Green Volt Offshore Wind Farm

Without-Prejudice Derogation Case Appendix

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1 Introduction

This document should be read in conjunction with the "Without-Prejudice HRA Derogation Case" [1]

1.1 Project Objectives

Table 4.3, below, is an extract from the Without-Prejudice HRA Derogation Case which describes Project Objectives for the Green Volt Offshore Wind Farm.

Table Error! No text of specified style in document.**.1 Project Objectives of Green Volt (taken from Without-Prejudice HRA Derogation Case)**

ID	Project Objective
1	Cut emissions from oil and gas production operations in Scottish waters to support the NSTD decarbonisation targets and the Scottish Government's INTOG Sectoral Marine Plan (and the associated CES INTOG leasing round).
2	Deliver a substantial contribution of new low carbon electricity to the Scottish North Sea Oil & Gas sector before 2030
3	Contribute to Scotland's commitments to address global climate change and achieve net zero by 2045.
4	Lead the scaling up of the floating offshore wind supply chain in Scotland in the 2020s, ahead of ScotWind developments in the 2030s, with the associated economic development benefits for Scotland.
5	Make efficient use of and optimise generation capacity within the constraints of a site in reasonable proximity to the Buzzard oil and gas Platform Complex.

2 Updates to the Alternatives Discussion

2.1 Alternative Projects

The Without-Prejudice HRA Derogation Case ("Shadow Derogation Case") establishes the need for Green Volt ("the Project") in the context of Scottish and UK policy. The Shadow Derogation Case also explains why there are no feasible alternatives to the Project in terms of alternative energy sources, locations, designs and the stated objectives of the Project. The analysis clearly demonstrates the lack of feasible alternative solutions to the Project. This is particularly the case given the long-distance and in-combination nature of adverse effects arising from the Project, and generally from offshore wind farms.

Sections 4.4.3.2 and section 4.4.3.3 of the Shadow Derogation Case fully outline that other locations for the Project would not meet the Project objectives nor qualify as feasible alternative solutions. "*The siting, design and refinement of the Project have taken account of environmental, physical, technical, commercial and societal considerations and opportunities as well as engineering requirements*."[2] For those same reasons, other projects, either developed or in planning, would also not meet the specific Project objectives as they will be designed with different goals in mind. ScotWind projects, for example, were built upon the Sectoral Marine Plan for Offshore Wind Energy which used proximity to oil and gas as an exclusion when identifying areas for future potential development. In contrast, the Project Objective ID1 is to "*Cut emissions from oil and gas production operations in Scottish waters to support the NSTD decarbonisation targets [50% cut by 2030] and the Scottish Government's INTOG Sectoral Marine Plan (and the associated CES INTOG leasing*

[1] flo-gre-rep-0021_without_prejudice_derogation_case_v2_anonymised_redacted.pdf (marine.gov.scot)
[2] flo-gre-rep-0021_without_prejudice_derogation_case_v2_anonymised_redacted.pdf (marine.gov.scot)

round)" (Table 4.3, above) – the proximity to oil and gas operations is key to achieving this primary objective.

The Scottish Government has set out an ambition for up to 11 GW of offshore wind by 2030, and the Project is programmed for delivery before 2030. As of writing, the Scottish Government has not set any specific ambition or target for offshore wind beyond 2030 (although net zero by 2045 is a legal obligation). The Draft Energy Strategy and Just Transition Plan (ESJTP) consultation[3] sought views from stakeholders on the need to increase offshore wind ambitions for 2030 and whether there was a need to set a further ambition for 2045. The consultation responses, presented in the Analysis of Consultation Responses for the Draft Energy Strategy and Just Transition Plan[4] demonstrates support for new and increased targets. Given the increased UK targets and need for energy security, it is likely that the final ESJTP will set out a similar increase. The UK has established greater offshore wind targets of 50 GW by 2030, of which 5 GW should be floating offshore wind.

There are no other offshore wind projects at the same stage of development at this time in Scotland, other than the Berwick Back project which is not designed to meet goal of oil and gas production decarbonisation, and Green Volt is the only advanced floating offshore wind project of this scale.

Core to the objectives of the Project is delivery before 2030 (Project objectives ID1, ID2 and ID4), which remains achievable. Contributing to meeting the NSTD decarbonisation targets, the established Scottish and UK 2030 policy targets ambitions, the net zero commitments and the wider UK policy ambitions will require the Project to be consented and delivered as soon as possible. Therefore, no other project offers a feasible alternative in light of these targets.

