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

# Regulation 14(3) Secretary of State Decision

Shell U.K. Limited

# Victory Field Development Environmental Statement

# To: Director Environmental Operations, OPRED

# **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.

From:

Environmental Manager

# Date: 8 November 2023

ES Title:	Victory Field Development	
Developer:	Shell U.K. Limited (Shell)	
Consultants:	Orbis Energy Limited	
OGA Field Group:	West of Shetland	
ES Report No:	ES/2022/003	
ES Submission Date:	7 <sup>th</sup> July 2022	
Block No/s:	207/01a	
Project Type:	Field development	
OGA Reference No:	PCON/6860	

# **Project Description**

The Victory development will produce gas and condensate from a single production well and is located approximately 47 km northwest of Shetland and approximately 110 km to the nearest UK (United Kingdom)/ Faroe median line. Hydrocarbons will be exported to the Shetland Gas Plant (SGP) via a new export pipeline that will be tied into the Laggan Tormore pipeline. The development area is at a water depth of approximately 160m.

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



Location of the Victory development

The proposed development will consist of a single production well and a piled well head protection structure (WHPS) and piled pipeline end manifold (PLEM) connected to a new 14" 16.2km export production pipeline and a new 18 km control umbilical. The export production pipeline will be tied into the Laggan Tormore pipeline (Greater Laggan Area Flowline 1 - GLA FL1) at Hot Tap Tee HTT1-2, comingling with production from Greater Laggan Area West of Shetland and exported to SGP. Liquid condensate will be exported to Sullom Voe oil terminal. Gas will be processed for distribution from the SGP. Edradour manifold will control the Victory well via the installation of an 18km control umbilical that will provide power, communications, hydraulics, and offshore chemicals. A glass fibre reinforced polymer cover (GRP) at the Edradour manifold will be replaced to enable tie in of the Victory umbilical. The pipeline and umbilical will either be laid on pre-cleared seabed with rock deposits for stabilisation or will be laid on and protected by rock deposit. Rock deposits and mattresses will provide protection for connection spools, jumpers, and pipeline crossings.

# **Key Environmental Impacts**

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

- Effects on the seabed and protected species and habitats;
- Effects on water quality from discharges to sea;
- Effects on local air quality and climate from the atmospheric emissions generated by the project;
- Effects from underwater noise caused by piling of the drilling template and manifold and associated vessels;
- Effects on water quality, protected species and habitats, fauna and flora from an accidental event resulting in an oil release;
- Effects on the sediment, seabed habitats, fauna, and flora from seabed disturbance from the physical presence of temporary and permanent infrastructure; and

• Effects on users of the sea (e.g. commercial fishing and shipping) from the physical presence of temporary and permanent infrastructure, and the construction phase of the project.

## Key Environmental Sensitivities

The ES identified the following environmental sensitivities:

• **Protected habitats and species:** The Faroe Shetland Sponge Belt Nature Conservation Marine Protected Area (FSSB NCMPA) is located 8km northwest of the umbilical tie in at Edradour manifold. The FSSB NCMPA is designated for deep sea sponge aggregations, ocean quahog aggregations, offshore subtidal sands and gravels and geomorphological features. No sponge aggregations or ocean quahog aggregations were observed during the Victory surveys. A reefiness assessment was undertaken along the umbilical and pipeline routes. One location along the proposed pipeline route to HTT1-2 was observed to have low reefiness. No cold-water coral (*Lophelia pertusa*) was present.

There are several Special Protection Areas (SPA) designated for certain seabird species located along the Shetland coastline and within 40 km of the development area, more details provided in the seabird's section below. There are no other protected sites within 40 km of the development area but there are several sites within 60 km.

