



Morecambe Offshore Windfarm: Generation Assets Examination Documents

Volume 9

Remaining Responses from the Applicant's to Spirit Energy Deadline 1 Submissions

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Glossary of Acronyms

ALARP	As low as reasonably practicable
AltMoC	Alternative Means of Compliance
CAA	Civil Aviation Authority
CEA	Cumulative Effect Assessment
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
EU	European Union
ExA	Examination Authority
HSE	Health and Safety Executive
IMC	Instrument meteorological conditions
IMC	Instrument meteorological conditions
IRPA	Individual Risk Per Annum
ISH1	Issue Specific Hearing 1
MNZ	Morecambe Net Zero
MTI	Maintenance, testing and inspection
NRA	Navigational Risk Assessment
NUI	Normally unmanned installation
OSP	offshore substation platform
PFEER	Prevention of Fire and Explosion, and Emergency Response) Regulations
PINS	Planning Inspectorate
REWS	Radar Early Warning Systems
RR	Relevant Representation
SAP	Stabilised Approach Point
SoCG	Statement of Common Ground
UK	United Kingdom
VFR	Visual Flight Rules
VMC	Visual meteorological conditions
WTG	Wind Turbine Generator

Glossary of Unit Terms

km	kilometre
km ²	square kilometre
m	metre
nm	nautical mile

Glossary of Terminology

Agreement for Lease (AfL)	Agreements under which seabed rights are awarded following the completion of The Crown Estate tender process.
Applicant	Morecambe Offshore Windfarm Ltd
Application	This refers to the Applicant's application for a Development Consent Order (DCO). An application consists of a series of documents and plans which are published on the Planning Inspectorate's (PINS) website.
Generation Assets (the Project)	Generation assets associated with the Morecambe Offshore Windfarm. This is infrastructure in connection with electricity production, namely the fixed foundation wind turbine generators (WTGs), inter-array cables, offshore substation platform(s) (OSP(s)) and possible platform link cables to connect OSP(s).
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects.
Windfarm site	The area within which the WTGs, inter-array cables, OSP(s) and platform link cables would be present.



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1 Introduction and Contents

1.1 Purpose of this document

1. This document provides additional comments from the Applicant on Spirit Energy's submissions provided at Deadline 1 that were not previously addressed at Deadline 2 in The Applicant's Response to Spirit Energy Deadline 1 Submissions (REP2-030). This document also signposts to further technical evidence provided by Applicant to support the position set out at Deadline 2. This includes analysis using Vantage Personnel on Board flight data provided by Spirit Energy on 6 December 2024. This document is intended to be read in conjunction with The Applicant's Response to Spirit Energy Deadline 1 Submissions (REP2-030).

1.2 Contents of this document

2. The Applicant's additional comments are structured to address the key issues raised by Spirit Energy in their relevant representation (RR-077) and written representation (REP1-116) that were not previously addressed in detail at Deadline 2. This document includes the following sections and appendices:
 - Section 2 **Impacts to Helicopter Aviation Operations** (refers to Appendix A: Report on Impact to Helicopter Flights Document Reference 9.43.1)) - supplements Sections 5 and 6 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)
 - Section 3 **Aviation Safety / Operational / Efficiency Impacts to Spirit and Harbour** (refers to Appendix B: Effect of Proposed Morecambe Offshore Windfarm on Offshore Oil and Gas Operations (Document Reference 9.43.2)) - supplements Sections 7 and 8 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)
 - Section 4 **Shipping and Navigation Safety** (refers to the updated Appendix 17.2 Radar Early Warning System Technical Report_Rev 02 Clean(Document Reference 5.2.17.2) submitted at Deadline 3) - supplements Section 9 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)
 - Section 5 **Decommissioning** - supplements Section 11 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)
 - Section 6 **Morecambe Net Zero (MNZ)** - supplements Section 10 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)

- Section 7 **National Policy Statements** – supplements Section 12 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)
- Section 8 **Residual Commercial Impact on Spirit Energy and Mitigation / Protective Provisions** - supplements Section 2 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)

1.3 Update on Engagement Between the Parties

3. Since the Applicant's Response to Spirit Energy Deadline 1 Submissions, the Applicant's and Spirit Energy's solicitors have been liaising and an undertaking for the full legal costs requested by Spirit is in place. Spirit Energy's solicitors have confirmed that Spirit are progressing work on the protective provisions, and this includes updates to the aviation related protective provisions. The Applicant has not yet had been provided with a copy, but Spirit's solicitors have confirmed an intention to progress protective provisions with a view to reaching consensus (where possible) with the Applicant on the terms of protective provisions for inclusion in the Applicant's dDCO to be submitted at Deadline 4 on 18 February 2025. The Applicant is supportive of this proposed approach and timetable (noting for the avoidance of doubt that if agreement cannot be reached on any points then each party may need to submit its own preferred drafting, although the Applicant's clear preference is to avoid such a situation).