2.2 Alternative INTOG Projects

As established above, offshore wind projects in different locations do not meet the alternatives requirement. It is also clear that whilst there may be other "Targeted Oil and Gas" ("TOG") projects to be developed in the future, they are not alternative solutions to the Project.

Whilst other TOG projects will be developed with oil and gas decarbonisation in mind, their site selection process (like the Project) will include specific consideration of the installations to be electrified. Project Objective ID5 is to "*Make efficient use of and optimise generation capacity within the constraints of a site in reasonable proximity to the Buzzard oil and gas Platform Complex*". The Project has now secured Heads of Terms ("HoT") with the relevant oil and gas operators who, through the HoT, have established their preferred route to decarbonisation. This means that the operators have identified the Project as their route to decarbonisation and electrification over alternative projects and alternative electricity supply options.

It it also of note that no permitting process has publicly commenced for any other TOG facility within practical range of connection to assets in the Outer Moray Firth which are suitable for electrification (this typically requires 80km or shorter). This is likely to render any a solution impossible to deliver before 2030.

Therefore, no other potential TOG project is cable of meeting Project Objectives ID1, ID2, or ID5 and would fail to qualify as a feasible alternative.

[3] Draft Energy Strategy and Just Transition Plan - gov.scot (www.gov.scot)
[4] Analysis of Consultation Responses for the Draft Energy Strategy and Just Transition Plan (www.gov.scot)

2.3 Alternative – Direct Cable from Shore

Whilst conceptually simple, the direct connection of remote oil and gas facilities to the UK grid is not a feasible alternative to Green Volt. There are four key issues with a direct cable from shore solution:

(i) Lack of available grid connection points and/or landing points.

There are significant constraints to the connection of offshore oil and gas facilities to the grid in Scotland. Constraints for access to grid connections for generating capacity for offshore wind are well known, but there are also challenges to access for "demand", where power is to be taken from the grid.

- NE Scotland is facing significant constraints on both the number of grid connection "bays" available and also the number of physical landing points along the coastline for offshore cables.
- There is no way to readily connect a cable to the UK grid – the Scottish Government's NetZero, Energy and Transport Committee noted that developers are being asked to wait upwards of a decade for a connection (Scotland's Electricity Infrastructure, Sep 2023)[5]
- There is no "plug and play" option available for O&G electrification. In April 2023, the SSEN Transmission Peterhead Net Zero 2030 Developments Booklet[6] described future works which will energise by 2031. These works are linked to the ambition to electrify Central North Sea oil and gas assets, so the earliest possible date for electrification of the CNS assets (outside INTOG) is after 2031.
- The proposed SSEN Transmission works around Peterhead[7] do not include any reinforcement to offer additional grid demand connections towards other oil and gas facilities (it may be also noted that these would require additional bays, cables and consented landing points). Therefore, it can be expected that any oil and gas facility seeking a new demand cable from shore will receive an even later date than 2031, resulting in a much later energisation date than currently available from Green Volt. This means the demand cable from shore is unable to meet Project Objectives ID1 and ID2.
- Aside from connection capacity on the grid, there are material constraints both onshore and offshore in the Peterhead area. The NGESO Beyond 2030 report, published in March 2024, illustrates the challenge for Scotland[8]. Additional cable routes for ScotWind, INTOG and National Grid Infrastructure projects are all expected to seek landfall in this area due to the existing and future grid infrastructure planned at this location.
- No permitting process has commenced to allow direct electrification via "cable from shore" for oil and gas facilities being addressed by Green Volt in the Outer Moray Firth. This is likely to render any a solution impossible to deliver before 2030.
- Together, this means the alternative direct connection from shore would fail to meet the 2030 NSTD timeline for emissions reduction (Objective ID1).

