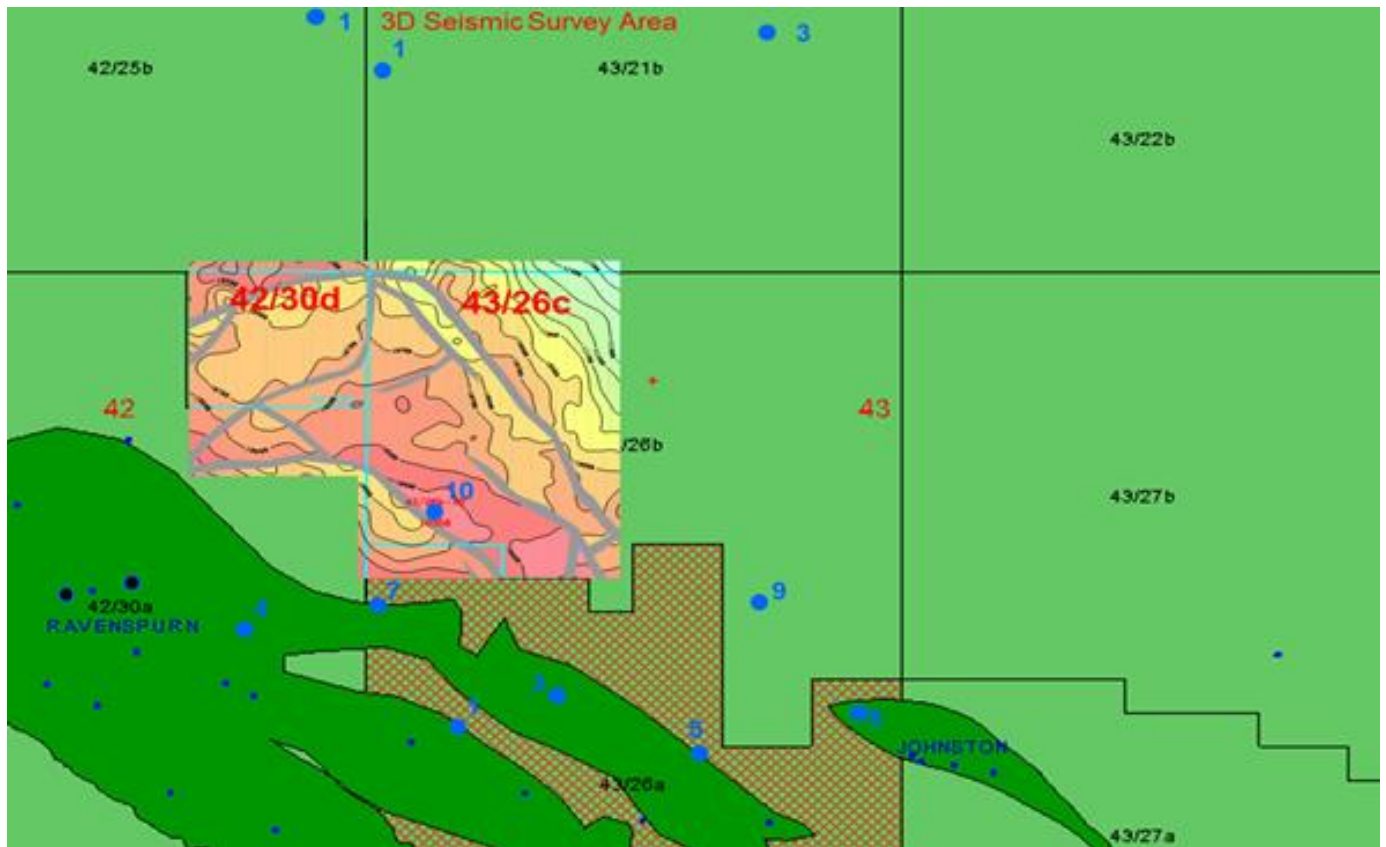




Information Submission to BEIS for Hornsea Project Four

Bridge Petroleum Limited

KUMATAGE DEVELOPMENT



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Abbreviations

Abbreviation	Meaning
BEIS	Business, Energy & Industrial Strategy
DCO	Development Consent Order
DECC	Department of Energy and Climate Change
NSTA	North Sea Transition Authority
OGA	Oil and Gas Authority
UKCS	United Kingdom Continental Shelf



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1 Introduction

Ørsted Hornsea Project Four Limited (“the Applicant”) has applied for an Order granting Development Consent for the proposed Hornsea Project Four Offshore Wind Farm (“Hornsea Project Four”). Following the completion of the Examination on 22 August 2022, the Examining Authority submitted a Report and Recommendation in respect of its findings and conclusions on the above application to the Secretary of State on 22 November 2022. In accordance with section 107 of the Planning Act 2008, the Secretary of State has three months to determine the application.