1.4 Harbour Energy

4. This document (and The Applicant's Response to Spirit Energy Deadline 1 Submissions (REP2-030)) addresses the representations of Spirit Energy. However, it includes a full analysis of Harbour Energy's Calder Platform, because Harbour defer to Spirit as the operator. As such this response also addresses the majority of the representations by Harbour Energy. It is the Applicant's intention to align protective provisions in favour of each of Spirit and Harbour.

2 Impacts to Helicopter Aviation Operations

5. The Applicant has previously considered impacts to helicopter aviation operations within Section 5 (Impacts to Helicopter Aviation Operations) and Section 6 (Potential CAA Regulatory Change) of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030). Further technical evidence to support the Applicant's position is provided in Appendix A: Report on Impact to Helicopter Flights (Vantage Data and CAA Rule Change) (Document Reference 9.43.1).
6. The analysis presented in Appendix A concludes that in relation to:

- The impact to access of the CPC-1 helideck will be low. Mitigations, such as the proposed south-westerly take-off corridor will permit a large proportion of the IMC flights to CPC-1 to take place, as demonstrated in the Applicant's Deadline 2 submissions. By providing a day and night take-off corridor, into the prevailing wind, will further improve helicopter access to the CPC-1 helideck.
 - The assumptions used in the assessments undertaken by AviateQ (on behalf of Spirit Energy) in calculating the required Landing and Take-off Distances do not apply a reasonable worst-case assessment but an absolute worst-case, which is unlikely to occur in practice.
 - If new restrictions on helicopter aviation operations to oil and gas platforms in the vicinity of offshore windfarms were introduced through a Civil Aviation Authority (CAA) Rule Change that, based on precedent and professional experience, it is considered that obtaining an AltMoC for continued IMC and Night VMC approaches and take-offs from helidecks adjacent to the Morecambe Offshore Windfarm is feasible.
 - Protective Provisions – those that have been drafted by the Applicant in favour of Spirit Energy and Harbour Energy are consistent with those recently secured within the Development Consent Orders for other offshore windfarms in the North Sea.
7. Appendix A provides an overview of the schedules of helicopter flights to Spirit Energy assets in Morecambe Bay, in particular the frequency and length of visits to Normally Unmanned Installations (NUIs).
8. Further explanation is also provided on the helicopter approach and take-off distances required and why the Applicant differs from the analysis shown in the AviateQ Report submitted by Spirit Energy as Appendix A to their Written representation (REP1-116) at Deadline 1.
9. Further information is also provided on how helicopter operators can gain an alleviation from aviation regulations promulgated as AMC, how an AltMoC is applied, and why there is no known impediment to an AltMoC being approved in respect of the corridor mitigation.
10. In response to the Examining Authority's Question 1CAR17 (PD-011), a comparison is to be made between the Applicant's methodology for assessing helicopter access and that used by Spirit Energy. The Applicant will demonstrate they are making a reasonable worst-case assessment of the impact on helicopter operations.