- Fish and shellfish: Spawning species in the project area include haddock, Norway pout, saithe (peak spawners), lemon sole, sandeels, herring and whiting. Nursery species include anglerfish, blue whiting, mackerel (high intensity), cod, herring, horse mackerel, ling, Norway pout, sandeel, spurdog and whiting (all Scottish Government priority marine features (PMF)) as well as common skate (IUCN red list), European hake, haddock, lemon sole, Norway pout, saithe, and spotted ray. Cod, horse mackerel and haddock are vulnerable globally. Shark, skate, and ray species may be present with most species being PMF, with basking shark (IUCN listed as endangered) most likely to be present.
- Seabirds: There are several SPAs located along the Shetland coastline and within 40 km of the development area. The Ramna Stack and Gruney SPA (33 km southeast supporting Leach's petrel) and Ronas Hill North Roe and Tingon SPA (34 km southeast supporting red throated diver and merlin) and Otterswick and Gravesland SPA (39 km southeast supporting red throated divers) are located within 40 km.

Victory development is located within foraging range of surface feeding and diving seabirds. The largest UK aggregation of great skua is found on the Seas off Foula SPA 57km southwest from Victory. The Shetland coastline supports a population of seabirds including great skua, high numbers of northern fulmar and multiple other bird species including black legged kittiwake, herring gull, common guillemot, Northern fulmar, Northern gannet, razor bill, Atlantic puffin, Manx shearwater, and European storm petrel are found at the Victory development location. During breeding season (March – September) at-sea seabird densities are 490 birds per km<sup>2</sup> at the project location and 99 seabirds per km<sup>2</sup> out with breeding season. Sensitivity to oil pollution is low between May and September, low to medium November to February, high to very high in October and otherwise low.

• European protected species and pinnipeds: Cetacean species such as minke whale, white beaked dolphin, harbour porpoise, white sided dolphin, killer whales, long

finned pilot whale, Atlantic white sided dolphin, blue whale, fin whale, sei whale, humpback whale, sperm whale, right whale and northern bottlenose whale may be present at various points in the year depended upon species. Harbour and grey seals occur on shelf seas, but densities are low at Victory location.

Other users of the sea: The Victory development location has in ICES terms moderately high demersal fishing effort (100-500 effort days) and low pelagic fishing effort (1 – 25 effort days). Demersal catch includes saithe, hake, monkfish, cod, ling and haddock with monkfish and anglerfish commercially important west of Shetland. Monkfish were observed during survey but landings not abundant. Langoustine (Nephrops) and scallop can be found along the continental shelf, but langoustine prefer fine sand to muddy sediment. Commercial fishing effort includes pelagic species - mackerel and herring. In terms of mariculture the Shetland Isles is an important location for both farmed mussels and farmed salmon.

Commercial shipping density in the area is very low, with commercial shipping predominately related to container ships, ferries and oil and gas related transits. Fishing vessel transits are moderate to high at 10- 50 vessels per week. The nearest oil and gas development include West of Shetland (WOS) - Total, Clair Ridge 41km southwest and Claire 45km southwest - BP. The Farice telecom cable is 55km northwest. The project area is not used for military exercises, there are no offshore wind or  $CO_2$  storage projects consented or operational in the vicinity. There are no wrecks located within the project area. Tourism and leisure relating to wildlife and water sports are concentrated on the Shetland coast.

In-combination, cumulative and transboundary sensitivities: The Victory development from closest point is located approximately 110 km from the UK/ Faroe median line and 8km from the FSSB NCMPA. The installation of infrastructure associated with the development will marginally reduce the area available for fishing activities alongside the existing Greater Laggan and West of Shetland oil and gas area. The Rosebank development consented on 27 September 2023, is located approximately 130 km northwest of Shetland in over 1000 m water depth with the export route for hydrocarbons via the West of Shetland Pipeline System (WOSPS). There is potential for installation and commissioning activities at Rosebank and Victory developments to be undertaken at the same time.

With respect to discharges to sea, no cumulative impact with other oil and gas activities are expected because drilling and commissioning discharges will be temporary and spatially restricted. A lean dry gas with minimal condensate is anticipated. Any produced water generated during production will be managed at SGP. Emissions to air arising from the development will be localised and short term with no significant cumulative impact with other oil and gas activities.

The potential for significant cumulative impact on other users of the sea, emissions to air and water, noise and seabed disturbance is likely to be minimal.

# **Further Information**

Further information was requested from the developer on 12 September 2022 under Regulation 12(1). A response was provided on 11 October 2022 and further information was provided by the developer on 26 and 27 October 2022.

