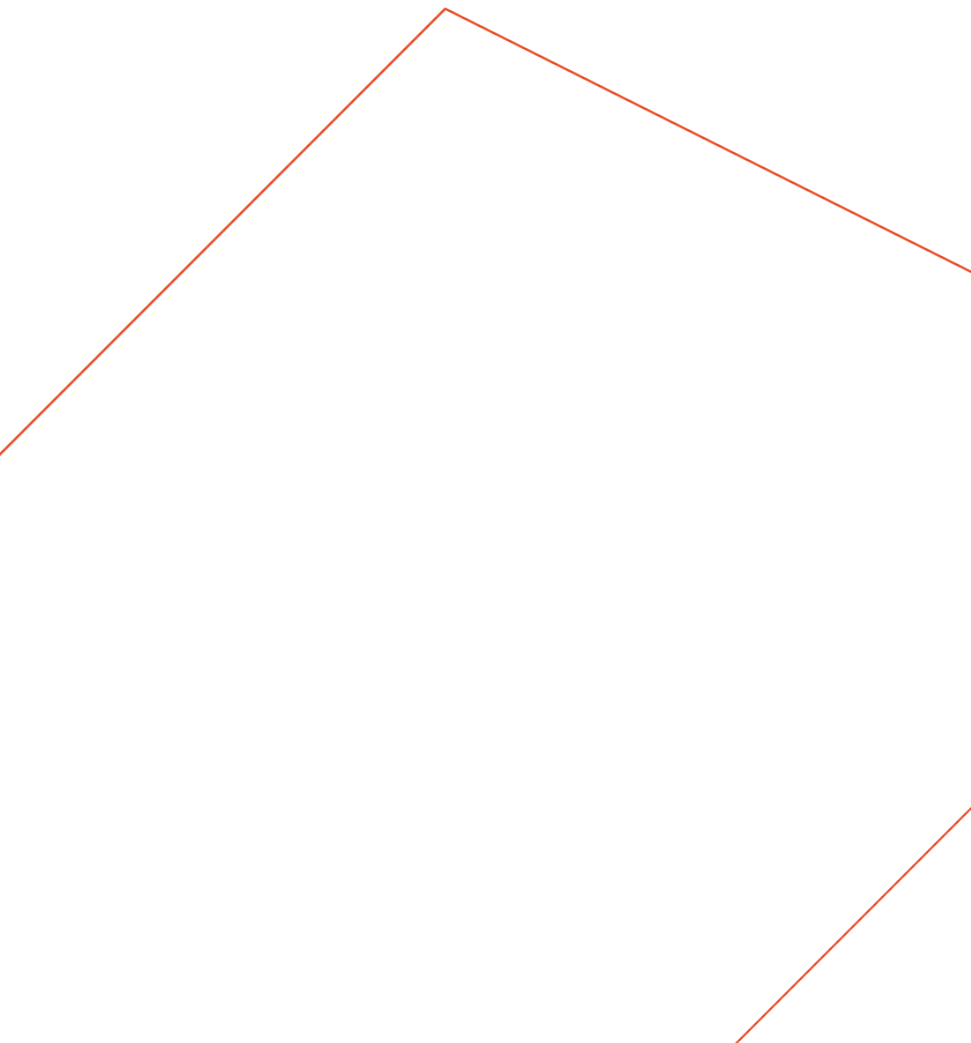




# Hornsea Project 4 DCO Examination

Deadline & Submission



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## 1.0 Introduction

Harbour Energy is the Operator, on behalf of its partners, of the Johnston Field. The field is currently producing natural gas from two subsea wellheads. The field is anticipated to come to the end of its economic life and cease production prior to or, more likely in the current economic climate, after construction of the Hornsea Project 4 windfarm. The field is located within the proposed Hornsea Project 4 windfarm array. The presence of the windfarm should not adversely affect routine production operations subject to good communication between the windfarm operator and the Operator of the Johnston Field. Certain non-routine operations requiring the mobilisation of a drilling rig to any of the Johnston wells would however be adversely affected by the windfarm unless adequate space is provided to:

- Enable the rig and supporting vessels to gain access to the wellheads; and
- Enable helicopters to fly to and from the rig – typically one or more times per day.

The main time when it is known that rigs will need to access the wells is during decommissioning of the wells and subsea facilities. Decommissioning would occur at some time after cessation of production and would require a rig to be at the wellheads for 6-9 months. Decommissioning requires considerable planning and, in order to exploit synergies, is typically undertaken as part of a programme involving the decommissioning of wells on other fields. Accordingly, the timing of decommissioning may not be entirely within Harbour Energy's control. Furthermore, even if the field ceases production prior to construction of the Hornsea Project 4 windfarm, it is highly likely that decommissioning would occur after construction has commenced or completed.