3 Aviation Safety / Operational / Efficiency Impacts to Spirit and Harbour

11. The Applicant has previously considered the aviation safety and operational and efficiency impacts to Spirit (and Harbour) within Section 7 (Aviation Safety) and Section 8 (Aviation Operational / Efficiency Impacts) of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030). Further technical evidence to support the Applicant's position is provided in Appendix B - Effect of Proposed Morecambe Offshore Windfarm on Offshore Oil and Gas Operations (Document Reference 9.43.2).
12. The analysis presented within Appendix B concludes that in relation to operational and efficiency impacts to Spirit (and Harbour):
 - There is no significant increase in risk to personnel safety from additional helicopter flights that may be required due to reduced helicopter access.
 - There will be no adverse impact on safety critical or routine maintenance with the usual best industry practices employed in planning and scheduling of critical and routine activities. .
 - There will be no impact on emergency evacuation and escape from either CPC-1 or any of the NUIs.
 - There will be no significant increase in risk to personnel on either CPC-1 or any of the NUIs nor any significant change in the way that the helicopter operations are managed. There will be no new risk reduction measures introduced and no change to the demonstration that the risk is ALARP other than the additional helicopter weather restrictions. Thus, there will be no need to submit a material change to the installation safety case(s) which require acceptance by the HSE. Minor revisions will suffice.
 - Financial cost analysis and conclusions redacted - see **Section 8** below.
13. Importantly, the conclusions of the DNV report at Appendix B do not depend on the details of the operation of the affected assets unless they are being operated in an unusual manner that is not evident from the Vantage data (e.g. overnight stays on the NUIs). Equally, it is not dependent on the details of the flight restrictions, just noting that a fraction of flights may be affected in the context of the overall flight schedule being variable. It also does not take into account the corridor mitigation proposals. So it is not necessary to make a finding on the evidence of Anatec or AviateQ, or accept the benefits of the corridor mitigation, as a prerequisite to accepting the conclusions of this

report. These conclusions apply equally to the aviation position as set out by Spirit Energy.

4 Shipping and Navigation Safety

14. The Applicant has previously considered the shipping and navigational concerns raised by Spirit Energy (raised in Part 6 of its Relevant Representation (RR-077) and supplemented in Part 3 of its Written Representation (REP1-116)) within Section 9 (Shipping and Navigation Safety) of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030). The Applicant addressed Spirit Energy's concerns in the response, and included updated drafting within the Protective Provisions in favour of Spirit Energy (Schedule 3 Part 2 of the draft DCO (Document Reference 3.1) (REP2-002)).
15. As stated in paragraph 93 of the Applicant's Response to Spirit Energy Deadline 1 Submissions (REP2-030), a detailed response to Spirit Energy's concerns around radar early warning systems (REWS) would be provided at Deadline 3. The Applicant commissioned an updated Radar Early Warning System Technical Report_Rev 02 Clean (Document Reference 5.2.17.2) (REWS Report), which is being submitted at Deadline 3. The REWS Report was updated to take into account comments made by Spirit Energy in its Relevant Representation (RR-077) and Written Representation (REP1-116). The updated REWS Report presents additional modelling results to assess the impact of shadowing in more detail to assess the detection and tracking performance of the REWS within the radar shadow regions (see Section 4.3.2 of Appendix 17.2 Radar Early Warning System Technical Report_Rev 02 Clean (Document Reference 5.2.17.2)). Table 2.1 of the updated REWS report summarises the comments made by Spirit Energy together with the response and details of the updates provided. The additional modelling confirms the conclusions of the REWS Study (APP-081) previously submitted with the Application that:
 - the impact of the Project on detection performance of nearby REWS installations is low and manageable without the need for further mitigation measures
 - the modelling results for the Project also indicate that the assessed REWS platforms would not experience a change in yearly alarm rates as a result of rerouted traffic
 - there would be no negative impact from the Project on microwave communication links.
16. The REWS Report states at paragraph 7.1.1.10, *"the models show that the impact of the Morecambe Generation Assets in isolation and the cumulative impact of the Morecambe Generation Assets with Mona Offshore Wind Project*

and Morgan Generation Assets on detection performance of nearby REWS installation is expected to be low and will be manageable without the need for further mitigation measures.”

5 Decommissioning

17. The Applicant has previously considered the decommissioning concerns of Spirit and Harbour within Section 11 (Decommissioning) of the Applicant's Response to Spirit Energy Deadline 1 Submissions (REP2-030). The Applicant updated the protective provisions in favour of Spirit Energy in Schedule 3 Part 3 of the draft DCO (REP2-002) which secures aviation and marine buffer zones and corridors and a commitment to pay additional costs incurred by Spirit Energy in carrying out the owner's works due to impaired helicopter access. It is expressly made clear in the current drafting that the “owner's works” includes decommissioning activities. The Applicant considers resolves Spirit Energy's concerns in this regard.
18. Spirit has stated that the additional decommissioning cost of which could be “well in excess of £10 million” (paragraph 5.7 of Spirit Energy's Written Representation (REP1-116), although this figure is unsubstantiated. The Applicant has commissioned analysis (by Xodus Group, a leading global energy consultancy who offer engineering and advisory support to clients in the oil and gas industries across the lifetime of their assets) to estimate the potential additional decommissioning costs incurred by Spirit Energy due to the presence of the Project. This analysis has been undertaken based on the publicly available information for Spirit Energy's assets.
19. The initial analysis has considered the following activities:
 - Project management costs associated with running and managing the decommissioning of the assets
 - Cost associated with maintaining the assets in the period between Cease of Production (CoP) and topsides removal
 - Use of rigs for well decommissioning and plug and abandonment activities
 - One off Facilities & Pipeline Permanent Isolation and Cleaning to make assets hydrocarbon free
 - Topside preparation for decommissioning, including the potential need to upgrade any of the platform facilities to support the decommissioning approach
 - Topside and jackets removal using heavy-lift vessels, including the potential need for crew change flights to/from the vessels during the removal activities
 - Subsea infrastructure disconnections.