Shell acquired the original developer, Corallian Energy Limited (CEL), in November 2022, and indicated that the project scope was being reviewed. Shell subsequently confirmed to OPRED

on 7 July 2023 that it did not propose to make any changes to the project other than the start and end date moving forward one year.

The further information was assessed, and it was considered that some of the information ought to be made public because it was directly relevant to reaching a conclusion on whether the project was likely to have a significant effect on the environment. On 15 August 2023, OPRED therefore notified the developer under Regulation 12(3) that a further period of public consultation must be carried out in accordance with Regulation 12(5) to (10). A copy of the notice under Regulation 12(3) was published on the relevant page of the GOV.UK website on 17 August 2023.

# Public Consultations

The ES was subject to public notice, with the period for representations commencing on 22 July 2022 and ending on 31 August 2022. There were no public representations received.

As noted above, some of the further information provided in October 2022 and subsequently confirmed on 7 July 2023 engaged Regulation 12(3) and required further public notice. The period for further public representations commenced on 18 August 2023 and ended on 18 September 2023. There were no public representations received.

## Compliance with Regulation 11(5)

Under Regulation 11(5), the developer is required to publish the notice under Regulation 11(3)(c), the ES and the summary of the project on a public website at least until the date three months after the date on which the Secretary of State publishes the notice under regulation 16(1).

OPRED understands that the relevant documents were initially published on the website of the original developer, CEL. OPRED subsequently became aware on 31 July 2023 that at some point following the acquisition of CEL by Shell in November 2022, that website stopped operation, meaning that the relevant documents were no longer publicly available at that web address. OPRED notified Shell of this issue, and the relevant documents were re-published on a public website of Shell on 4 August 2023.

The relevant documents have been, and remain, publicly available on the relevant page of GOV.UK at all times since at least 18 August 2022. There was also a further period of public consultation under Regulation 12 as set out above, with all relevant documents available on both Shell's website and GOV.UK.

In the circumstances, OPRED indicated to Shell (in the Regulation 12(3) notice dated 15 August 2023) that it did not consider there to have been any significant detriment to members of the public wishing to participate in the environmental impact assessment process, and that OPRED was content for that process to continue notwithstanding the developer's apparent failure to comply with Regulation 11(5). That remains OPRED's position at the date of this conclusion / recommendation.

## **Consultation with Other Authorities**

The Joint Nature Conservation Committee (JNCC), Ministry of Defence (MoD), The Northern Lighthouse Board (NLB), Marine Scotland, Maritime and Coastguard Agency (MCA) and Shetland Islands Council (SIC) were consulted on the ES and further information.

All the consultees submitted responses, with exception of Shetland Islands Council on the further information consultation, and none of the consultees had objections to the environmental impact assessment and further information.

## **Consultation with other Countries**

Due to the location of the development and its nature, neighbouring countries were not contacted to participate in the EIA process.

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

I have reviewed the following:

- The Victory Field Development Environmental Statement;
- The further information obtained or provided under Regulation 12 as summarised above and confirmed by the developer;
- The representations received as summarised above; and
- The conditions that may be attached to the agreement to the grant of consent.

Taking those matters into account to the extent required under Regulation 14(2), I have concluded on behalf of the Secretary of State that this project will not have any likely significant effect on the environment:

#### Reasons for conclusion

## Physical presence of temporary and permanent infrastructure:

The physical presence of temporary and permanent infrastructure has been assessed in the ES. During drilling activities there will be a temporary 500 m safety exclusion zone excluding other users of the sea. Additional monitoring of semi-submersible drilling rig mooring lines and anchors over an area of 3.8 km<sup>2</sup> will be undertaken by an Emergency Response and Rescue Vessel (ERRV), to warn other sea users of the equipment presence. Appropriate notices to mariners will also be used to raise awareness of these activities. The pipeline and subsea structures will be protected against snag risk by design with protection deposits and a permanent statutory 500 m subsea safety exclusion zone established to protect the well. Installation of the pipeline and umbilical may overlap with drilling but are scheduled out with the busier spring fishing period. Limited clearance of sand wave crests within 2.5km of Victory well may be required to lay the production pipeline. Due to the presence of boulders an optional rock carpet may be pre-laid prior to installation of the pipeline and umbilical followed by rock stabilisation to prevent upheaval buckling. Taking this into account there is no likely significant effect on other users of the sea. The project is unlikely to cumulatively result in significant loss of seabed area. Permanent new assets and stabilisation material will result in localised change of habitat and species, but this is considered to be minimal and not significant.