The discovered Kumatage natural gas field and proposed production facilities lie within the bounds of the Hornsea Project Four array. Bridge Petroleum 2 Limited (“Bridge”) as sole equity holder (100%) and Operator of Seaward Production Licence P2426, comprising UKCS blocks 42/30d and 43/26c, for the discovered Kumatage natural gas field, has been in discussions with the Applicant over protective provisions. A section of the proposed Hornsea Four offshore wind turbine and supporting infrastructure array will be located within the 43/26c block area.

Bridge plans to develop the Kumatage gas reservoir either through a platform or subsea development and associated pipeline(s) and umbilical(s) (if required) to tie into existing gas export infrastructure.

The Kumatage development area may also include commercial reserves in a North Eastern terrace of the 43/26c block area, referred to as Kumatage Prospect 2. Prospect 2 commerciality will be assessed during the Kumatage development phase and may be accessed from a well drilled from the Kumatage development drill centre or via another subsea well in the 43/26c block.

Bridge and Ørsted have held discussions with the aim of ensuring co-existence of Kumatage and Hornsea Project Four facilities and operations. Bridge is supportive of Hornsea Project Four but allowance must be included within the Hornsea Project Four design, such that Hornsea Project Four does not hinder, compromise or adversely affect the Kumatage licensee’s future activities in compliance with all relevant legislation, including, but not limited to; survey (including seismic data acquisition), drilling, installation, production operations and decommissioning activities, nor, more generally, the exercise or enjoyment of any of the rights and benefits or the performance of any of the obligations under the licence.

The Secretary of State for Business, Energy & Industrial Strategy (“the Secretary of State”) has asked Bridge and others to provide updates or information as appropriate. Specifically responses to the following points are sought:

- A. The Secretary of State understands that at the close of the Examination, there remained disagreement between the Applicant and Bridge as to the protective provisions proposed by the Applicant in the draft DCO for the benefit of Bridge.
- B. The Applicant and Bridge are asked to provide an update as to whether protective provisions are now agreed between them or what matters remain outstanding. If agreement has not been reached Bridge is asked to provide alternative protective provisions which would address any remaining concerns.
- C. In particular, Bridge is asked to submit, with reasons, a timeframe that it would find acceptable for committing to the proposed location of its pipeline.



2 The Kumatage Natural Gas Field

The Kumatage natural gas field is located 7 km North East of the, Perenco operated, Ravenspurn producing gas field. It was discovered by well 43/26b-10, drilled in 1998 by BHP. The discovery well penetrated a fully gas bearing Lower Lemn sandstone interval of 166 feet gross. The well flowed gas on test but at sub-commercial rates.

Figure 2-1 shows the Kumatage location relative to nearby existing gas production infrastructure (source: NSTA Interactive Map and Tools).

