

Harbour Energy Comments on Applicant's Deadline 2 Submissions

Harbour Energy notes that at DL2 the Applicant made very extensive comments on submissions made at DL1 by Spirit Energy ([REP2-030](#); [REP2-031](#); [REP2-032](#); [REP2-033](#)) and submitted a revised draft Development Consent Order (Rev03) containing modifications to the proposed Protective Provisions for the protection of Harbour Energy ([REP2-002](#)) along with an associated Spirit and Harbour Protective Provisions Plan ([REP2-007](#)). To the extent that the above submissions are material to Harbour Energy's future operations at the Calder Field, Harbour Energy wishes to bring several matters to the attention of the Examining Authority. In the interests of efficiency, rather than respond point by point to each comment made by the Applicant, Harbour Energy wishes to focus on the most material areas where agreement has yet to be reached. The absence of a comment regarding any statement made by the Applicant should not be taken to imply Harbour Energy's agreement.

Calder Remaining Production Operations

In the interests of brevity and clarity, the following discussion highlights only the annual average impact on aviation support to the Calder Field during remaining production operations. It should be noted that the impact over the winter months would be much higher.

As set out in Harbour Energy's Written Representation ([REP1-102](#)), during production operation of the Calder Field, Spirit Energy is the Offshore Safety Directive Installation and Well Operator for the Calder Field, and in such capacity is responsible for operating and maintaining the Calder Platform on behalf of Harbour Energy as the sole Calder owner. The safety case which governs operation during the production phase is held by Spirit Energy, and therefore all aviation operations are conducted by Spirit Energy under its safety case. Accordingly, Harbour Energy will rely upon Spirit Energy's assessment of changes to aviation operations in proximity to the Morecambe Generation Assets during remaining production from the Calder Field. Based on Spirit Energy's assessment of the changes to aviation operations arising from the proposed Project, Harbour Energy has independently carried out its own assessment of the likely disruption during remaining Calder production (set out in Section 2.1.3 of Harbour Energy's Written Representation). The methodology used by Harbour Energy (set out in Appendix D: Morecambe Wind Farm Impact Report of Spirit Energy's Relevant Representation ([RR-077](#))) differs slightly from, but is broadly consistent with, that used by Spirit Energy. Harbour Energy calculates that an annual average of fifty six percent (56%) of all opportunities currently available to make a pair of trips to the Calder Platform with at least 7hrs between outward and return flights (giving 5 hours available for work) would be lost. Spirit Energy, considering only historical flights; not considering limitations due to wind direction if wind turbine generators are placed less than 1.9nm; using the corresponding durations of each return trip and assuming flexibility within the day to re-schedule outward or return crew journeys, calculated that an annual average of 31% of visits to a case study NUI would be cancelled or curtailed (Slide 22 of Appendix D: Morecambe Wind Farm Impact Report, contained within Spirit Energy's Relevant Representation). Based on common data and assumptions, Spirit Energy's methodology represents a best case whilst Harbour Energy's methodology represents a reasonable worst case consistent with the requirements of the Overarching National Policy Statement for Energy (EN-1). A loss in the range of 31%-56% of visits currently possible to the Calder Platform differs markedly from the Applicant's assessment.

In Section 6.3.1 of The Applicant's Response to Spirit Energy Deadline 1 Submissions Appendix C: Helicopter Supporting Information Technical Note ([REP2-033](#)), the Applicant describes the current access to the Calder platform as “an average of 99% (94.2% VMC and 4.8% usable IMC) of daylight conditions and 98.4% (88.4% VMC and 10.0% usable IMC) of night conditions.” Setting aside the suggestion of using an alternative means of compliance (AltMoC), the Applicant acknowledges in Section 6.3.3 that “under the proposed CAA rule change, access would be restricted to day VMC only.” Using the same assumptions as the Applicant for daylight hours during Blackpool Airport normal operating hours, daylight accounts for an annual average of 87% of Blackpool Airport normal opening hours, the other 13% being night. Harbour Energy believes that the most meaningful way of presenting such information is to consider the proportion of currently available flights that would be lost following construction of the Project. Using the above figures from the Applicant, being restricted to daylight VMC would result in the loss of 17%¹ of all currently available flying opportunities. In Table 6.2 of Section 6.3.3 the Applicant shows an analysis of actual flights made to Calder over a 5-year period. A total of 1,154 flights were made of which 1,048 were conducted in daylight and under conditions suitable for visual flying. A loss of 106 flights or 9% of flights made.