I agree with the assessment provided and concur that there will be no likely significant effect arising from physical presence of vessels and assets from this project or when considered cumulatively with other projects on other users of the sea.

## Seabed disturbance:

The worst-case area of temporary and permanent seabed impact from the development is expected to be 1.29 km<sup>2</sup>. Assessment of temporary seabed disturbance considered two temporary lay down areas (0.02 km<sup>2</sup>) for equipment for pipelay and temporary loss/ disturbance (0.07 km<sup>2</sup>) from the laying of 8 mooring lines and anchors from a semi-submersible drill rig while drilling the well. Direct highly localised loss of habitat and species will occur during

deployment with seabed compression and some scarring immediately following anchor and mooring line removal. Permanent area of impact is calculated to be 0.37km<sup>2</sup> as a result of pipeline and umbilical installation and tie in. Limited potential impact on seabed sensitivities was identified with no reef, sponge aggregations or ocean quahog identified during the survey.

The developer has committed to a detailed pipeline route survey prior to pipeline installation to inform design and location and to aid micro siting to avoid sensitivities such as potential stony reef. The preferred pipeline and umbilical installation option is on cleared seabed with rock cover for stabilisation to prevent upheaval buckling, worst-case considers the option of positioning a rock carpet from fall pipe vessel on the seabed prior to pipelay, berm height 0.5 m and base width 11 m (production pipeline) and 8 m (umbilical) laying the lines followed by coverage by rock for stabilisation, up to 543,854 tonnes of rock impacting 0.3 km<sup>2</sup> of seabed.

Dredging is proposed to flatten sand wave crests over a 2.5 km section of production pipeline route near the well. Boulder clearance may be required for the umbilical and export pipeline production route preparation, the latter likely to preclude trench and burial as an installation option. Disturbance of the seabed while moving boulders and dredging sand wave crests using mass flow excavator is likely to result in sediment re-suspension. Temporary loss and disturbance will be localised, and natural trenches used where possible, identified by detailed pipeline survey to minimise impact.

Mattresses will be deposited to protect spools, jumpers and flexible flow line at wellhead, pipeline end, umbilical end, pigging and tie in structures. Existing rock at Edradour and HTT1-2 will be moved to replace the GRP at the former and enable production pipeline tie in at the latter. Rock and mattress will cover existing pipeline crossings. The area covered by tie in deposits is 0.02 km<sup>2</sup> of seabed and includes 5,000 tonnes of additional rock.

Water-based mud drill cuttings will be discharged to sea (about 512 tonnes, of which 11 tonnes may be contaminated with up to 0.1 tonnes reservoir hydrocarbon which will be treated prior to discharge). Modelling indicates drill cuttings will settle within 690 m of the well with most impact within 50 m radius. Seabed cement discharge while setting the conductor will be minimised. Localised smothering and settlement of fines will have a limited and temporary impact on the benthic environment. A wellhead and Christmas tree with protection structure will be installed at the well.

The loss of seabed habitats will be minimal with a low incidence of stony reef identified from site survey. Impact on benthic species, including ocean quahog if present, is likely to be highly localised. Spawning sandeel prefer the sand wave habitat but, like herring and cod, are usually found in shallower water than at the Victory development area. Sensitive spawning species prefer shallower habitat and localised impacts are unlikely to significantly impact fish species alone or cumulatively taking account of high intensity demersal fishing in the area.

Localised seabed impacts from the development are unlikely to have a significant effect on fish species. The Faroe-Shetland Sponge Belt NCMPA is 8 km from Victory at the closest point. Deep sea sponge aggregations typically prefer waters depths in excess of 250 m and the Victory development area is approximately 160 m deep. Oil and gas activity is low in the area with Victory unlikely to significantly impact the area alongside other oil and gas activities.