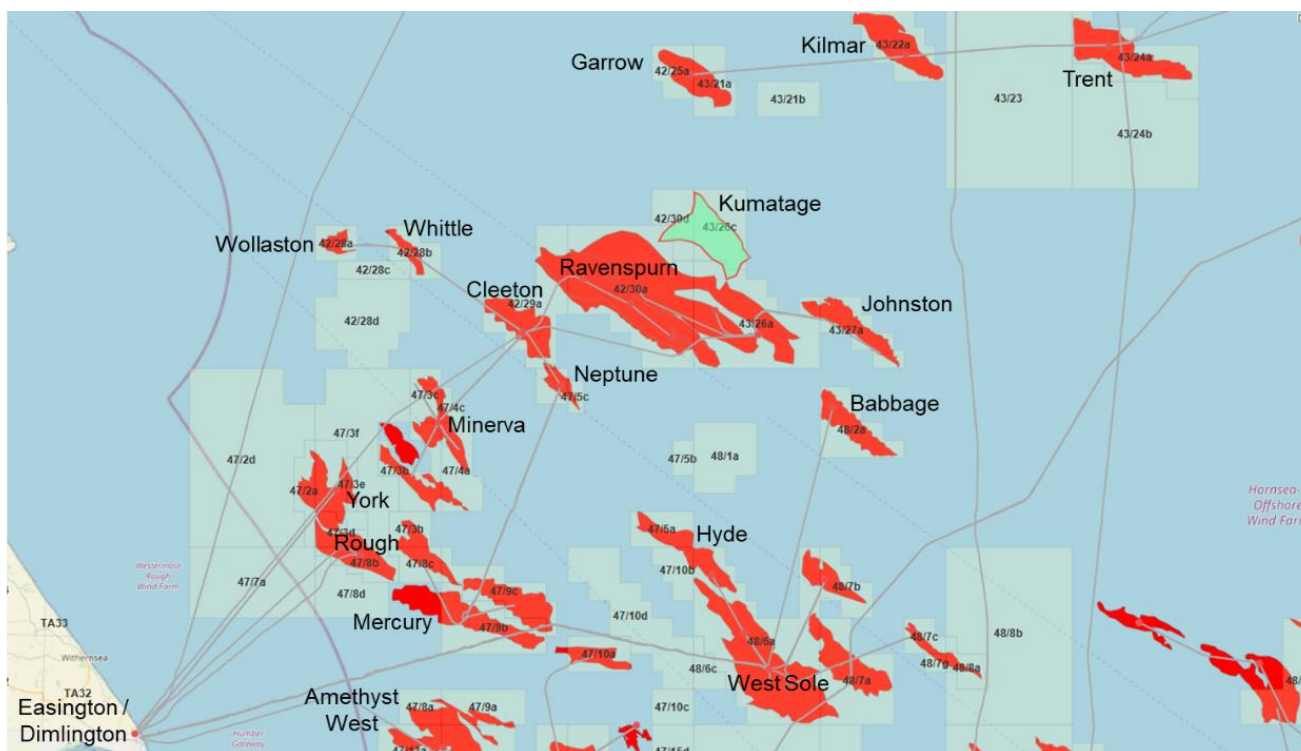


Figure 2-1 Kumatage Natural Gas Field Location

Bridge was awarded licence P2426 (100% working interest and Operatorship for the Kumatage Development (UKCS Blocks 42/30d All and 43/26c All) in the 30th Offshore Licensing Round, with a licence start date of 1st October 2018.

Work commitments on licence P2426 for phase A were completed in advance of the Phase A end date of 30th September 2022, identifying the recoverable reserves range of 157 BCF (P90) – 395 BCF (P50) – 486 BCF (P10). Bridge's engineering analysis has identified viable development concepts over this entire production range, however to prove up the gas in place volumes an appraisal well will be required.

Seismic re-processing and the use of some advanced analysis techniques (which would be additional to the Phase A commitments) have been identified as a means to improve the visualization of the gas in place and improve confidence to move forward with the appraisal well; however, these techniques require further investment and 9 months of analysis to complete for which Bridge has sought a partner to share the costs.

Licence P2426 received two one year extensions in 2020 and 2021 from the Oil and Gas Authority (OGA) recognizing the impact of the global pandemic on progressing the work commitments and also recognizing the licensee's wish to attract partners to fund the appraisal well and subsequently move into the development phase. Whilst a number of companies had shown an interest to farming into the licence, they were discouraged by the depressed gas market price at the time and the near term licence back-stop date was often quoted as a high risk factor, with regard to time to complete the seismic re-processing and advanced analysis described above.



In discussions with OGA's successor, the North Sea Transition Authority (NSTA), prior to the P2426 licence end date, Bridge had an option to apply for a further 12 month licence extension or, given a 33rd Licensing Round was being discussed, the option to reset the timeline by relinquishing and re-applying for the licence blocks. Bridge decided that given the Phase A work commitments have been fully completed and accepted by the NSTA, the best approach would be to relinquish and reapply for the licence blocks, thus removing the immediate time pressures for seismic reprocessing in advance of the appraisal well investment decision. Hornsea Project Four were advised of this approach to the management of the Kumatage licence early in October 2022 and advised that it remains Bridge's intention to develop the Kumatage field as already shared with them.

Both the relinquishment and (re)application for the blocks has now been made with the 33rd Licensing Round application submitted on 12th January 2022. As gas market prices strengthened in 2022 the estimated economic return of the Kumatage development has also improved and there has been renewed interest, from prospective partner companies, in advance of the 33rd Licensing Round application.



3 Kumatage and Hornsea Project Four Co-Developments

Figure 3-1 shows the areas of interest for both the Kumatage development and Hornsea Project Four. Hornsea Project Four Offshore Wind Array is planning to install offshore wind infrastructure within the Kumatage licence area.