Spirit Energy highlighted many differences between the Applicant's initial analysis and their own in Appendix D: Morecambe Wind Farm Impact Report of Spirit Energy's Relevant Representation. Based on documentation subsequently submitted by the Applicant and extensive technical discussion with the Applicant, Harbour Energy understand the main reasons for the substantial differences between the Applicant's assessment of impact and both Harbour Energy's and Spirit Energy's respective assessments of the likely impact of the Project to be that:

- The Applicant has assumed that daylight visual operations can be conducted irrespective of wind direction with wind turbine generators 1.5nm from a helideck. Spirit Energy's and Harbour Energy's aviation advisors, in consultation with the helicopter operator currently providing services to Spirit Energy's EIS assets (including Harbour Energy's Calder platform), have made clear that an unobstructed airspace of 1.76nm upwind of a helideck is required to effect a take-off (or missed approach) with one engine inoperative and an unobstructed airspace of 1.9nm is required downwind of a helideck to effect an approach and landing (refer to pages 14-19 of Appendix A to Spirit Energy's Written Representation ([REP1-116](#))). Unlike the Applicant, Harbour Energy's analysis considers the wind direction when determining whether or not conditions would be suitable for flying.
- Harbour Energy has considered the proportion of all currently available flying windows that would be impacted. By contrast, the Applicant has focussed only on the times of historical flights (a much smaller dataset than the full 5-year met-ocean dataset with conditions recorded every 10 minutes). This assumes that the timing of flights in the past is indicative of the timings that would be used in the future. There is no basis for such an assumption.
- Most significantly, the Applicant has considered individual flights in isolation. As explained in Sections 2.31-2.33 of Spirit Energy's Written Representation, in order to mobilise personnel to work at Calder, at least one pair of flights are required with sufficient time between them to allow work to be undertaken. Harbour Energy understands that the Applicant has undertaken some analysis recognising pairing of flights to a NUI, but no results of such analysis have been presented.

¹ Loss = 1 - Future availability / current availability = 1 - (0.87 x 94.2% + 0.13 x 0%) / (0.87 x 99% + 0.13 x 98.4%) = 17.15%

- It is also necessary to consider the conditions applicable throughout a multiple-leg flight and not consider an individual leg in isolation. As set out for example on Page 20 of Appendix D: Morecambe Wind Farm Impact Report of Spirit Energy's Relevant Representation, most flights to NUIs such as the Calder Platform are via CPC-1. This is because maintenance personnel and their equipment are based at CPC-1. As noted by Spirit Energy (Page 27 of Appendix D: Morecambe Wind Farm Impact Report of Spirit Energy's Relevant Representation) Spirit Energy considered over 10,000 multi-leg flights whereas the Applicant extracted 4,300 individual legs from these for their analysis (relating to CPC-1). The 1,154 legs to Calder analysed by the Applicant were likewise only a fraction of the total number of integrated legs that had to be flown in order to service the platform.

Harbour Energy notes that the Applicant has proposed revised protective provisions based upon the adoption by the helicopter operator servicing Calder production of an alternative means of compliance (AltMoC). Whether or not an AltMoC could be adopted is a matter that Spirit Energy and its helicopter operator would need to determine and not a decision that Harbour Energy can make during the production phase of Calder operations. Harbour Energy has however evaluated how such an AltMoC, if it could be adopted, would affect the impact of the Project upon aviation support to Calder during remaining production operations. With an AltMoC as described by the Applicant in The Applicant's Response to Spirit Energy Deadline 1 Submissions Appendix B: Helicopter Access IMC Corridor ([REP2-032](#)), Harbour Energy calculates that the annual average loss of all opportunities currently available to make a pair of trips to the Calder Platform with at least 7hrs between outward and return flights would fall from 56% to 33%.

Apart from the significant differences discussed above between the Applicant's assessment of the loss of flights due to the Project and the corresponding range of lost flights calculated by Harbour Energy and Spirit Energy, the Applicant has also questioned the extent of operational and safety impact such a loss of flights would have. Harbour Energy will rely upon Spirit Energy to respond on these matters but as an experienced operator with a good understanding of Spirit Energy's EIS operations Harbour Energy supports Spirit Energy's conclusions.

Harbour Energy notes that the Applicant has modified its drafting of the protective provisions for the protection of Harbour Energy (Part 2 of Schedule 3 of Draft Development Consent Order Rev03) to place a cap on any compensation payable (refer also to Paragraph 86, Section 8 of The Applicant's Response Spirit Energy Deadline 1 Submissions). The Applicant expresses the view (see for example Paragraph 119, Section 12 of The Applicant's Response Spirit Energy Deadline 1 Submissions) that the compensation provisions in the proposed DCO protective provisions would avoid any economic loss to Harbour Energy. Harbour Energy is of a view that the compensation terms proposed are too restrictive, would be impractical to implement, would be tax inefficient and, particularly if capped, would be inadequate given the likely scale of disruption and economic loss that would arise during remaining production operations.

Calder Decommissioning Operations

During Calder decommissioning, Harbour Energy will be responsible for aviation support to any NPIs involved in decommissioning. As set out in Section 2.2.3 of Harbour Energy's Written Representation, the details of such future aviation support have yet to be determined but a reasonable working assumption, considering the remoteness of the EIS, is that a helicopter would be brought to the EIS from another area of the UKCS for 3 days each week during the approximately 4 months of peak activity. Accordingly, unlike during production operations:

- flights would not need to be routed via CPC-1;
- it should be possible to schedule all the flights within daylight hours (even within winter);
- whilst in the EIS, the aircraft would normally be dedicated to Calder decommissioning so there would not be a requirement for multi-leg flights with the potential for knock-on effects within an integrated schedule; and
- as flights would be to an NPI with accommodation, there would be no need to consider pairs of flights.

