

Cenos Offshore Windfarm Limited



Cenos EIA

Chapter 24 – Conclusions and Next Steps

ASSIGNMENT A100907-S01
DOCUMENT A-100907-S01-A-ESIA-023
CLIENT CEN001-FLO-CON-ENV-RPT-0025



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ACRONYMS

ACRONYM	DEFINITION
CES	Crown Estate Scotland
CNS	Central North Sea
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EICC	Export / Import Cable Corridor
FTUs	Floating Turbine Units
INTOG	Innovation and Targeted Oil & Gas
km	Kilometre
MD-LOT	Marine Directorate - Licensing Operations Team
MLA	Marine Licence Application
NCMPA	Nature Conservation Marine Protected Area
NM	Nautical Miles
PDE	Project Design Envelope
WTG	Wind Turbine Generator(s)

GLOSSARY

TERM	DEFINITION
2023 Scoping Opinion	Scoping Opinion received in June 2023, superseded by the 2024 Scoping Opinion.
2023 Scoping Report	Environmental Impact Assessment (EIA) Scoping Report submitted in 2023, superseded by the 2024 Scoping Report.
2024 Scoping Opinion	Scoping Opinion received in September 2024, superseding the 2023 Scoping Opinion.
2024 Scoping Report	EIA Scoping Report submitted in April 2024, superseding the 2023 Scoping Report.
Area of Opportunity	The area in which the limits of electricity transmission via High Voltage Alternating Current (HVAC) cables can reach oil and gas assets for decarbonisation. This area is based on assets within a 100 kilometre (km) radius of the Array Area.
Array Area	The area within which the Wind Turbine Generators (WTGs), floating substructures, moorings and anchors, Offshore Substation Converter Platforms (OSCPs) and Inter-Array Cables (IAC) will be present.
Cenos Offshore Windfarm ('the Project')	'The Project' is the term used to describe Cenoss Offshore Windfarm. The Project is a floating offshore windfarm located in the North Sea, with a generating capacity of up to 1,350 Megawatts (MW). The Project which defines the Red Line Boundary (RLB) for the Section 36 Consent and Marine Licence Applications (MLA), includes all offshore components seaward of Mean High Water Springs (MHWS) (WTGs, OSCP, cables, floating substructures moorings and anchors and all other associated infrastructure). The Project is the focus of this Environmental Impact Assessment Report (EIAR).
Cenos Offshore Windfarm Ltd. (The Applicant)	The Applicant for the Section 36 Consent and associated Marine Licences.
Cumulative Assessment	The consideration of potential impacts that could occur cumulatively with other relevant projects, plans, and activities that could result in a cumulative effect on receptors.

TERM	DEFINITION
Developer	Cenos Offshore Windfarm Ltd., a Joint Venture between Flotation Energy and Vårgrønn As (Vårgrønn).
Environmental Impact Assessment (EIA)	The statutory process of evaluating the likely significant environmental effects of a proposed project or development. Assessment of the potential impact of the proposed Project on the physical, biological and human environment during construction, operation and maintenance and decommissioning.
Environmental Impact Assessment Regulations	This term is used to refer to the Environmental Impact Assessment Regulations which are of relevance to the Project. This includes the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2017, the Marine Works (Environmental Impact Assessment) (Scotland) Regulations 2017 (as amended); and the Marine Works (Environmental Impact Assessment) Regulations 2007.
Environmental Impact Assessment Report	A report documenting the findings of the EIA for the Project in accordance with relevant EIA Regulations.
Export/Import Cable	High voltage cable used to export/import power between the OSCP and Landfall.
Export/Import Cable Bundle (EICB)	Comprising two Export/Import Cables and one fibre-optic cable bundled in a single trench.
Export/Import Cable Corridor (EICC)	The area within which the Export/Import Cable Route will be planned and the Export/Import Cable will be laid, from the perimeter of the Array Area to MHWS.
Export/Import Cable Route	The area within the Export/Import Export Corridor (EICC) within which the Export/Import Cable Bundle (EICB) is laid, from the perimeter of the Array Area to MHWS.
Floating Turbine Unit (FTU)	The equipment associated with electricity generation comprising the WTG, the floating substructure which supports the WTG, mooring system and the dynamic section of the IAC.
Flotation Energy	Joint venture partner in Cenoss Offshore Windfarm Ltd.