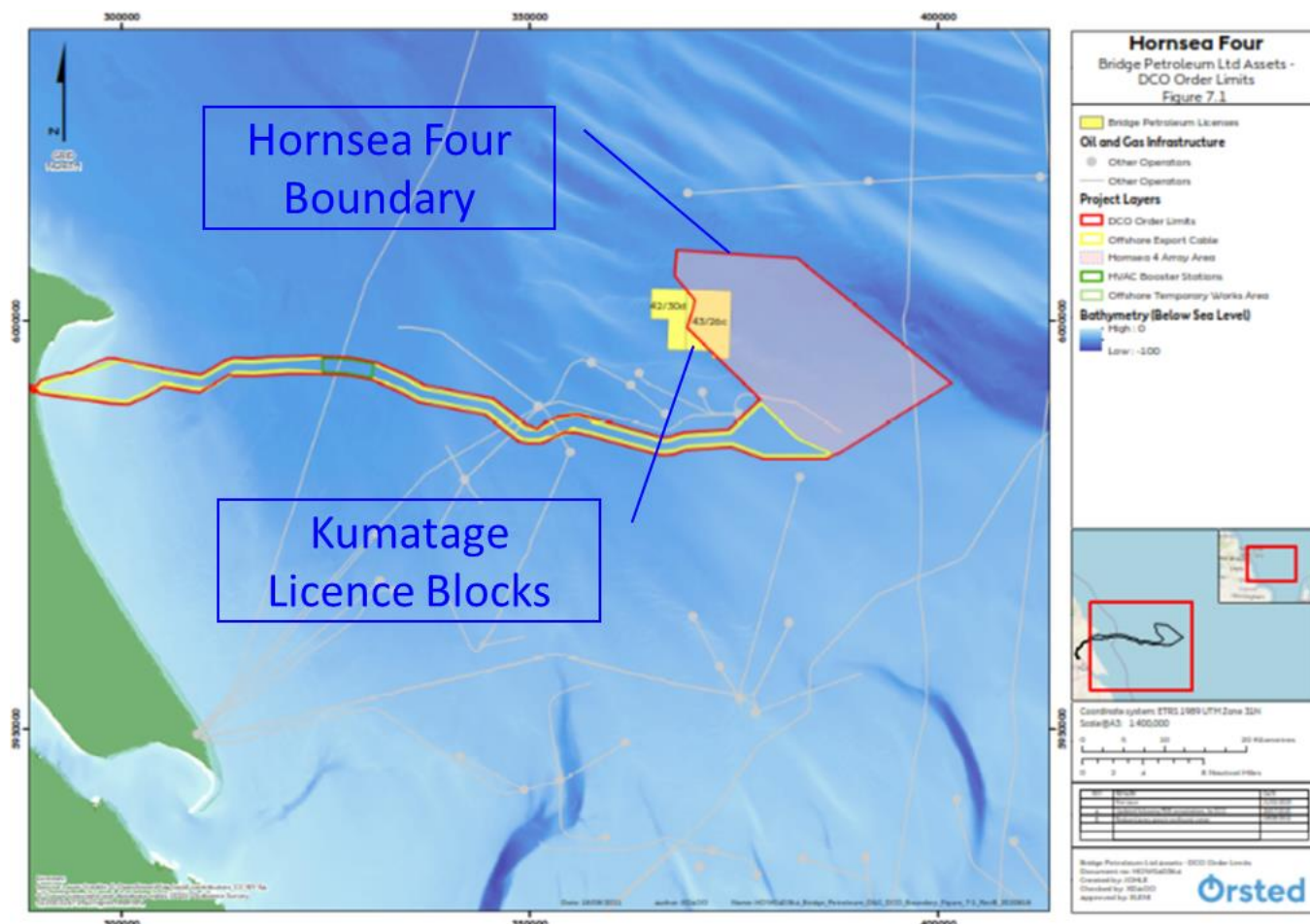


Figure 3-1 Kumatage and Hornsea Project Four Areas of Interest

Figure 3-2 gives further detail on the proposed Kumatage appraisal and production wells’ drill centre locations and well paths and these are presented relative to the Hornsea Project Four boundaries in the Kumatage vicinity.