20. The Applicant is not submitting this financial cost analysis to the Examination at this time, for the reasons explained below. The Applicant's position on commercial impacts is set out further in **Section 8** below.

6 MNZ, carbon capture utilisation and storage

21. Spirit Energy set out a number of concerns relating to Morecambe Net Zero (MNZ) project and carbon capture utilisation and storage (CCUS) (paragraphs 3.6 to 3.9 of the Spirit Energy Relevant Representation (RR-077) and Part 4 of the Spirit Energy Written Representation (REP1-116)). The Applicant did not previously provide a response to Spirit Energy's points on this matter, nor address them in the updated protective provisions in the draft DCO (REP2-002).
22. The Applicant requires to understand further Spirit Energy's position and its technical requirements in order to develop a refined position. The Applicant notes that Spirit Energy stated within its comments at Deadline 1 (REP2-042) that it intends to comment on the Applicant's Deadline 2 submissions at Deadline 3. The Applicant will subsequently respond to further comments received in relation to MNZ in due course. In addition, as noted in Section 1.3 above, the Applicant is expecting revised Protective Provisions from Spirit Energy's solicitors, and it is anticipated that the drafting proposed will allow the Applicant to understand what is being requested by Spirit in relation to the MNZ project.
23. The Applicant notes that The Crown Estate have been working on the issues and opportunities that come from the co-location of CCUS and offshore wind technologies and have established an Offshore Wind and CCUS Co-Location Forum¹. In parallel to this the Net Zero Technology Centre and Offshore Renewable Energy Catapult were jointly commissioned by The Crown Estate to undertake a comprehensive and unbiased study to examine the additional risks that may result from overlapping of Offshore Wind and CCUS projects and how these risks may be managed².
24. The findings and recommendations report that was produced at the end of that study identified a range of mitigations to reduce identified risks for overlapping offshore wind and CCUS projects. These include current good practice measures and potential future mitigations. For example, the appointment of a common oversight body for overlapping projects consisting of a combination

¹ [Offshore Wind and CCUS Co-Location Forum | The Crown Estate](#)

² [Unlocking co-location opportunities for CCUS and offshore wind - Net Zero Technology Centre](#)

of government and industry bodies, to provide input to enable issues such as overlap planning opportunities, development planning / precedence, promotion of collaboration, alignment of standards, cross-industry liabilities and dispute mediation to be handled.

6.1 Examining Authority's Written Questions

25. The ExA has asked two questions in relation to MNZ as part of its Written Questions (PD-011). These are as follows:

- 10017 a) *"Having regard to paragraph 2.8.197 of NPS EN-3, is the Carbon Dioxide Appraisal and Storage Licence CS010 a 'licence' for the purposes of this paragraph, or is it something else? If it is something else, please explain what it is."*
- 10017 c) *"Can the Applicant please respond to the concerns raised by Spirit and in particular comment on whether the Protective Provisions could be amended to include the identified wells and set appropriate stand-offs in order to safeguard and ensure future access is maintained?"*

26. To avoid repetition, responses to these questions are provided in the Applicant's Response to ExQ1 (Document Reference 9.41).

7 National Policy Statements in relation to the Affected Assets

27. The Applicant has previously considered National Policy Statements (NPSs) in relation to the Affected Assets within Section 12 of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030).

28. As set out previously in detail, the Applicant considers that the ExA and Secretary of State can be satisfied that the Project's approach to and relationship with oil and gas infrastructure is in line with the National Policy Statements. This conclusion is underpinned by the design mitigation and commitment to pay additional costs secured in proposed Protective Provisions (REP2-00), and further reinforced by the new Aviation Corridor (REP2-032).

