



Offshore Petroleum Regulator  
for Environment & Decommissioning

**The Offshore Oil and Gas Exploration, Production, Unloading and Storage  
(Environmental Impact Assessment) Regulations 2020**

**Regulation 14(3)  
Secretary of State Decision**

TotalEnergies E&P UK

Alwyn East Field Development

To: [REDACTED]

**Decision Recommendation:**

That you agree, on behalf of the Secretary of State, to the grant of consent by the Oil and Gas Authority (OGA<sup>1</sup>).

As set out further below, taking into account the relevant considerations, I have concluded that the project will not have any significant effects on the environment and have decided the conditions that should be attached to the agreement to the grant of consent.

From: [REDACTED]  
[REDACTED]

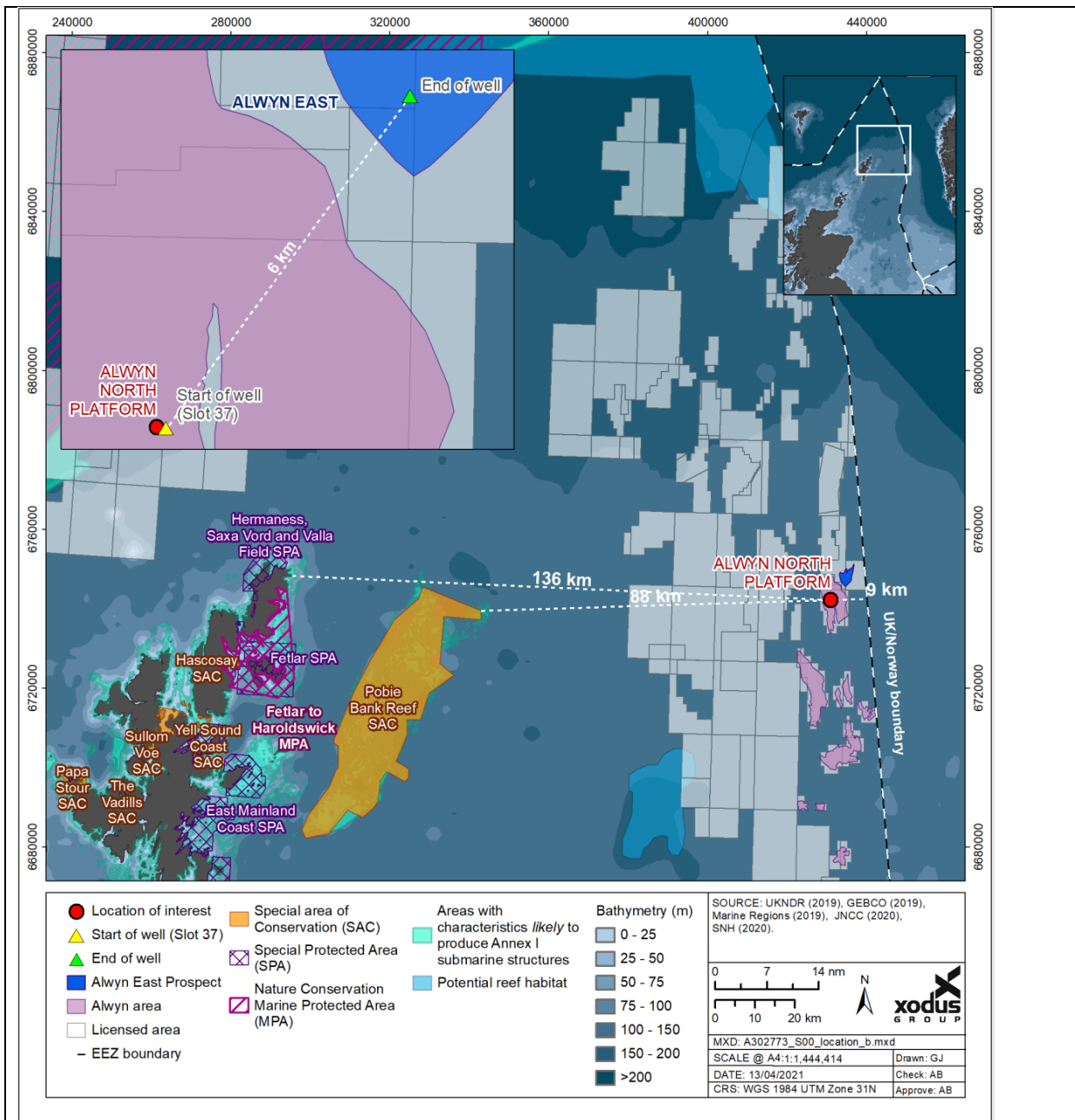
Date: 11<sup>th</sup> October 2022

|                            |  |
|----------------------------|--|
| <b>ES Title:</b>           | Alwyn East                                 |
| <b>Developer:</b>          | TotalEnergies E&P UK (TEPUK)               |
| <b>Consultants:</b>        | Xodus Group                                |
| <b>OGA Field Group:</b>    | Northern North Sea & West of Shetland Area |
| <b>ES Report No:</b>       | D/4264/2021                                |
| <b>ES Submission Date:</b> | 29/09/2021                                 |
| <b>Block No/s:</b>         | 3/9a                                       |
| <b>Project Type:</b>       | Development and Production                 |
| <b>OGA Reference No:</b>   | PCON/5456                                  |

**Project Description**

The Alwyn East proposed project will involve oil and gas production from the Alwyn East field located in the Northern North Sea, approximately 136 km from east of Shetland and 9 km from the UK/Norwegian median line.

<sup>1</sup>The Oil and Gas Authority now operates under the business name of the North Sea Transition Authority (NSTA).



TEPUK (the Developer) plans to drill a new well at Alwyn East from the existing Alwyn North Alwyn Alpha (NAA) installation with end of well target located 5.8km away at Alwyn East field. An existing wellhead at the Alwyn NAA will be utilised and no new subsea facilities will be required. To support the development of the Alwyn East field there will be some new equipment and/or modifications to existing equipment on the Alwyn NAA topsides. Over the first two