I agree with the assessment in the Environmental Statement that there will not be a likely significant environmental effect from temporary or permanent seabed impacts, noting the limited area of permanent impact, taking account of potential site sensitivities and potential recovery from temporary loss and disturbance. The detailed pipeline survey will enable optimisation of pipeline routing. The developer has committed to reviewing the pipeline design to minimise rock deposits, minimise the installation disturbance corridor and existing deposit

disturbance, will install along existing sand wave troughs where available and clean drill cuttings prior to discharge.

## Emissions to air:

Local air quality and global climate are the principal receptors considered in the ES with reference to impacts from atmospheric emissions though other impacts such as ozone and photochemical smog are noted in brief.

Emissions during the development phase are from combustion equipment on the drill rig, helicopter, supply and construction vessels associated with drilling, well testing, pipeline/ umbilical installation, tie in and commissioning. Emissions were re-evaluated by the developer following revision of production forecast to 2034. The developer has estimated worst case emissions are a minimal contribution of total offshore emissions. There will be localised adverse impact on air quality over a short period, however emissions disperse rapidly offshore with no impact including cumulatively/ transboundary upon air quality taking account of proximity to other development and receptors. A range of mitigation measures are proposed to minimise vessel emissions including review of emissions footprint during rig selection, reducing rig mobilisation time and optimising vessel use. Shipping is subject to the IMO phase out of GHG emissions.

The developer has estimated worst case emissions and compared them to UK carbon budgets to achieve the net zero target. Global warming potential from the development phase, including drilling, installation and commissioning is calculated as 25,350 tonnes of  $CO_2$  equivalent, 0.0013% of the UK's 4th carbon budget (for 2023-27, when the development phase will take place).

While SGP is out of scope of the ES, Victory will require it to revert from the current single compression train to two train operation increasing emissions from 150,000 to 200,000 tonnes  $CO_2$  per year during early field life. The developer states that electrification of SGP with renewable power is being investigated. There will be no change to flaring at SGP from the project. Average emissions intensity through the operations phase (life of field) at SGP is 17 kg  $CO_2e$ /boe.

The developer recognises that all greenhouse gas emissions contribute cumulatively to climate change due to residence time in the atmosphere. The developer states total emissions from the project are minimal compared to the overall UK total, providing a supply of gas for domestic consumption, saving an estimated 150,000 tonnes of  $CO_2$  over the life of field when compared to importing gas to meet domestic demand during transition to Net Zero. The developer has confirmed that the development aligns with Net Zero, the North Sea Transition Deal, Energy White Paper and the OGA Strategy. The developer has also designed the Victory development to allow for potential reuse of the site for  $CO_2$  storage.

I concur with the assessment in the ES there will be minimal impact arising from the development on air quality either at project or cumulative level. I am satisfied that emissions will not have a likely significant effect on the environment.

## Discharges to sea:

Discharges to sea from the drilling phase will comprise of WBM drill cuttings clean up, completion and fluid returns during well testing. All returns to the semi-submersible drilling unit will be separated, with fluids containing residual reservoir hydrocarbon cleaned, filtered, and analysed prior to discharge. Discharges will also occur during installation and commissioning of infrastructure. Chemicals will be selected to ensure no likely significant effect on water quality and marine life, with any impact being highly localised and of short duration with dilution and degradation. Concurrent discharges are possible with drilling and subsea installation

scheduled in the same period of 2025. Cumulative impacts with other oil and gas activities are unlikely.

I agree with the assessment of the impact of the project on water quality and marine organisms from discharges to sea is no likely significant effect on the environment taking account of the dilution and dispersion and selection of low-risk chemicals.

## Underwater noise:

The primary source of noise during the project results from the piling of the WHPS, PLEM, pigging skid and tie in/protection structures. The main receptors of underwater noise are marine mammals, spawning and sensitive fish species. Given the noted populations of cetaceans and fish throughout the project area, the sensitivity to noise was assessed. Temporary behavioural change could occur in marine mammal species. Fish species such as herring, lemons sole, cod, ling, and whiting and other PMF fish species may be present in the area. The piling works will be temporary in nature lasting approximately a week. Piling is likely to be undertaken in the summer months and will not be continuous throughout with energy ramp up enabling individuals to move away. The developer has committed to standard piling mitigation measures, and it is unlikely that there will be a significant impact on fish or marine mammals. Noise from dynamic positioning thrusters, drilling and vessels will be low level, continuous and temporary with no significant effect on the marine environment.