TERM	DEFINITION
<p>Habitats Regulations</p>	<p>The Habitats Directive (Directive 92/43/ECC) and the Wild Birds Directive (Directive 2009/147/EC) were transposed into Scottish Law by the Conservation (Natural Habitats &c) Regulations 1994 ('Habitats Regulations') (up to 12 NM); by the Conservation of Offshore Marine Habitats and Species Regulations 2017 ('Offshore Marine Regulations') (beyond 12 NM); the Conservation of Habitats and Species Regulations 2017 (of relevance to consents under Section 36 of the Electricity Act 1989); the Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001; and the Wildlife and Countryside Act 1981. The Habitats Regulations set out the stages of the Habitats Regulations Appraisal (HRA) process required to assess the potential impacts of a proposed project on European Sites (Special Areas of Conservation, Special Protection Areas, candidate SACs and SPAs and Ramsar Sites).</p>
<p>Habitats Regulations Appraisal</p>	<p>The assessment of the impacts of implementing a plan or policy on a European Site, the purpose being to consider the impacts of a project against conservation objectives of the site and to ascertain whether it would adversely affect the integrity of the site.</p>
<p>High Voltage Alternating Current (HVAC)</p>	<p>Refers to high voltage electricity in Alternating Current (AC) form which is produced by the WTGs and flows through the IAC system to the OSCP. HVAC may also be used for onward power transmission from the OSCP to assets or to shore over shorter distances.</p>
<p>High Voltage Direct Current (HVDC)</p>	<p>Refers to high voltage electricity in Direct Current (DC) form which is converted from HVAC to HVDC at the OSCP and transmitted to shore over longer distances.</p>
<p>Horizontal Directional Drilling (HDD)</p>	<p>An engineering technique for laying cables that avoids open trenches by drilling between two locations beneath the ground's surface.</p>
<p>Innovation and Targeted Oil & Gas (INTOG)</p>	<p>In November 2022, the Crown Estate Scotland (CES) announced the Innovation and Targeted Oil & Gas (INTOG) Leasing Round, to help enable this sector-wide commitment to decarbonisation. INTOG allowed developers to apply for seabed rights to develop offshore windfarms for the purpose of providing low carbon electricity to power oil and gas installations and help to decarbonise the sector. Cenos is an INTOG project and in November 2023 secured an Exclusivity Agreement as part of the INTOG leasing round.</p>

TERM	DEFINITION
Inter-Array Cable (IAC)	The cables which connect the WTGs to the OSCPs. WTGs may be connected with IACs into a hub or in series as a 'string' or a 'loop' such that power from the connected WTGs is gathered to the OSCPs via a single cable.
Joint Venture	The commercial partnership between Flotation Energy and Vårgrønn, the shareholders which hold the Exclusivity Agreement with CES to develop the Cenoss site as an INTOG project.
Landfall	The area where the Export/Import Cable from the Array Area will be brought ashore. The interface between the offshore and onshore environments.
Marine Licence	Licence required for certain activities in the marine environment and granted under the Marine and Coastal Access Act 2009 and/or the Marine (Scotland) Act 2010.
Marine Protected Area (MPA)	Marine sites protected at the national level under the Marine (Scotland) Act 2010 out to 12 NM, and the Marine and Coastal Access Act 2009 between 12-200 NM. In Scotland MPAs are areas of sea and seabed defined so as to protect habitats, wildlife, geology, underseas landforms, historic shipwrecks and to demonstrate sustainable management of the sea.
Marine Protected Area (MPA) Assessment	A three-step process for determining whether there is a significant risk that a proposed development could hinder the achievement of the conservation objectives of an MPA.
Mean High Water Springs (MHWS)	The height of Mean High Water Springs is the average throughout the year, of two successive high waters, during a 24-hour period in each month when the range of the tide is at its greatest.
Mean Low Water Springs (MLWS)	The height of Mean Low Water Springs is the average throughout a year of the heights of two successive low waters during periods of 24 hours (approximately once a fortnight).
Mitigation Measures	<p>Measures considered within the topic-specific chapters in order to avoid impacts or reduce them to acceptable levels.</p> <ul style="list-style-type: none"> • Primary mitigation - measures that are an inherent part of the design of the Project which reduce or avoid the likelihood or magnitude of an adverse environmental effect, including location or design; • Secondary mitigation – additional measures implemented to further reduce environmental effects to 'not significant' levels (where

