Offshore Petroleum Regulator
for Environment & Decommissioning

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Department for Business, Energy & Industrial Strategy

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Dear [redacted]

THE OFFSHORE OIL AND GAS EXPLORATION, PRODUCTION, UNLOADING AND STORAGE (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2020

NOTICE UNDER REGULATION 12(1)

Abigail Field Development

The Offshore Petroleum Regulator for Environment and Decommissioning ("OPRED") acting on behalf of the Secretary of State for Business, Energy and Industrial Strategy ("the Secretary of State") is currently considering the Environmental Statement ("ES") in relation to the above project. Ithaca Energy (UK) Limited ("Ithaca Energy") is hereby required to provide further information in relation to the following:

1. Page 10 – Section 3.3. It is noted that section 3 discusses the concept options screening process, and that a high-level screening exercise was undertaken. The ES states that the selected option has the 'smallest environmental impact of the options considered'. However, there is no mention of a comparison of the environmental effects of each option. Please clarify what the outcome of the process was for comparing the environmental effects of each option.

2. Page 14 – Section 3.4.2. OPRED is aware of studies and projects on FPF-1 (for example, 'FPF-1 Emission Reduction Opportunities') that will reduce CO2 emission sources and look for opportunities for reduction. Ithaca Energy should comment on these initiatives for discussion as part of the application, including how the development considers the North Sea Transition Deal and the UK Government's commitment to Net Zero, to highlight the efforts being made to reduce emissions.

3. Page 16 – Section 3.5. The estimated gas in place for the Andrew reservoir is estimated to be 22.9 Bscf (mid case). Table 7 of the FDP shows the estimated Andrew reservoir (mid case) of 17.82 Bscf. Please clarify which data is correct.

4. Page 18 Section 3.5.1. OPRED understands that the configuration of hydrocyclones on FPF-1 allows for operational flexibility for each of the fields, and that liners in each

pod can be adjusted to match the produced water (PW) volumes. With such a significant increase in PW when Abigail comes online, what additional procedures and processes have been put in place to ensure that there are adequate liners in each pod to cope with the increase in additional volume ahead of the increase?

5. Page 20 - Figure 3.5. Can Ithaca Energy clarify what the nomenclature should be on the y axis? It is currently in tonnes/day and should align with the text within the paragraphs discussing Produced Water, which is in m^3/day.

6. Page 20 – Figure 3.5. It is highlighted that Produced Water (PW) will peak in 2024 (mid case) and 2027 (high case) (page 46). However, from both cases in Figure 3.5, the PW is doubling in volume from when Abigail comes online until the end of Abigail's field life (taking average volume of PW from 2020 figures of around 240 m^3/day). Can Ithaca Energy guarantee that the PW system will be able to a) cope with the additional volume of PW in the system, and b) be able to meet with the stated OIC limit of 20 mg/l with such high volumes of PW? Please note, Ithaca Energy should not solely rely on the increased use of chemicals to be able to meet the OIW limit.

7. Page 23 – Section 3.7.1. It is noted that there will be approx. 30 days in-between the drilling rig coming off location, and the installation of the manifold. Will there be a guard vessel used for the 30 days, as there could no longer be a 500m safety zone?

8. Page 26 – Section 3.7.2. Can Ithaca Energy clarify the time allowed for each sidetrack e.g., is it 16 days per sidetrack, (a total of 32 additional days for completing both sidetracks)? For noting - Table 3.8 allows a total of 16 days for contingency sidetracks.

9. Page 27 - Table 3.7 – Can Ithaca Energy confirm that the length of section for the 8 ½" section (and sidetrack) is 505m? Please can you also clarify why the weight of cuttings would be different for the 8 ½" sidetrack compared to the 8 ½" section? OPRED has assumed that these would be the same.

10. Page 32 - Table 3.10 Can Ithaca Energy clarify that the selected pipeline material (carbon steel) and design (pipe in pipe) is considered to be the best option for minimising upheaval buckling? Would alternative materials or designs reduce the potential requirement for rock placement?

11. Page 37 – Section 3.9.2. It is noted that some upheaval buckling mitigation will be required. How will this be assessed?

12. Page 40 - Table 3.12. Can Ithaca Energy confirm that the guard vessel will monitor the anchor and chain locations outwith the 500 m safety zone, warning other sea users of their presence?

13. Page 44 – Section 3.13.1. It is stated that the OIW results for 2020 equated to an oil discharge of 1728 Kg. This equates to an OIW concentration of 19.5 mg/l. However, the average OIW concentration in Table 3.13 for 2020 is 23.75mg/l. Can this difference be clarified? Can Ithaca Energy also clarify why the 2020 September OIW concentration was 38mg/l (Table 3.13) but Figure 3.16 shows September split into

two columns for the first and last half of the month. There is no explanation for splitting September into 2 halves.

14. Page 44. Table 3.13 – The last column in the table is estimated oil discharged (Kg/month). Please clarify that these figures are correct.

15. Page 46 – Table 3.14. In 2020, the PW volume was 88,303 m3/day and the FPF-1 total volumes of PW in Table 3.14 have reduced quite significantly for 2021 and 2022. Can Ithaca Energy explain the reasons behind this reduction please? Please also expand Table 3.14 to show estimated total PW volume estimates until 2030.