During early discussions with the Applicant, and indeed in Harbour Energy's Deadline 2 submission (Rep2-080) Harbour Energy's focus was on the requirements for Johnston Field decommissioning. Given current UK government pressure on gas producers to maintain and enhance production to ensure security of gas supply for the UK, it is possible that a rig may be needed prior to decommissioning in order to undertake well interventions to restore or enhance production. Such interventions would typically require a rig at the wellhead for 1-3 months. The requirements for rig access and helicopter flights to and from the rig would be the same as during decommissioning.

Whilst some offshore facilities can be supported without use of helicopters, the types of rig required for the Johnston field require the use of helicopters. In addition to changing crews, these helicopters are used to carry essential specialist personnel and smaller items of equipment. Delays in these reaching the rig would delay the operation and thus increase the time the rig and associated support vessels are required.

### 1.1 Status of agreement with the Applicant

Harbour Energy has actively and constructively engaged with the Applicant prior to and throughout the DCO process and has been confident that arrangements would be agreed that would enable their operations to coexist. As signalled at Deadline 7 (Rep7-100), and despite continuing efforts by Harbour Energy and the Applicant, agreement will not be reached prior to the close of the Examination phase.

### 1.2 Protective provisions

Harbour Energy presented its proposed Protective Provisions at Deadline 6 (Rep6-049). The purpose of these Protective Provisions was to limit the impact of the proposed windfarm development upon rig operations at the Johnston Field to acceptable levels. The Applicant's Deadline 7 comments on these proposed Protective Provisions (REP7-089) will be addressed in Section 2 of this document.

The Applicant presented Protective Provisions at Deadline 6 (REP6-040) which were revised at Deadline 7 (REP7-040 Schedule 1, Part 13). Even these revised proposed Protective Provisions would make it impossible for Johnstone Field operations to coexist with the proposed windfarm. This will be explained in greater depth in Section 2 of this document.

In the spirit of seeking successful coexistence, and recognising the potential adverse impact of layout restrictions upon the generation efficiency of the proposed windfarm, Harbour Energy could accept Protective Provisions that have a lesser impact upon the Applicant's proposed operations, providing that:

- It would be possible for Johnstone Field Operations to coexist with the proposed windfarm; and
- The Applicant provide Harbour Energy with appropriate compensation for any additional costs and delays that it would suffer to its Johnstone Field operations.

The delays (and hence increased costs) that would arise from any such Protective Provisions are set out in Section 2 of this document.

The concept of marine access for a rig to the Johnstone wellheads has been accepted by the Applicant and the marine corridor as proposed in both the Applicant's proposed Protective Provisions (REP7-040) and Harbour Energy's proposed Protective Provisions (REP6-049) are acceptable and is thus not discussed further in this submission.

## 2.0 Helicopter space requirements

### 2.1 Scope

The scope considered in this section is limited to helicopters used to support normal operations. These are governed by the regulations covering commercial air transportation (CAT). Separate rules govern search and rescue (SAR) aircraft. Harbour Energy is relying on the discussions between the Applicant and the Marine Coastguard Authority (MCA) to ensure that, in the event of need, its operations can still be supported by SAR services.

For the purposes of clarity and brevity, the material presented in this section is a summary of the pertinent information and does not seek to be entirely comprehensive on what is a very complex and specialist subject.

The analysis is based upon the use of AW139 helicopters with a full payload. These are the aircraft currently in operation in support of oil & gas operations in the UK Southern North Sea and are chosen for their carrying capacity, overall performance and safety.

### 2.2 Data and analysis

The calculations in this section use met-ocean data from the Ravenspurn North Field recorded at 10 minute intervals from 1 Jan 2013 to 10 Feb 2019. This dataset has been shared with the Applicant and was used by them in preparing their Helicopter Access Report: (A5.11.1 Environmental Statement Volume 5 Annex 11.1 Offshore Installation Interfaces Part 2) (APP-087). The met-ocean data analysis has been conducted by testing whether the conditions for flying are met during each 10 minute interval and counting the total time available.

For conciseness results are presented as annual averages but it should be noted that significant seasonal variations occur.

## 2.3 Legal and Regulatory Framework

Commercial air transportation using helicopters is governed in the UK by the UK Civil Aviation Authority (CAA). The UK is a member of the International Civil Aviation Organization (ICAO) and its rules reflect internationally agreed standards.

Each helicopter operator in the UK must be licenced to operate by the CAA. As part of this licencing process, operators must hold a valid Air Operator Certificate (AOC). In order to obtain this AOC, operators must maintain and then comply with internal procedures governing their operations. These procedures will differ from one helicopter operator to another but have the same purpose, namely to ensure the safety of passengers and air crew.

## 2.4 Current Operations in Support of Offshore Oil & Gas Installations

Flights to offshore installations can only be conducted in conditions where the windspeed is less than 60knots and the sea state has a significant wave height of less than 6m. There are two broad categories of flying:

- under visual flight rules (VFR); or
- under instrument flight rules (IFR).