8 Residual Commercial Impact on Spirit Energy and Mitigation / Protective Provisions

29. The Applicant has previously set out its approach to mitigation and protective provisions (including buffer zones, the helicopter corridor and the obligations to pay additional costs incurred) in Section 2 (Updated Protective Provisions)

of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030). The Applicant considers that the physical mitigation (buffer zones and the corridor) has been developed as far as reasonably possible without material detriment to the benefits and viability of the Project, and that the commitment to pay additional costs ensures no residual impact on Spirit (and Harbour) and the affected assets. This is wholly supported by (and goes further than) the provisions of the NPSs on impacts on other offshore infrastructure (see Section 6 above and Section 2 (Updated Protective Provisions) of the Applicant's Response Spirit Energy Deadline 1 Submissions (REP2-030)). This section considers further the potential for additional costs.

30. As explained at paragraph 86 of the Applicant's Response to Spirit Energy Deadline 1 Submissions, to mitigate the residual commercial impact on Spirit Energy,

“the Applicant has provided in the protective provisions (Schedule 3 Part 3 of the draft DCO (Document Reference REP-001) that the undertaker must pay to the owner the additional costs resulting from such impaired access. It is considered that a side agreement would be the most appropriate place to agree any commercial detail, but as a placeholder the Applicant has included reference to a liability cap (an important commercial point for projects seeking project finance, standard practice for offshore wind farms). It is expected that such commercial detail would not be included in final protective provisions on the assumption that the parties agree a side agreement (or co-existence agreement) to accompany protective provisions.”

31. The Applicant has subsequently undertaken further analysis of the potential quantum of the costs of these residual impacts. Section 7 of Appendix B: Effect of Proposed Morecambe Offshore Windfarm on Offshore Oil and Gas Operations (Document Reference 9.43.2) considered the limited potential for lost production, additional helicopter flights, deferred mobilisation of vendor personnel and potential for deferred safety critical maintenance. The Applicant has also considered the potential for increased costs to decommissioning activities (as listed in **Section 5**). The analysis within Appendix B is based on annual revenue figures and projections for the Affected Assets, based on publicly available gas National Transmission System (NTS) entry figures (at Barrow for Morecambe) and data from asset reports from Wood Mackenzie (leading global provider of data and analytics solutions for the renewables, energy and natural resources sectors).
32. The Applicant has redacted Section 7 from Appendix B and is not submitting the monetary values to the Examination at this Deadline 3. Nor is it submitting its analysis of decommissioning costs at this Deadline. The Applicant considers this is a commercial discussion which would be most appropriately carried out directly between the Applicant and Spirit Energy (and Harbour Energy), and is respectful that Spirit Energy may prefer to consider the

Applicant's analysis on a bilateral basis at least in the first instance. However, the Applicant is confident that such analysis does demonstrate that the proposed approach to protective provisions – that the undertaker must pay to the owner the additional costs resulting from impaired helicopter access due to the presence of the wind farm – is an appropriate solution, inclusive of a reasonable but precautionary liability figure. This would remain the case even taking a precautionary approach to the aviation impact analysis, for example: taking at face value Spirit Energy's own original (i.e. not accounting for the corridor mitigation) view on the additional decommissioning cost of which could be "well in excess of £10 million" (paragraph 5.7 of Spirit Energy's Written Representation (REP1-116); regardless of the differences between the Applicant's analysis by Anatec and Spirit's analysis by AviateQ; and even disregarding the corridor mitigation.

33. Furthermore, this approach could also accommodate loss of production, albeit that the Applicant's clear position in the draft protective provisions is that this is consequential loss. Clearly, taking a precautionary approach to analysing potential for costs means any actual costs anticipated to be reimbursed by the undertaker are expected to be less.
34. As set out in Section 1.3, The Applicant has provided Spirit Energy's solicitors with an undertaking for their costs at the full level requested. The Applicant is expecting revised protective provisions shortly (and it is hoped well in advance of the Issue Specific Hearings w/c 3 February). Both solicitors are aligned on aiming for progress to be made on agreed Protective Provisions and a side agreement in advance of Deadline 4 (18 February), the deadline in the Examination Timetable for Applicant's update to the draft DCO (which includes the Protective Provisions at Schedule 3). The Applicant still considers that commercial details (including the details of revenue and production supporting a precautionary figure for a maximum liability figure) are most appropriately captured in a side agreement. The Applicant does note, however, that this matter is capable of being dealt with wholly and comprehensively through Protective Provisions, and it is in a position to submit to the Examination this commercial evidence, if timely progress on protective provisions and a side agreement is not made in line with the Examination timetable.