Whereas in the foregoing discussion of Calder remaining production operations, only the annual average impact of the Project was discussed, decommissioning is likely to occur over a period of about 4 months with an equal likelihood that this could be during the winter so both the annual average impact and winter impact are presented here.

As set out in Section 2.2.3 of Harbour Energy's Written Representation, Harbour Energy has assessed the impact of the Project on such an operation and calculates, assuming use of AW169 helicopters as a reasonable worst case, that an annual average of 26% of all currently available flying opportunities would be lost, rising to a loss of 40% of currently available flying opportunities in winter.

The Applicant has not made a distinction in its analysis between flights to an NPI and flights to a NUI. Accordingly, the Applicant's assessment of the impact of the project is shown in Section 6.3.1 of The Applicant's Response to Spirit Energy Deadline 1 Submissions Appendix C: Helicopter Supporting Information Technical Note. As discussed above in the context of Calder production operations, the Applicant's statistics with respect to day and night VMC/IMC equate to a loss of 17% of all currently available flying opportunities to an NPI. The subsequent analysis of actual historic flights made to Calder in Table 6.2 of Section 6.3.3 is not relevant as the flying schedule during decommissioning would be very different. As described in Section 2.2.3 of Harbour Energy's Written Representation, there are likely to be around 2 flights per day over a 3-day period each week through the approximately 4-month decommissioning programme. Whilst there is likely to be flexibility within each day regarding the timing of the flights, it will be necessary to execute around 6 flights over a fairly inflexible 3-day period each week.

The main differences in analysis that account for the difference in numerical results are:

- The Applicant has assumed that daylight visual operations can be conducted irrespective of wind direction with wind turbine generators 1.5nm from a helideck. Spirit Energy's and Harbour Energy's aviation advisors, in consultation with the helicopter operator currently providing services to Spirit Energy's EIS assets (including Harbour Energy's Calder platform), have made clear that an unobstructed airspace of 1.76nm upwind of a helideck is required to effect a take-off (or missed approach) with one engine inoperative and an unobstructed airspace of 1.9nm is required downwind of a helideck to effect an approach and landing (refer to pages 14-19 of Appendix A to Spirit Energy's Written Representation ([REP1-116](#))). Unlike the Applicant, Harbour Energy's analysis considers the wind direction when determining whether or not conditions would be suitable for flying.
- The Applicant has considered each 10-minute data point within the met-ocean dataset and assumed that if conditions are suitable for flying, a flight would go ahead. In practice, an aircraft would not leave Blackpool Airport without a reasonable expectation, based on a weather forecast, of being able to land. Harbour Energy has assumed (refer to Section A1.2.4 of Harbour Energy's Written Representation) that unless at least 2 of the next 3 data points are suitable for flying, a flight would not go ahead.

Harbour Energy notes that the Applicant has proposed revised protective provisions based upon the adoption by the helicopter operator servicing Calder decommissioning of an alternative means of compliance (AltMoC). Harbour Energy is aware that helicopter operators are reticent to seek AltMoCs and some have a policy of not doing so. It would not be possible within the DCO examination phase to determine whether an AltMoC could be applied for and obtained as:

- Harbour Energy would need to consult with its helicopter operator, once selected, to determine whether operation under such an AltMoC would be acceptable;
- Until the CAA implements new rules in respect of flying in proximity to wind farms, such an AltMoc could not be applied for.

Harbour Energy has however evaluated how such an AltMoC, if it could be adopted, would affect the impact of the Project upon aviation support to Calder during decommissioning operations. With an AltMoC as described by the Applicant in The Applicant's Response to Spirit Energy Deadline 1 Submissions Appendix B: Helicopter Access IMC Corridor ([REP2-032](#)), Harbour Energy calculates that the annual average loss of all opportunities currently available to fly to an NPI at the Calder Field would fall from 26% to 18% and the corresponding loss in winter months would reduce from 40% to 29%.

Harbour Energy notes that the Applicant has modified its drafting of the protective provisions for the protection of Harbour Energy (Part 2 of Schedule 3 of Draft Development Consent Order Rev03) to place a cap on any compensation payable (refer also to Paragraph 86, Section 8 of The Applicant's Response Spirit Energy Deadline 1 Submissions). The Applicant expresses the view (see for example Paragraph 119, Section 12 of The Applicant's Response Spirit Energy Deadline 1 Submissions) that the compensation provisions in the proposed DCO protective provisions would avoid any economic loss to Harbour Energy. Harbour Energy is of a view that the compensation terms proposed are too restrictive, would be impractical to implement, would be tax inefficient and, particularly if capped, may be inadequate given the likely scale of disruption and economic loss that would arise during decommissioning.