16. Page 46 - Peak Water production in the FDP is illustrated in Appendix A for mid case – 2024 through to 2030, and high case peak water production is illustrated for 2027-2028 only. This is not aligned to the information within the ES. The ES states (page 46) 'over the life of the Abigail field, peak water production is expected to be 501m3/day (182,865m3/year) for both the mid (year 2024) and high (2027) production cases'. Please clarify why there is a difference in the FDP and the ES.

17. Page 47 - Table 3.15 – Can Ithaca Energy clarify why there is a difference in the m^3/day gas use, when the t/day fuel gas estimates are the same? e.g., 2024 – usage is 134 t/d, however the corresponding volumes in m^3/day are different for columns 3 & 5. The same anomaly can be seen for 2026 mid and high cases. Can Ithaca Energy also confirm that the cases presented are for both wells?

18. Page 47 - Section 3.13.3 The FDP (Rev I) has stated that the high case flaring forecast is 25.5t/day and this has been used as a figure in the ES. There is no mention of this rate within the ES. The discussion around flaring in the ES states that the continuous flaring is at a rate of 8.8t/d, and there is no mention of a high case flaring forecast. Please clarify why there is a discrepancy with the FDP and ES.

19. Page 47 - Section 3.13.3. The FDP states that the best technical case flare forecast is 20.2t/d and this rate considers the reinstatement of the flare gas recovery package. Section 3.13.3 in the ES states that the 'Greater Stella Area Development has a minimum flaring approach, such that continuous flaring should not take place, with the exception of purge and waste streams, oily degasser gas and other low pressure/atmospheric system vents'. Can Ithaca Energy clarify that 20.2t/d will be representative of the daily flare rate when the Abigail wells come online? Is this rate representative of the minimum flaring approach from FPF-1?

20. Page 47 – Section 3.13.3. It is unclear what the flaring rate per day is or what it is projected to be when Abigail well(s) come online (as comment no.19 above). Please clarify that the rate of 8.8t/d is in addition to the current baseline flaring from the FPF-1 and clarify projected flaring rates for the FPF-1.

21. Page 47 - Section 3.13 – Can Ithaca Energy confirm that the Produced Water, flaring and additional fuel gas usage discussion scenarios include both wells? It is noted that tables and figures refer to mid and high case, but it is unclear whether these are a 1 well or 2 well scenarios.

22. Page 47 - Section 3.13. It is understood that the flare ignition package has been rectified, and there is no continuous flaring (confirmed to OPRED via email 01/10/2021). However, this does not appear to align with the FDP (page 70, section 4.8.1) which states that best technical case (with the reinstatement of the flare gas recovery system) is a rate of 20.2 te/d. Please clarify the conflicting discrepancies between the statements in the ES and FDP.

23. Page 73 – Section 4.9 The proposed pipeline crossing appears to be located just outwith the Stella MDC manifold 500 m safety zone (as shown in Figure 4.11). Have Ithaca Energy considered locating this crossing within the 500 m safety zone? This could reduce the volume of protective material required or remove the need for rock dump which presents more of challenge for decommissioning.

24. Page 90 - Section 5.3.3. Can Ithaca Energy confirm that the 500m safety zone around the Abigail manifold will be in place prior to the drilling rig departing from Phase 1 drilling operations?

25. Page 90 - Table 5.4 Flaring from well clean up(s) has not been considered either as a minor effect in Table 5.3 or a significant effect in Table 5.4. Please clarify why flaring has not been considered as an environment effect (regardless of significance) in Section 5. Please note that flaring, as a result of well clean-up has not been listed in section 6.4 either.

26. Page 108 - Section 6.3 Ithaca Energy states that re-injection (of produced water) facilities are not available. Has this been considered given the estimated significant increase in PW volumes due to the development, and if not, why not?

27. Pages 137/138/139 - Figures 6.6a & b. It is explained that Phase 1 drilling is scheduled from April–August, whilst Phase 2 drilling is scheduled from July–December. Please clarify why Figure 6.6a (for Phase 1) shows the drilling period as Dec–Feb and Mar–May in the Legend.

To Note:

i) It is noted in some calculation tables, for example in Tables 6.4a & b and 6.5, that due to the use of different spreadsheets by Ithaca Energy, some estimates of total CO2(e) are slightly different from OPRED's calculations. However, the difference is not considered significant by OPRED.

ii) Please also note that a DEPCON application will be required to be submitted to the OGA as is the current procedure, but that due to a change to legislation, any deposits should be considered under a pipeline screening direction in the PETS system on the Oil and Gas Portal.

Your response will be reviewed, and consideration given as to whether the information provided ought to be made public because the information is directly relevant to reaching a conclusion on whether the project is likely to have a significant effect on the environment. If so, OPRED will notify Ithaca Energy under Regulation 12(3), and

Ithaca Energy will have to take further steps to publish information and make provision for further public consultation under Regulations 12(5) to 12(9).

OPRED looks forward to receiving your response so that we can progress our consideration of the ES.

Yours sincerely

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Environmental Manager
The Offshore Petroleum Regulator for Environment and Decommissioning
For and on behalf of the Secretary of State for Business, Energy and Industrial Strategy