years of production from Alwyn East (2023/24) there are expected to be up to four well start-ups per year following planned or unplanned well shutdowns. During start-ups, it is estimated that there will be up to 25 tonnes of gas flared when methanol is being injected for hydrate management. After two years, it is expected that the well pressure will have depleted such that methanol is not required for hydrate management and thus flaring is not required for restarts.

Gas produced from Alwyn East will be comingled at the Alwyn NAA installation and exported into the Frigg UK gas pipeline to the St. Fergus terminal, Aberdeenshire. Oil produced from Alwyn East will be exported from the Alwyn NAA installation to the Cormorant Alpha installation and then exported via the Brent System pipeline to Sullom Voe terminal, Shetland.

Start-up of production from the Alwyn East field is proposed for Q1 2023.

### **Summary of Procedural History**

|                   |   |
|-------------------|---|
| 23 September 2021 | Environmental Statement (ES) submitted to OPRED                   |
| 22 November 2021  | Public Notice closing date  |
| 04 February 2022  | OPRED request for further information                             |
| 08 April 2022     | Developer submits further information                             |
| 09 June 2022      | Developer informs OPRED of field determination review by the NSTA |
| 21 June 2022      | NSTA confirms that there is no change to field determination.     |

### **Key Environmental Effects**

The ES identified and discussed the following as having the potential to cause an environmental impact:

- Effects on users of the sea (e.g., commercial fishing & shipping) from the physical presence of temporary and permanent infrastructure.
- Effects on the sediment, seabed habitats, fauna and flora from seabed disturbance caused by the placement of temporary and permanent infrastructure.
- Effects on water quality, flora and fauna from discharges to sea caused by drilling, commissioning and operational produced water.
- Effects on marine mammals and fish from underwater noise caused by piling of infrastructure and vessel traffic.
- Effects on the water quality, protected species and habitats, fauna and flora from an accidental event resulting in an oil release; and
- Effects on the local air quality and climate from the discharge of atmospheric emissions generated from the project.