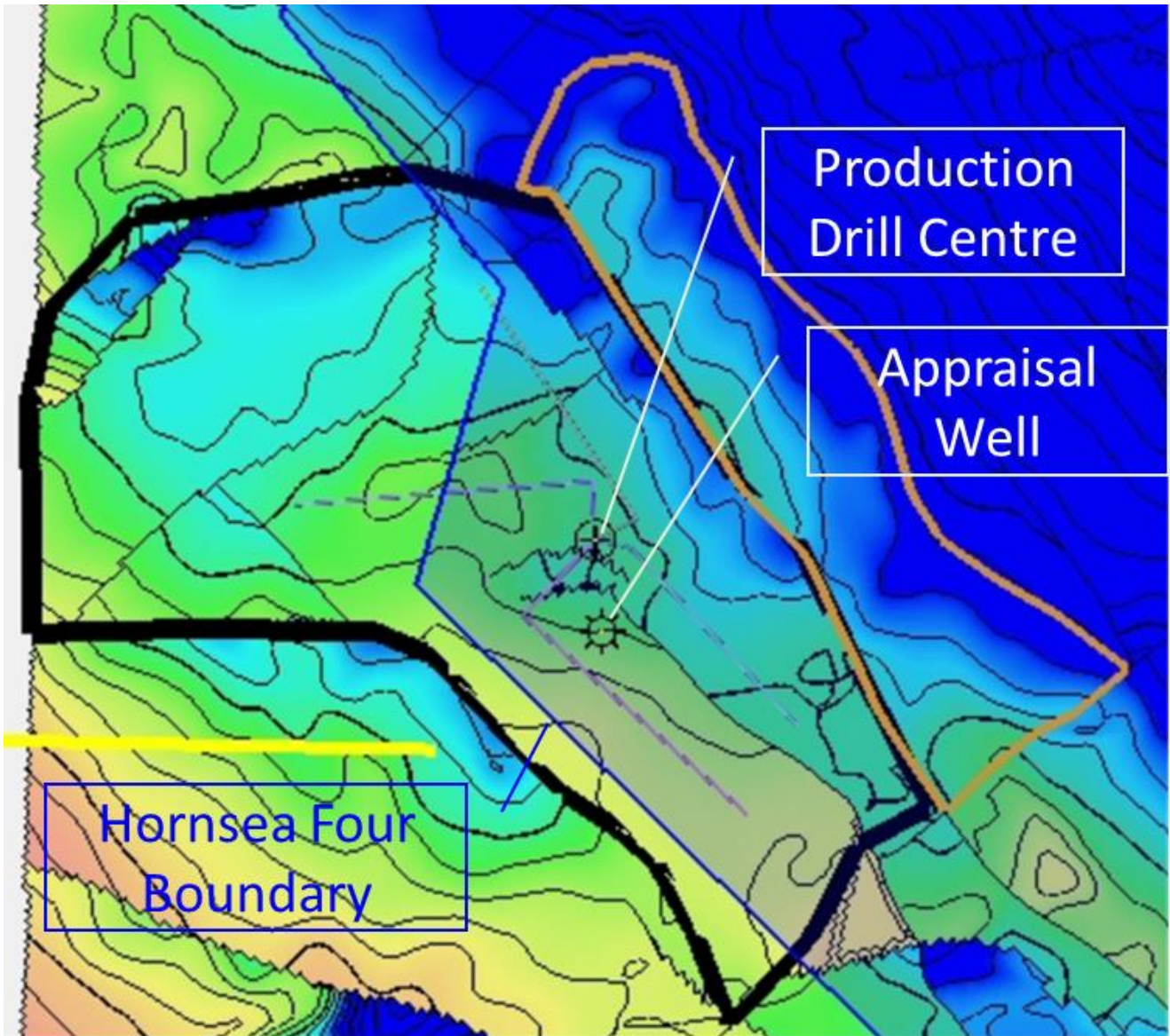


Figure 3-2 Identified favoured locations for Kumatage Facilities Relative to Hornsea Project Four Boundaries



4 Protective Provisions

4.1 Status of Agreement on Protective Provisions

In response to the BEIS request for response dated 16th December 2022, Bridge can confirm that there remained disagreement between the Applicant and Bridge as to the protective provisions proposed by the Applicant in the draft DCO for the benefit of Bridge.

4.2 Applicant's Proposed Protective Provisions

With reference to Figure 4-1, protected areas have been proposed by the Applicant with respect to:

1. a 600m radius on the proposed appraisal and development wells' top hole locations,
2. one of two 400m wide proposed pipeline corridors:
 - a. running SE to NW from the production drill centre
 - b. running E to W from the production drill centre