Having considered the information provided I agree with the results of the noise assessment that no likely significant effect on the environment is anticipated from the noise generated by the project.

## Accidental events:

The ES considers potential for accidental events, including worst case of a well blow out, and also considers rupture of the production pipeline or loss of drill rig inventory from collision, as events with potential likely significant effect.

Modelling of a hydrocarbon release from a subsea blowout was undertaken as worst case. The expected hydrocarbon is mostly dry gas but contains light condensate oil. Condensate is expected to disperse over a wider area, biodegrade and evaporate quickly with potential for light shoreline oiling on Shetlands coast at any time of year and moderate (28% chance in autumn) as a result of a well blow out. The shortest arrival time is predicted to be 50 hours in winter. There is a low probability of hydrocarbon release crossing the UK/ Faroe median line (3% chance in winter) and UK/ Norwegian median line (9% probability in autumn) located 202 km east of Victory with a 1% probability of shoreline oiling there in winter and autumn.

The potential effects of an accidental release of hydrocarbons on environmental receptors included seabed protected sites, water quality, fish, marine mammals, seabirds, the coast, and socio-economic receptors (aquaculture and tourism) were assessed. The risk of surface oiling on Shetland coastal sites was considered to be low. The risk for seabirds from a well blow out was assessed as moderate because the mitigation measures in place mean such an event is rare, even though the sensitivity of the seabirds to a worst-case condensate blow out could be considered to be very high. Transboundary effects were assessed as not significant. The probability of a spill is highly unlikely with an extensive array of control measures in place and an accidental event would be actively managed.

The probability of an accidental event was considered highly unlikely to occur due to the preventative mitigation measures to prevent an accidental release of hydrocarbons.

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

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.

Measures to reduce risk of a well blowout:

- a) Shallow gas survey before drilling;
- b) Use of appropriate methods to maintain well control;
- c) Operations in accordance with well plan, independently examined to ensure well control is maintained;
- d) Deployment of a blowout preventor regularly tested and maintained;
- e) Well procedures to control the well in the event of a blowout;
- f) A capping device or the drilling of a relief well;
- g) An Oil Pollution Emergency Plan with arrangements to respond to an incident;
- h) Access to Oil Spill Response Limited (OSRL);
- i) A counter pollution response strategy and enactment of agreements with neighbouring countries to mutually support a response;
- j) The well will have a permanent 500m safety exclusion zone, marked on charts, fishing vessels must not enter this area.

Measures to reduce risk of pipeline rupture and release of condensate and gas to sea:

- a) stringent design specification;
- b) leak testing and over pressure testing at commissioning;
- c) corrosion control and monitoring during operation of temperature and pressure;
- d) automatic shutdown systems;
- e) protection from fishing gear and anchors by rock deposits and regular inspection.

Collision with drill rig/ vessel releasing diesel inventory.

- a) Navigational control measures by condition of Consent to Locate permit;
- b) Statutory 500m exclusion zone while drilling well;
- c) Vessels with navigational measures to prevent collision including additional guard vessels during construction;
- d) Ship Oil Pollution Emergency Plan with arrangements for responding to an incident.

Although a significant effect to the environment would be expected in the case of an unplanned, accidental well blow-out from the Victory well (or pipeline release/ vessel or drill rig spill), albeit short term and localised, the mitigation measures and commitments in place above, will seek to avoid and/or reduce the unlikely impact as far as possible.

I therefore agree with the conclusion that a well blowout (worst case) does have the potential to significantly impact the environment, however, mitigation measures and commitments will be in place to reduce the risk of a well blowout occurring, to as low a risk as possible.

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

Further to the conclusion above, the following conditions should be attached to the agreement to the grant of consent:

Not applicable.