TERM	DEFINITION
	<p>appropriate) and do not form part of the fundamental design of the Project; and</p> <ul style="list-style-type: none"> • Tertiary mitigation – measures that are implemented in accordance with industry standard practice or to meet legislative requirements and are independent of the EIA (i.e. they would be implemented regardless of the findings of the EIA). <p>Primary and tertiary mitigation are referred to as embedded mitigation. Secondary mitigation is referred to as additional mitigation.</p>
Mooring System	<p>Comprising the mooring lines and anchors, the mooring system connects the floating substructure to the seabed, provides station-keeping capability for the floating substructure and contributes to the stability of the floating substructure and WTG.</p>
Nature Conservation Marine Protected Area (NCMPA)	<p>MPA designated by Scottish Ministers in the interests of nature conservation under the Marine (Scotland) Act 2010.</p>
Offshore Substation Converter Platforms (OSCPs)	<p>An offshore platform on a fixed jacket substructure, containing electrical equipment to aggregate the power from the WTGs and convert power between HVAC and HVDC for export/import via the Export/Import cable to/from the shore. The OSCP's will also act as power distribution stations for the Oil & Gas platforms.</p>
Onward Development	<p>Transmission projects which are anticipated to be brought forward for development by 3rd party oil and gas operators to enable electrification of assets via electricity generated by the Project. All Onward Development will subject to separate marine licensing and permitting requirements.</p>
Onward Development Area	<p>The area within which oil and gas assets would have the potential to be electrified by the Project.</p>
Onward Development Connections	<p>Oil and gas assets located in the waters surrounding the Array Area will be electrified via transmission infrastructure which will connect to the Project's OSCP's. These transmission cables are referred to as Onward Development Connections.</p>
Project Area	<p>The area that encompasses both the Array Area and EICC.</p>
Project Design Envelope	<p>A description of the range of possible elements that make up the Project design options under consideration and that are assessed as part of the EIA for the Project.</p>

TERM	DEFINITION
Study Area	Receptor specific area where potential impacts from the Project could occur.
Transboundary Assessment	The consideration of impacts from the Project which have the potential to have a significant effect on another European Economic Area (EEA) state's environment. Where there is a potential for a transboundary effect, as a result of the Project, these are assessed within the relevant EIA chapter.
Transmission Infrastructure	The infrastructure responsible for moving electricity from generating stations to substations, load areas, assets and the electrical grid, comprising the OSCPs, and associated substructure, and the Export/Import Cable.
Vårgrønn As (Vårgrønn)	Joint venture partner in Cenoss Offshore Windfarm Ltd.
Wind Turbine Generator (WTG)	The equipment associated with electricity generation from available wind resource, comprising the surface components located above the supporting substructure (e.g., tower, nacelle, hub, blades, and any necessary power transformation equipment, generators, and switchgears).
Worst-Case Scenario	The worst-case scenario based on the Project Design Envelope which varies by receptor and/or impact pathway identified.

24 CONCLUSIONS AND NEXT STEPS

24.1 Concluding statement

This Environmental Impact Assessment (EIA) has been undertaken in accordance with the relevant guidance and legislation for the Cenos Offshore Windfarm ('the Project') to support the Applications for Section 36 Consent and Marine Licences sought by Cenos Offshore Windfarm Ltd. ('the Applicant').

The Project is a floating offshore windfarm, which is located approximately 200 kilometres (km) offshore east of Aberdeen, from the closest edge of the Project Array Area, in the Central North Sea (CNS). The Project shall generate renewable electricity to the UK Grid from up to 95 Floating Turbine Units (FTUs) in addition to enabling efficient electrification of offshore Oil and Gas assets within the Onward Development Area. When wind speeds are insufficient to power the Oil and Gas assets directly, additional electricity would be imported from the UK grid through the Export/Import Cable connection.

The Project provides an opportunity to reduce emissions directly related to production activities associated with current oil and gas facilities located in the Innovation and Targeted Oil & Gas (INTOG) 'E-a Area', making a positive contribution towards the reduction of greenhouse gas emissions and ensuring a sustainable supply of renewable energy in the UK.

Alternatives have been considered for the Project in terms of the design options throughout the development process, and consideration of not developing the Project (the 'do nothing' option), within the context of government planning and Crown Estate Scotland (CES) leasing processes. The iterative site selection process involved consideration of environmental and technical constraints during the evolution of the Project to deliver the best on-balance solution for achieving the objectives of the Project whilst also adhering to the clearly defined bounds of the INTOG leasing round, as set out above. To-date, this has included:

- Refining the Project Design Envelope (PDE) following the EIA Scoping process to reduce (downward) the maximum parameters for the Project;
- Refining the Array Area within the East of Gannet and Montrose Fields Nature Conservation Marine Protected Area (NCMPA) to avoid greater areas of sublittoral muds, based on environmental data available during site selection;
- Refining the design options within the PDE taken forward to application phase in order to reduce the potential for impacts on the designated habitats and features of East of Gannet and Montrose Fields NCMPA; and
- Increasing the overall length of the Export/Import Cable Corridor (EICC) to avoid sensitivities, including avoiding all designated sites along the offshore EICC (> 12 Nautical Miles (NM)).

Refinement of the Project will continue throughout the post-consent / pre-construction phase, as informed by the output from further engineering and technical studies, Project evolution, technical engagement and regulatory requirements.