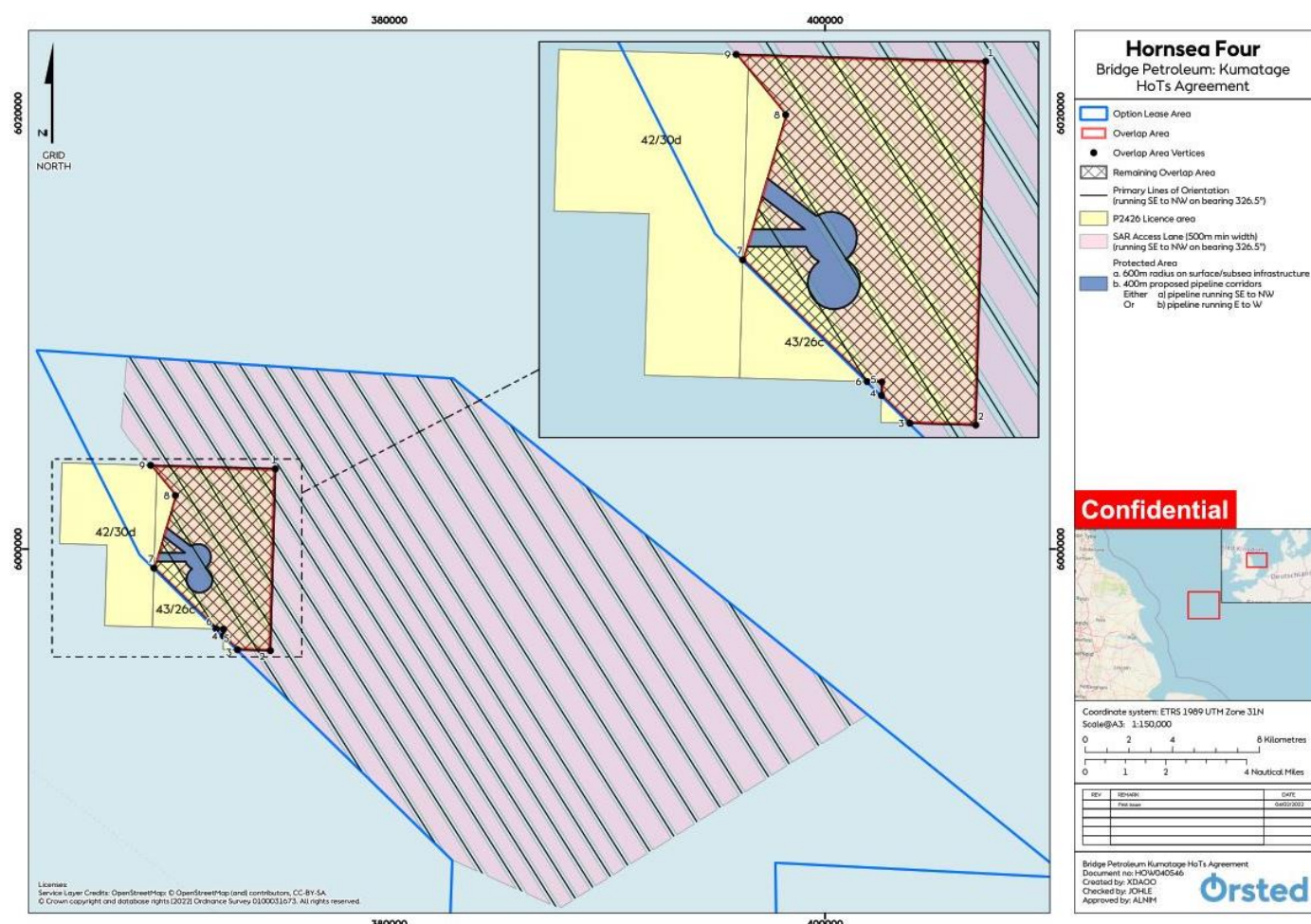


Figure 4-1 Hornsea Project Four's Proposed Protective Provisions for the Kumatage Development



4.3 Kumatage Development Access Requirements

Different access requirements will be necessary for the different Kumatage development phases:

- Pre-Installation and Pre-Drilling Surveys
- Drilling
- Installation, including Heavy Lift Vessel operations
- Normal operations
- Annual subsea inspection surveys
- Jack-up rig intervention work for work-overs during the operational phase and for well abandonment activities
- Facilities decommissioning

With regard to normal operations, it is Bridge's expectation that the Kumatage production facility will be normally unmanned and routine and non-routine personnel operations will be performed through a "walk to work" system. During normal operations the proposed protected area would appear to be acceptable, however the other, more transient, access requirements will require a greater defined access area:

- Survey operations require space for both vessels and for the survey streamers which they tow behind,
- Access is required to tow drill rigs in to place (using three tugs) be it for initial well drilling, well interventions or well abandonment. Anchor handling vessels will be required to place anchors and drill rig anchor patterns will be around 750m – 1000m radius,
- Jack-up drill rigs will have their own safety zone which will have to be incorporated within the overall Kumatage protected area,
- Access is required for Heavy Lift Vessel and barge passage for installation and decommissioning operations. Anchor handling vessels will be required to place anchors and Heavy Lift Vessel anchor patterns will be around 1000m radius,
- Adequate access areas must be provided for drilling rigs and Heavy Lift Vessels passage and mooring to avoid the dangers of potential maritime collisions with fixed infrastructure
- Helicopter access will be necessary for rig operations. In addition to changing crews, 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.