Under visual flight rules, the pilots rely on what they can see in order to ensure the aircraft's separation from obstacles. Under instrument flight rules, pilots are assisted by instruments such as airborne radar. Instrument flight rules permit flying in conditions of low cloud and/or poorer visibility. Current offshore operations to the area of the Johnston field may be conducted under either VFR or IFR.

Apart from restrictions due to any obstacles on the rig (e.g. the drilling derrick) and nearby vessels, helicopters may currently take-off and land on an offshore installation in any direction. Landing and take-off need to be conducted into the wind. This thus translates into flying being possible under a wide range of wind directions.

Assuming that flights would normally only be conducted between 06:00 and 22:00, flights to a facility on the Johnston field can currently occur an average of 335 days per year.

## 2.5 Impact of Windfarms on helicopter transportation

### 2.5.1 Met-ocean limitations

Flights within a windfarm must be conducted under visual flight rules. The windfarm thus reduces the availability of permitted flying conditions to facilities within the windfarm relative to the current situation set out in Section 2.4. This limitation alone reduces flying windows to 238 days per year (a loss of 97 days per year relative to the current situation with no windfarm).

Harbour Energy has independently approached two UK helicopter operators serving its operations in the UK Southern North Sea. Both of these operators, as part of the procedures through which they have gained their Air Operator Certificate (see Section 2.3), place additional requirements for VFR flights within a windfarm. These additional restrictions (better visibility, higher cloudbase and flights restricted to daylight) result in the loss of a further 14 days per year.

The presence of the windfarm, assuming adequate space for helicopter access (see Section 2.5.2), would restrict helicopter operations to 224 days per year. The loss of 111 days per year relative to the current situation with no windfarm cannot realistically be described, as the Applicant seeks to do in their Deadline 7 submission (REP7-089) as “a minor adverse impact” and “a logistical inconvenience” (para. 3.1.1.4). Rig operations are exceedingly expensive and the costs of extending the rig programme as a result of the delays caused by these lost flights would be of the order of several million pounds.

### 2.5.2 Space constraints

The Applicant maintains that its proposed Protective Provisions would allow sufficient space for helicopters to transit to, take-off from and land at the Johnston well locations compliant with CAA regulations. Both helicopter operators approached by Harbour Energy have advised that they would not be able to operate to the Johnston wellheads were the wind turbine generators placed as close as the Applicants Protective Provisions would permit. Their procedures (upon which they have each been granted their respective Air Operator Certificate) are based upon greater separation from obstructions and require a stabilised (i.e. straight line) final approach path to their landing. Whilst there are slight differences between the two operators, both could only operate if:

- any aviation corridor through the windfarm to the wellheads were at least 1.4km wide; and
- there were a radius, clear of obstructions (including rotor tips), of not less than 1.6km around each wellhead

Whilst it may be possible to find a helicopter operator who takes a different view, the fact that two of the most widely used helicopter operators serving the offshore industry in the UK Southern North Sea have independently advised that they would each be unable to fly to the Johnston Field if the Hornsea Project 4 windfarm array were constructed in accordance with the Applicant’s proposed Protective Provisions, must be taken as highly significant.

## 3.0 Legal and policy considerations

Harbour Energy notes the Applicant’s comments under the heading Legal and policy position (section 4) in their Deadline 7 submission (Rep7-089). Harbour Energy has a legal duty to maximise the economic recovery of fossil fuels from its licences in the UK. In line with the Secretary of State’s desire for ongoing investment in home-grown UK energy to protect Britain, gas production from fields – including the Johnston field, play a vital part in the UK’s energy security to offset cessation of gas imports from Russia.

Harbour Energy is mindful of the twin obligation of assisting the Secretary of State in meeting the UK’s Net Zero targets, and also the importance of industry continuing to deliver on commitments under the North Sea Transition Deals. The Applicant’s statements imply that renewable energy can replace fossil fuels and suggest that the Examining Authority prioritise the needs of wind generation over gas extraction. The reality is that, until such time as there are more effective means of electricity storage, fossil fuels are required to back up renewable electricity during periods of low generation so coexistence of the two industries is required.

## 4.0 Conclusions

In order to ensure security of supply for the UK and to transition to Net Zero, the UK needs the renewable industry and the oil and gas industry to coexist. The Applicant’s proposed Protective Provisions (REP7-040) would preclude at least two of the UK’s most widely used helicopter operators (both used by Harbour Energy)

from being able to fly to a rig at either of the Johnston wellheads and would thus not permit coexistence and would furthermore prevent the Johnston Field owners from fulfilling their legal obligation to maximise economic recovery from the field.

Harbour Energy re-iterates that its existing proposed Protective Provisions (a 3nm radius around each wellhead in addition to the marine corridor). Were the Protective Provisions amended to permit sufficient space (1.6km obstacle free radius around each wellhead and 1.4km wide aviation corridors to and from each wellhead, then, subject to the Applicant compensating Harbour Energy for delays to its rig programmes arising from flight restrictions resulting from the presence of the windfarm, such amended Protective Provisions could be acceptable to Harbour Energy.