### **Key Environmental Sensitivities**

The ES identified the following environmental sensitivities:

- **Fish and shellfish:** Several commercially important fish and shellfish species can be found in the vicinity of the Alwyn East field and the project area lies within multiple nursery and spawning areas of fish species. There are periods of peak spawning for cod, haddock, Norway pout and saithe. It is an area of high spawning intensity for cod and Norway Pout and a high intensity nursery area for blue whiting. In addition, the following species are listed as being Scottish Priority Marine Features (PMFs) anglerfish, blue whiting, cod, herring, ling, mackerel, Norway pout, saithe, sandeels, spurdog and whiting.
- **Seabirds:** Multiple species of seabird could be present at the project area in various levels of abundance depending on the season. The following species have been recorded in the Alwyn and Alwyn East area: Northern fulmar, northern gannet, Arctic skua, great skua, black-legged kittiwake, great black-backed gull, common gull, lesser black-backed gull, herring gull, glaucous gull, Arctic tern, common guillemot, razorbill, little auk and Atlantic puffin. Seabird sensitivity in the region of the Alwyn East field is medium in May and June (in Block 3/05), then low throughout the rest of the year. The region around Alwyn East reflects a similar sensitivity, with the sensitivity at the Alwyn NAA installation (Block 3/09) being low throughout the year.

- **Protected habitats and species:** There are no designated Marine Protected Areas (MPAs) in the vicinity of the Alwyn East field. No Annex I habitats, or habitats of conservation significance have been identified within the vicinity of the Alwyn East field.
- **European Protected Species and pinnipeds:** Harbour porpoise and white-beaked dolphin are the most widespread and frequently encountered species, occurring regularly throughout most of the year. Minke whales, Atlantic white-sided dolphin and long-finned pilot whale are also seasonal visitors. Pinnipeds such as the grey seal and the harbour seal may occur in the project area in very low densities but are far more common close to shore.
- **Other users of the sea:** Commercial fishing effort in the project area has been assessed as “low” representing less than 1% of the total UK fishing effort. Effort is highest in the months of January, June and July. Demersal fishing gear is most prevalent, but pelagic gear is also used in the project area.

Shipping density in the Alwyn East area is low. The Alwyn East field is in an area of extensive oil development. The closest oil and gas activities to Alwyn East is the Ninian field located in Block 3/08 (approximately 15 km from the Alwyn NAA installation) and the Strathspey field located in Block 3/04, approximately 11.4 km from Alwyn. The Staffa field, which lies 8 km from Alwyn East, is no longer active.

The Alwyn NAA installation is located within Block 3/09, which lies within a Ministry of Defence (MoD) training range. However, as all routine activities will take place from the Alwyn NAA installation, there will be no requirement for any additional notifications to be issued to the MoD.

There is one wreck located north of the centre of Block 3/04. Due to the nature of the activities, this wreck is not considered to be at risk from the additional production activities at Alwyn East.

- **In-combination, cumulative and transboundary sensitivities:** The project area is adjacent to the Norway / UK median line (9 km). Transboundary impacts as a result of the project are not considered to be significant.

### **Public Consultation(s)**

The ES and the application for consent was subject to public consultation, for which the Public Notice was published on 22 October 2021 and ended on 22 November 2021. One public representation was received expressing support for the project. The representation was acknowledged, but did not relate to the environmental effects of the project and therefore was not taken into account when reaching a conclusion of the significant effects of the project on the environment. No other public representations were received.

### **Consultation with Other Authorities**

The Joint Nature Conservation Committee, Marine Scotland Science, the Maritime and Coastguard Agency, Ministry of Defence and the Northern Lighthouse Board were consulted on the application for consent and the ES submission. All of the authorities submitted responses and none of the authorities had objections.

### **Consultation with other Countries**

Given the location of the proposed project, representatives for Norway were contacted and offered the opportunity to participate in the EIA process. However, no response was received and therefore they did not participate in the EIA process.