With regard to helicopter operations, it is Bridge's understanding that all of the North Sea helicopter operators' procedures are based upon operations only if:

- any aviation corridor through the windfarm to the rig at the drill centre was at least 1.4km wide; and
- there was a radius, clear of obstructions (including rotor tips), of not less than 1.6km around each rig / drill centre.

Additionally, the specification of the Kumatage drill centres' locations (appraisal well and development wells) cannot be confirmed as these locations are subject to survey findings.



4.4 Precedents for Offshore Co-Developments of Gas Extraction and Wind Turbine Infrastructure

Bridge are aware that the then-proposed IOG operated Blythe Gas Facility was considered with respect to the 6th July 2012 DECC granting of consents to the construction and operation by Dudgeon Offshore Wind Limited (“the Company”)^[1].

In granting consent it was stipulated that to “protect the interests of the owners of the proposed Blythe Facility” “no turbine shall be erected closer than 1 nautical mile to the proposed location of the Blythe Gas Facility at coordinate location X m: 387035 Y m: 5899712 UTM Zone 31; Lat: 53 14’ 8.05909N Long: 1 27’ 26.4555 E without the written approval of the Secretary of State following consultation by him with the Facility owners.”

Subsequent to the granting of consent, the Blythe Gas Facility was installed at coordinate location Lat: 53 14’ 29.06N Long: 1 26’ 46.26 E, a distance of around 1 km East from the stated proposed location. Bridge is unaware of the reasons for the change in Blythe facility location, however this example demonstrates how the siting of oil and gas exploitation equipment can be subject to change through the engineering design process.

Given the requirements described above in terms of: access for large vessels and tugs; survey vessels and streamers; jack-up rig and Heavy Lift Vessel anchor patterns; uncertainty relating to the survey findings with regard to confirming suitable seabed locations for the appraisal well and production facilities; Bridge believe it is a reasonable request to follow the precedent used in relation to the Blythe Gas Facility and Dudgeon Offshore Wind farm and protect the interests of the owners of the proposed Kumatage facility by stipulating that no turbine shall be erected closer than:

- 1 nautical mile to the proposed location of the Kumatage production facility at coordinate location X m: 371314 Y m: 5999837 UTM Zone 31; Lat: 54 07’ 49.9008N Long: 1 01’ 49.9008E.
- 1 nautical mile to the proposed location of the Kumatage appraisal well at coordinate location X m: 371387 Y m: 5998808 UTM Zone 31; Lat: 54 07’ 16.6908N Long: 1 00’ 47.54916E.

Superimposing 1 nautical mile radius protected areas around the proposed Kumatage production facility location and appraisal well location is shown in Figure 4-2:

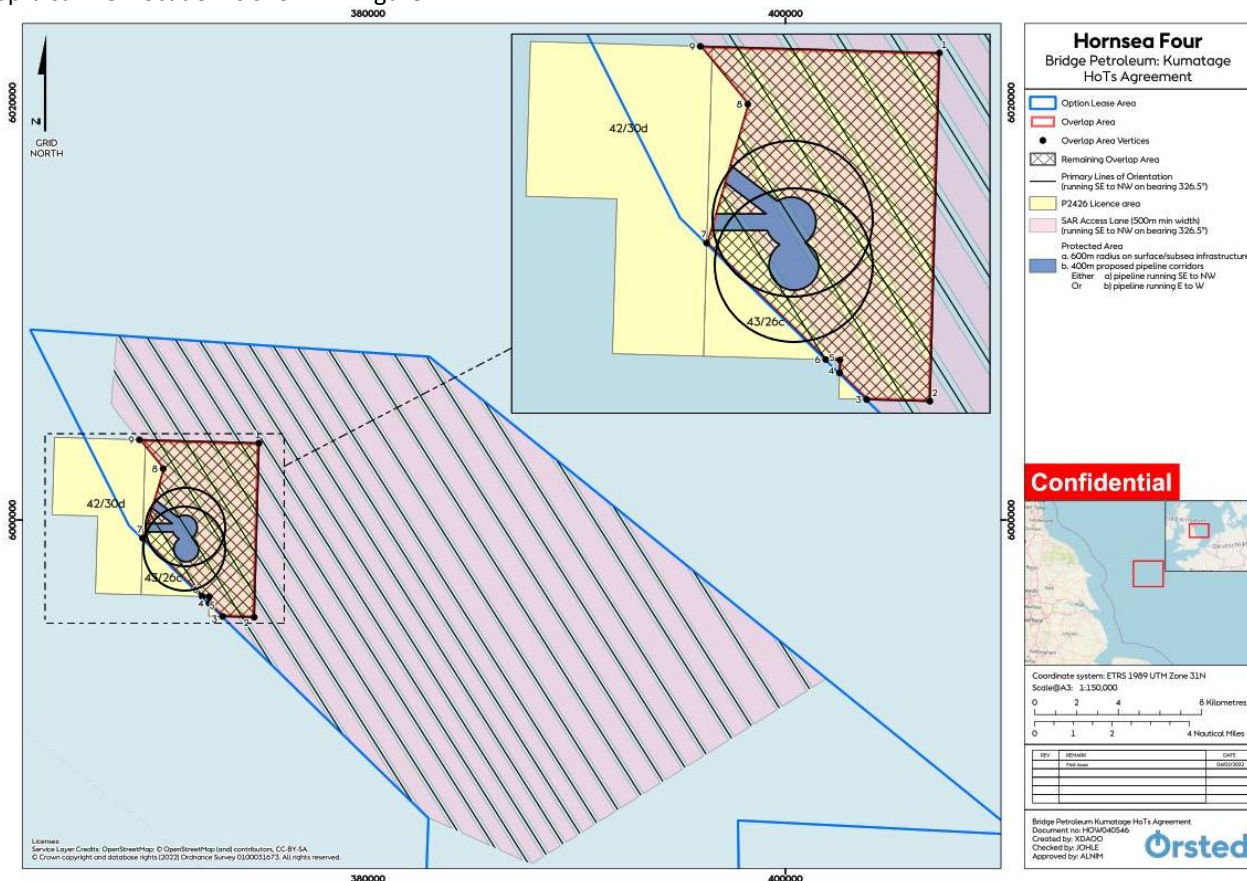


Figure 4-2 Kumatage Appraisal Well and Production Facility with 1 Nautical Mile Radii Protected Areas



Provision of 1 nautical mile (1.85 km) radii protected areas around the drill centres will resolve a number of issues with regard to rig and Heavy Lift vessel movements, helicopter operations and will essentially allow full access to the West and South of the Kumatage facilities. Likely gas export pipeline headings from the Kumatage production facility to production hosts in the area, such as Ravenspurn, Cleeton, Babbage, York, Abbey, Tolmount, will also be to the West or South of the facility and would be routed within the protected area and would not then cross Hornsea Project Four infrastructure. The timeframe for installation of the pipeline should not, therefore, affect Hornsea Project Four.

5 Development Timeline

Development timeline for Kumatage is now anticipated as follows:

1. Further sub-surface work programme completion and firming up of gas in place range to commit to appraisal well Q2 2024
2. Concept design and infrastructure tie-in commercial agreements will be progressed following sub-surface work programme completion and completed by commitment to develop in Q2 2025.
3. Appraisal well drilled end Q1 2025 and revision of gas in place range to commit to development.
4. Front End Engineering Design Q2 – Q3 2025
5. Project Final Investment Decision (FID) Q4 2025
6. First Gas Q3 2027

6 Conclusions

Whilst the Kumatage development may be able to execute the production phase on a walk to work basis, it is our opinion that aviation support will be required during drilling and decommissioning activities.

Space requirements must also consider the requirement to tow a rig into the field and bring in a heavy lift vessel and give allowance for their anchor requirements.

Bridge believes the space offered to the Kumatage project in Ørsted's proposed protective provisions is inadequate for both marine and aviation operations.

Bridge believe a 1 nautical mile protected area is required around each of the Kumatage proposed drill centres (appraisal and development) which will give adequate provision for all Kumatage marine and aviation operations through development life and will give greater freedom to the Kumatage owners to select a gas export pipeline routing whilst not affecting Hornsea Project Four decision making. Bridge are aware of previous precedent set for this extent of protected area with regard to the Blythe Gas Facility and the 6th July 2012 DECC granting of consents to the construction and operation by Dudgeon Offshore Wind Limited^[1].

7 References

- [1] Department of Energy and Climate Change, "Electricity Act 1989 (Section 36), Construction and Operation of a Wind Farm Generating Station Known as Dudgeon off the Coast of Norfolk", 12.04.09.04/227C, 6th July 2012.