

Chapter 14: Climate Change

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Appendices

- Technical Appendix 14.1: Carbon Calculator

14.1. Introduction

- 14.1.1. Further assessment of Climate Change has been scoped out of this Environmental Impact Assessment Report (EIAR) for the Section 36C Proposed Varied Development. The inclusion of this brief chapter is to outline the rationale for exclusion, referencing the 2021 EIAR as detailed within the Applicant's Scoping Report (**Technical Appendix 3.1: Scoping Report**) and the Scoping Opinion (**Technical Appendix 3.2: Scoping Opinion**) received from the Scottish Ministers relating to Climate Change and any additional consultee responses.
- 14.1.2. An updated Scottish Government Carbon Calculator to reflect the final design of the Proposed Varied Development has been prepared to support this chapter (refer to **Technical Appendix 14.1: Carbon Calculator**).

14.2. Scoping Report & Consultations

- 14.2.1. In the Applicant's Scoping Report (**Technical Appendix 3.1: Scoping Report**), it is proposed that Climate Change be **scoped out** of the EIA Report for this Section 36C Proposed Varied Development application.
- 14.2.2. The reasons to scope out Climate Change from this EIAR were clearly set out in the Scoping Report. The key justifications are as follows:
 - The 2021 EIAR found that greenhouse gas (GHG) emissions from the construction of the Consented Development would be minimal and offset by long-term carbon savings during operation.
 - Further ground investigations in 2023/2024 have improved understanding of peat depths, leading to design refinements in the Proposed Varied Development. These include rerouting tracks to avoid deep peat, integrating hardstandings with access tracks, and reusing excavated peat onsite to reduce carbon impacts. These refinements further reduce the carbon losses of the Proposed Varied Development when compared with the Consented Development and therefore enhance its climate benefits.
 - The Proposed Varied Development does not introduce any new or materially different sources of GHG emissions compared to those previously assessed. As such, no significant climate change impacts are anticipated.
- 14.2.3. The Scoping Opinion (**Technical Appendix 3.2: Scoping Opinion**) contains THC's consultation response to the Applicant's Scoping Report. In paragraph 3.3.9 it states: "*Carbon balance calculations should be undertaken and included within the EIAR with*

a summary of the results provided focussing on the carbon payback period for the wind farm.”

14.3. Consented Development

- 14.3.1. As stated within the Scoping Reporting (**Technical Appendix 3.1**), the principle of the Consented Development’s contribution to climate change mitigation was firmly established throughout the 2021 EIAR and specifically **2021 EIAR, Volume 1, Chapter 14: Climate Change**. As was explained in the 2021 EIAR, the carbon payback time is used as the measurement indicator to assess the influence of a project on climate change. Therefore, the shorter the payback period, the greater the benefit a development or project would have in displacing emissions associated with electricity generated by burning fossil fuels.
- 14.3.2. The Consented Development was expected to take around 30 months (2.5 years) to repay the carbon exchange to the atmosphere (the CO₂ debt) through construction of the wind farm. It noted that there were no current guidelines about what payback time constitutes a significant effect but that this was a small percentage (5.0%) of the 50-year lifespan of the project.
- 14.3.3. Further, it was noted that the Consented Development would have a very low carbon footprint and, after 2.5 years, the electricity generated is estimated to be carbon neutral and will displace grid electricity generated from fossil fuel sources. Following this period, the site would effectively achieve a net gain status and begin contributing to national efforts to reduce greenhouse gas emissions, supporting Scotland’s target of reaching net zero carbon emissions by 2045. It was, therefore, evaluated to have an overall beneficial effect on climate change.
- 14.3.4. The 2022 AIR compared the effects of removing three turbines and concluded that the carbon balance assessment remained unchanged and that the Consented Development would have an overall beneficial effect on climate change.
- 14.3.5. In issuing its decision to consent the scheme, the Scottish Ministers stated that the Consented Development is a sustainable development and that it would provide a contribution to renewable energy targets and carbon savings. The Scottish Ministers indicated they were satisfied that the Consented Development would provide carbon savings and that these savings will be of an order that weighs in its favour and would contribute to the Scottish Government’s strategic priorities.

14.4. Proposed Varied Development

- 14.4.1. As stated above, the Consented Development was expected to take around 30 months (2.5 years) to repay the carbon exchange to the atmosphere (the CO₂ debt) through construction of the wind farm. To reflect the final design of the Proposed Varied Development, an updated Scottish Government Carbon Calculator was produced (refer to **Technical Appendix 14.1: Carbon Calculator**). This demonstrated a reduced payback time of around 25 months (2.1 years), representing a small percentage (4.2%) of the 50-year lifespan of the project.
- 14.4.2. With a shorter payback period, the Proposed Varied Development will begin displacing emissions associated with electricity generated by burning fossil fuels earlier in its lifespan. After 2.1 years, the electricity generated is estimated to be carbon neutral and will displace grid electricity generated from fossil fuel sources. Following this period, the site would effectively achieve a net gain status and begin contributing to national efforts to reduce greenhouse gas emissions, supporting Scotland's target of reaching net zero carbon emissions by 2045. The Proposed Varied Development was therefore evaluated to have an overall beneficial effect on climate change.

14.5. Conclusion

- 14.5.1. This chapter has outlined the rationale for the exclusion of a full assessment chapter on Climate Change within this EIAR. It has been explained that the 2021 EIAR and 2022 AIR demonstrated to the Scottish Ministers satisfaction that the Consented Development would make a valuable contribution to renewable energy targets and carbon savings. Through the provision of an updated carbon calculator, it has also been demonstrated that the Proposed Varied Development will result in a reduced payback period when compared to the Consented Development. In conclusion therefore, the Proposed Varied Development will provide an even greater contribution to renewable energy targets and carbon savings.