### **Further Information**

Further information was requested from the Developer on 4th February 2022 under a Regulation 12(1) notice. A response to the request for further information was received from the developer on 8<sup>th</sup> April 2022. The further information clarified a number of points raised by OPRED, but was not considered to be directly relevant to reaching a conclusion on whether the project is likely to have a significant effect on the environment and so did not engage Regulation 12(3) requirements and was therefore not subject to further public notice.

### **Conclusion on the significant effect of the project on the environment**

I have reviewed the following:

- The ES;
- Further information obtained under Regulation 12 as summarised above;
- The representations received from other authorities as summarised above;
- Any representations received pursuant to regulations 11, 12 and 13, as summarised above; and
- The conditions that may be attached to the agreement to the grant of consent.

Taking all relevant matters into account, I have concluded that the project is not likely to have a significant effect on the environment resulting from the following:

### **Physical presence of temporary and permanent infrastructure**

The Alwyn East well will be drilled from the Alwyn NAA installation using an existing wellhead. There will be some new equipment and/or modifications to existing equipment associated with the Alwyn NAA topsides to accommodate the additional production from the Alwyn East field. There will be no new subsea facilities associated with the well or additional production. There will be a small increase in vessel movement during the drilling phase (two supply vessel trips a week). However, this will be temporary and short term and there will be no requirement for additional vessel trips during the production phase to what is currently deployed at the platform. I agree with the conclusions of the assessment that, over the course of the drilling campaign and production phase, there will be no significant impact to other users of the sea, including fisheries and shipping in the vicinity of the Alwyn field.

### **Seabed disturbance**

There will be no new seabed infrastructure, no drill cuttings or any other form of seabed disturbance as a result of the drilling of the Alwyn East well and the subsequent production increase. The Alwyn East well will be drilled via extended reach drilling (ERD) and all cuttings will either be skipped and shipped to shore or disposed of via cuttings reinjection (CRI). I agree with the conclusions of the assessment that over the course of the drilling campaign and production phase there will be no significant impact to the seabed.

### **Underwater noise**

There will be an increase in the number of vessel trips. However, the increased vessel presence and drilling activities will be temporary and short term. During the production phase, there will be no requirement for additional vessel trips. Present noise generated by operations at the Alwyn NAA installation are negligible in the context of ambient noise levels and the increase in production will not alter levels of noise.

As the well will be drilled through an existing donor well from the platform, with drilling operations starting from the previously drilled 17½" section, over 2,000 m below the seabed, underwater noise-emitting activities resulting from ERD are expected to be minimal.

Due to the distance of Alwyn NAA installation to the coast, both grey and harbour seals are unlikely to be encountered in great numbers as they are typically found at low density in the field area. Observation data suggests that the area could be moderately frequented by a variety of cetacean species.

I agree with the assessment and that the proposed project will not have a significant impact on the environment resulting from underwater noise.

### **Discharges to sea**

Produced water – Alwyn has a produced water re-injection system (PWRI). Discharges of produced water to sea occur at Alwyn only during periods when the PWRI system is unavailable. The increase in produced water associated with the proposed Alwyn East well will be within the capacity of the existing produced water handling facilities at Alwyn. PWRI facilities normally operate at worst-case 90% efficiency, and therefore, as a worst-case it is considered that 10% of the produced water is discharged overboard. The increase in production is not anticipated to significantly increase the volume of produced water received at the Alwyn facilities. Increased produced water volumes are anticipated to be <1% of the total produced water at the platform with increases in oil in water to be minimal. I therefore agree with the conclusions of the assessment that the contribution to the overall produced water volumes and subsequent mass of oil in produced water at Alwyn will not have a significant effect on the environment.

Drilling discharges - there will be no drilling muds or cuttings discharged to sea as the well is being drilled using oil-based mud (OBM) and any OBM and associated drill cuttings will be skipped and shipped to shore. Cement will be used for the well casings and liner, however since it is a side-track from an existing well there will be no deposit of cement around the wellhead. During well clean-up, the wastewater generated will be routed to a test separator to allow hydrocarbons to be separated from the water. The wastewater will be re-injected via the PWRI system. I therefore agree with the conclusions of the assessment that drilling discharges will not have a significant effect on the environment.

