversely impacting on the landscape qualities for which it was designated.	Not Significant (Minor) under Scenario 1 and 2.  Overall, the Proposed Development will not significantly affect the integrity of the APQ by adversely impacting on the landscape qualities for which it was designated.

Table 15.2: Geology, hydrology, hydrogeology and peat summary of significant effects

Predicted Effect	Significance	Mitigation	Significance of Residual Effect
<b>Construction Effects</b>			
Effect on water quality and quantity on public water supply and distribution assets.	<b>Moderate</b>	Cognisance of Scottish Water services and pipework during detailed design and prior to and during construction works. The Applicant will undertake detailed discussion with Scottish Water, including on-site meetings to avoid pipework and plan suitable mitigation measures to install during construction to ensure no damage to SW assets.	None

Table 15.3: Socio-economics summary of significant effects

Predicted Effect	Significance	Mitigation	Significance of Residual Effect
<b>Construction Effects</b>			
Public Access (Core Path C200(b)) and Inveraray Forest Circuit	<b>Moderate</b>	Standard health and safety mitigation implemented via the CTMP and CEMP and the AMP (presented in outline in Appendix 13.1).	Minor
<b>Operational Effects</b>			
Direct Economic Benefits	<b>Moderate (positive)</b>	Not applicable.	<b>Moderate (positive)</b>
<b>Cumulative Construction Effects</b>			

Predicted Effect	Significance	Mitigation	Significance of Residual Effect
Direct Employment and Economic Benefits	<b>Moderate (positive)</b>	Not applicable.	<b>Moderate (positive)</b>
Cumulative Operational Effects			
Direct Economic Benefits	<b>Moderate (positive)</b>	Not applicable.	<b>Moderate (positive)</b>

Table 15.4: Other issues summary of significant effects

Predicted Effect	Significance	Mitigation	Significance of Residual Effect
Operational Effects			
Carbon Losses and Carbon Offsetting (climate change mitigation)	<b>Moderate (positive)</b>	None	<b>Moderate (positive)</b>
Cumulative Operational Effects			
Carbon Losses and Carbon Offsetting (climate change mitigation)	<b>Major (positive)</b>	None	<b>Major (positive)</b>