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[5] Scotland's Electricity Infrastructure: inhibitor or enabler of our energy ambitions? (https://bprcdn.parliament.scot/published/NZET/2023/9/12/00145e0a-634b-4e93-87f7-cb412979e0d6-2/NZETS062023R12.pdf)

[6] https://www.ssen-transmission.co.uk/globalassets/projects/netherton-hub-downloads/ssen---peterhead-net-zero-2030-developments-dav---28pp-booklet---27283---digital.pdf

[7] https://www.ssen-transmission.co.uk/globalassets/projects/netherton-hub-downloads/ssen---peterhead-net-zero-2030-developments-dav---28pp-booklet---27283---digital.pdf

[8] Beyond 2030 - A national blueprint for a decarbonised electricity system in Great Britain (March 2024, see Page 53 "North of Scotland") download (nationalgrideso.com)

(ii) Use of Grid Power

- At the time of writing, average UK grid power is approximately 50% fossil fuel based[9], whereas direct supply from the wind farm can provide up to 85% of energy needed by the platforms. A cable from shore therefore fails to meet Project Objective ID2 – provision of new low carbon electricity to the Scottish oil and gas sector.

(iii) Progress towards Net Zero

A direct cable to shore would not provide additional low carbon generation, so fail to maximise the potential of the Project to contribute towards Scotland's NetZero 2045 goal (failing to meet Project Objective ID3, including Scotland's commitment to deliver 11GW of offshore wind by 2030).

It would also fail to meet Project Objective ID4 (scale up floating offshore wind).

It would also fail to meet Project Objective ID5 because future development of the Green Volt site would not have the opportunity to decarbonise nearby oil and gas facilities.

(iv) Stranded assets

It may be further noted that assets required for direct cable to shore are likely to be stranded assets following cessation of production for oil and gas facilities. Most oil and gas assets in the Outer Moray Firth are legacy assets which are expected to cease production before 2040, but even longer life assets are likely to cease production early in the 2040s.

There would be no use for a dedicated "direct cable from shore" and associated substation facilities once the O&G facility lifetime has been exhausted – it would become a stranded asset.

Such facilities would be unsuitable for commercial scale offshore wind as power levels for offshore oil and gas demand are much smaller (typically 20-70MW per asset vs 500-1,000 MW per asset for commercial scale offshore wind).

This severely impacts the economic case for a "direct cable from shore" and it is likely that such an investment could not be determined to be "reasonable" under the OGA Plan[10].

2.4 Summary Table

The following table provides a brief summary of Design Alternatives and may be considered to replace Table 4.8 in the Shadow Derogation Case.

Design Alternative	Alternative Option Considered	Reason Alternative Option Discounted
Do nothing (see Section Error! Reference source not found.)	Not progressing the Project	Does not deliver any of the Project objectives and is therefore not feasible alternative. Does not meet ID1, ID2, ID3, ID4 or ID5.

[9] https://www.nationalgrideso.com/news/britains-electricity-explained-2023-review
[10] OGA Plan on Emissions Reduction (https://www.nstauthority.co.uk/regulatory-information/regulatory-framework/the-oga-strategy/oga-plan-emissions-reduction/)

Alternative forms of energy generation (see Section Error! Reference source not found.)	O&G direct supply from UK grid.	Lack of suitable grid connections available. Cannot meet objectives ID1 or ID2. Lack of available cable landing points. Will not be compliant with the timeframe of the North Sea Transition Deal 2030 goals, or O&G decarbonisation requirements for 1 Jan 2030 as set out by the recently published OGA Plan (legal feasibility) Does not contribute to offshore wind / Netzero objectives ID3, ID4, ID5. Stranded assets would be uneconomic and have significant environmental impact. Extensive embedded new emissions for installation of short life infrastructure.
Alternative Location (see Section Error! Reference source not found.)	Locations outside the UK	Do not deliver any of the of the Project objectives. Does not meet ID1, ID2, ID3, ID4 or ID5.
	Locations outside INTOG	No other offshore wind projects at the same stage of development at this time in Scotland, other than the Berwick Back project which is not designed to meet oil and gas decarbonisation. Will not be compliant with the timeframe of the North Sea Transition Deal 2030 goals, or O&G decarbonisation requirements for 1 Jan 2030 as set out by the recently published OGA Plan (legal feasibility) Green Volt is the only advanced floating offshore wind project of this scale. Other offshore wind projects are not capable of meeting Objectives ID1, ID2 or ID5.
	Locations within INTOG	Green Volt has secured commercial Heads of Terms for energy offtake agreements with multiple oil and gas operators in the Outer Moray Firth, enabling delivery of renewable electricity to these assets before 2030, as required by the OGA Plan and North Sea Transition Deal. It is clear that whilst there may be other “Targeted Oil and Gas” (“TOG”) projects to be developed in the future, they cannot be developed by 2030 and are not alternative solutions to the Project and do not meet Objective ID1, ID2 or ID5.