Production chemicals - There are expected to be no new additional chemicals to be used on the Alwyn NAA installation as a result of the additional production from Alwyn East. However, as chemicals are dosed routinely into the production stream, increased production from Alwyn East means that there is likely to be an increase in use and discharge for a small number of chemicals that are currently used on the platform, however any discharge of chemicals into the marine environment are risked assessed and will not have a significant impact. In addition, any discharges are expected to be dispersed rapidly in the water column. I therefore agree with the conclusions of the assessment that drilling discharges will not have a significant effect on the environment.

### **Atmospheric emissions**

The primary receptors considered in relation to the atmospheric emissions from the project were local air quality, ocean acidification and climate change. The dispersion of atmospheric

emissions is directly influenced by meteorological conditions which are by nature relatively dynamic in the offshore North Sea environment.

There will be additional energy requirements as a result of the drilling, well testing and commissioning of the Alwyn East well.

Atmospheric emissions will temporarily increase as a result of drilling the new well at Alwyn East due to the need to run a third power generator, as well as emissions from supply vessels, helicopters, well annuli venting and flaring during well test and start-up. These are considered to be the greatest contributor to atmospheric emissions from the Alwyn East project. TEPUK will optimise these activities to reduce emissions as far as practical, and a key focus is minimising three generator operation and optimising the generator load during drilling phases. Fuel Gas emissions performance will be closely monitored against targets during each project phase. I agree with the conclusions of the assessment that the increase in atmospheric emissions will not be significant.

As a worse-case scenario, atmospheric emissions from Alwyn NAA installation may increase by 5% compared to 2020 figures due to production from Alwyn East. However, the most likely scenario would result in a 9% decrease compared to 2020 figures and fuel use will be consistent with that recorded over the last 3 years and therefore not expected to have a noticeable increase in emissions above the range currently reported. The quantity of gas flared is expected to increase over the first two years of production from Alwyn East because of the additional four well start-ups that are likely to be required, during which up to 25 tonnes per start-up will be flared. After this period, flaring will revert to current levels. Operational load flaring is not an approach used on Alwyn NAA when a gas export route is not available so there will be no change in operational load flaring because of production from Alwyn East. During production, venting will only occur during *ad hoc* maintenance operations which will not increase in frequency as a result of Alwyn East project. In addition, there are no planned changes to fugitive emissions as a result of the Alwyn East well coming online, primarily because no additional process equipment or pipework is required to facilitate this.

TEPUK seeks to meet or exceed Net Zero targets across its North Sea assets. During the production phase the mean forecast carbon intensity of the Alwyn Area is shown to reduce over the short to medium term and is already below the industry average when compared to similar installations. TEPUK has a target of zero routine flaring across all operations by 2030, in line with the World Bank Zero Routine Flaring initiative. At the time of the Alwyn 2020/2021 Flare Report submission, routine flaring made up approximately 5% of total platform flaring. The remainder represented principally non-routine flaring from start-ups and safety critical flare. Therefore, the benchmark for routine flare on Alwyn is already low, and further process modification and optimisation will be implemented to target further reduction of this figure to zero by 2030.

TEPUK assessed the atmospheric emissions as a result of the project against local air quality and global climate change. The amount of CO<sub>2</sub>, NO<sub>x</sub> and SO<sub>2</sub> generated as a result of the proposed development is very low in relation to the overall UKCS emissions, and considering the rapid dispersion due to meteorological conditions and management and mitigation measures in the local impacts are considered to be minor. I therefore agree with the conclusion that the impacts from atmospheric emissions will not have a significant effect on the environment.

### **Accidental events**

The additional risks of a well blow-out and well release scenario were considered, although the likelihood of a well blow out is remote. Stochastic modelling for a well blowout determined that such an event could cause severe surface and shoreline oiling. However, this was in an

unconstrained scenario where no mitigation measures were in place and no response initiated in the event of a blowout.

The Norwegian median line is 9km from Alwyn NAA installation. Modelling indicated that there was a worst-case probability of 100% for the crude crossing into Norwegian waters in all seasons. The shortest arrival time to a median line is to the UK/Norway median in 3 hours during autumn and spring.

Beaching was predicted to occur on the east coast of the UK from Shetland to Redcar and Cleveland in England and on European coastlines including Norway, Denmark and Sweden. The most likely place that the crude is predicted to beach is at Norway with the highest probability of 83.7% in summer. The minimum arrival time for oil to beach is in Norway and was predicted to be 6 days 1 hour during spring. UK protected sites have been considered in detailed assessment, of which there are five SPAs and one SAC predicted to receive more than 40% probability of beaching.

The consequences associated with such an event would be significant and would affect several protected conservation areas within UK waters and along the coast. An assessment was undertaken to determine impacts on the relevant receptors, and it was concluded that, in a well blow out scenario, receptors such as benthos, fish, seabirds, and cetaceans would be significantly impacted. However, given the measures in place to prevent and mitigate such a scenario (as outlined below) and the unlikely possibility of an accidental event occurring, the environmental risk has been deemed to be minor. I therefore agree with the conclusions of the assessment that accidental events associated with the drilling and production at Alwyn East are not likely to have a significant impact on the environment.

## **Features of the project or measures envisaged to avoid, prevent, reduce or offset significant effects.**

### **Accidental Events**

As discussed above, it has been identified that a well blow-out from the Alwyn East well could potentially have a significant effect on the environment. The following key measures of the project are envisaged to avoid, prevent, reduce, or offset any significant adverse effect on the environment from accidental events.

The Developer has measures in place to ensure that the risk and impact of a well blow-out occurring is minimised. These preventative measures are:

- There will be appropriate well controls and a blowout preventer for the Alwyn East well.
- TEPUK will conduct drill kick exercises that will be fully documented.
- The Alwyn East standalone drilling OPEP will be in place for the drilling activities, including modelling and appropriate response planning.
- Development of, and conformance to, appropriate maintenance procedures.
- Environmentally critical equipment to the operations will be identified within Alwyn's maintenance systems. These will be inspected regularly including audit; and
- Simultaneous operations (SIMOPs) will be actively identified and managed.



Although a significant effect on the environment would be expected in the case of an unplanned, accidental well blow-out from the Alwyn East well, the mitigation measures and commitments in place above will seek to avoid and/or reduce the impact as far as possible.

I therefore agree with the conclusion that a well blow-out does have the potential to give rise to a significant effect on the environment, however, mitigation measures and commitments will be in place to reduce the risk of a well blow-out occurring to as low a risk as possible.

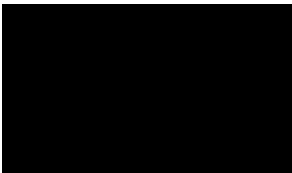
### **Decision on Conditions to the agreement of the grant of consent**

No conditions should be attached to the agreement to the grant of consent.

### **Recommendation**

I have set out above my conclusion on the significant effects of the project on the environment and the conditions that should be attached to the grant of consent.

I recommend that the Secretary of State should agree to the grant of consent for this project because there are no significant effects on the environment.



Date 11<sup>th</sup> October 2022

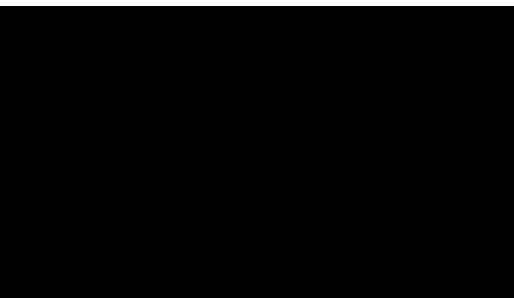


Offshore Petroleum Regulator for Environment and Decommissioning  
For and on behalf of the Secretary of State for Business, Energy, and Industrial Strategy

### **Agreement decision**

I accept the recommendation for the reasons given.

On behalf of the Secretary of State, I therefore agree to the grant of consent.



Date 11<sup>th</sup> October 2022



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