The Project has utilised a PDE approach to inform this Environmental Impact Assessment Report (EIAR). The PDE approach enables a range of values to be presented for each Project aspect, providing the flexibility to allow for further refinement of the Project design. The first version of the PDE was presented within the 2023 Scoping Report,

submitted to Marine Directorate - Licensing Operations Team (MD-LOT) in February 2023, and thereafter refined for the 2024 Scoping Report which was submitted to MD-LOT in April 2024. The PDE has since been further refined based on the results of environmental surveys, technical and engineering studies, and discussions with stakeholders and the community, as part of the EIA process. The PDE approach has been adopted in accordance with the Scottish Government (2022) Guidance on using the Design Envelope for Applications under Section 36 of the Electricity Act 1989. Within this EIAR, the design parameters which represent the worst-case scenario for the impact assessments have been determined using the PDE on a topic-by-topic basis, depending on the receptor and impact being considered. This is clearly explained in each topic-specific chapter in line with the Scottish Government Guidance on using the Design Envelope for Applications under Section 36 of the Electricity Act 1989 (2022), which allows for the realistic worst-case Project parameters and values to be presented and considered as part of the impact assessment, ensuring flexibility within the Project design. This approach results in an impact assessment, that provides security and confidence that the likely significant environmental effects of the Project will be no greater than those identified and assessed within the EIAR.

This EIAR provides the relevant environmental information required to enable a robust assessment of the potential significant effects on identified physical, biological, and human receptors throughout the course of the Project's lifecycle. The EIA process considers the environmental impact of works proposed as part of the construction (including pre-construction), operation and maintenance and decommissioning phases of a development. The EIA process is an approach to the systematic identification and assessment of potential effects of a development on the receiving environment, detailing the understanding of the existing environment (prior to the commencement of any development works). The significance of an effect was determined within each topic-specific assessment chapter by considering receptor sensitivity (e.g. the ability of the receptor to tolerate, adapt to and recover from a change within the marine environment) and the magnitude of effect (e.g. spatial extent, duration, frequency, intensity and likelihood). For each potential effect, the sensitivity and magnitude were then combined using a matrix approach to determine the potential consequence of the effect, ranging from negligible to major, where any effect of moderate or greater consequence was deemed significant in EIA terms. Expert judgement is particularly important when determining the significance of effect, in addition to industry best practice guidance, scientific research, and accepted approaches.

Each impact assessment took account of embedded mitigation measures, and where significant effects were identified in the initial assessment, appropriate and proportionate additional mitigation measures are proposed in order to reduce the residual effects to non-significant levels where possible. Monitoring requirements have also been outlined, as required, in each topic-specific assessment chapter to monitor the predicted effects of the Project on the receiving environment, and summaries are provided in **EIAR Vol. 2, Chapter 23: Summary of Mitigation and Monitoring**.

Overall, with the implementation of the identified mitigation measures (embedded and secondary) and monitoring proposals, with the exception of Ornithology the potential effects of the Project are assessed to be not significant in EIA terms (Table 24-1).

Table 24-1 Summary of residual EIA conclusions

EIA TECHNICAL CHAPTER	SUMMARY OF IMPACT ASSESSMENT		
	CONSTRUCTION PHASE (INCLUDING PRE-CONSTRUCTION)	OPERATION AND MAINTENANCE PHASE	DECOMMISSIONING PHASE
Marine Geology, Oceanography and Coastal Processes	No significant effects identified	No significant effects identified	No significant effects identified
Marine Water and Sediment Quality	No significant effects identified	No significant effects identified	No significant effects identified
Benthic Ecology	No significant effects identified	No significant effects identified	No significant effects identified
Marine Mammal Ecology	No significant effects identified	No significant effects identified	No significant effects identified
Ornithology	No significant effects identified	*No significant effects identified for the Project alone Moderate significant effects identified in the Assessment of Cumulative Effects	No significant effects identified
Fish and Shellfish Ecology	No significant effects identified	No significant effects identified	No significant effects identified
Commercial Fisheries	No significant effects identified	No significant effects identified	No significant effects identified
Shipping and Navigation	No significant effects identified	No significant effects identified	No significant effects identified
Marine Archaeology	No significant effects identified	No significant effects identified	No significant effects identified
Marine Infrastructure and Other Users	No significant effects identified	No significant effects identified	No significant effects identified
Military and Civil Aviation	No significant effects identified	No significant effects identified	No significant effects identified
Socio-economics, Tourism and Recreation	Moderate beneficial significant effect identified for 'Increased Gross Value Added'	No significant effects identified	No significant effects identified
Carbon and Greenhouse Gases	No significant effects identified	No significant effects identified	No significant effects identified

EIA TECHNICAL CHAPTER	SUMMARY OF IMPACT ASSESSMENT		
	CONSTRUCTION PHASE (INCLUDING PRE-CONSTRUCTION)	OPERATION AND MAINTENANCE PHASE	DECOMMISSIONING PHASE
Major Accidents and Disasters	No significant effects identified	No significant effects identified	No significant effects identified
Statement of Combined Effects	No significant effects identified	No significant effects identified	No significant effects identified

* Puffin: moderate significant impacts were concluded for cumulative distributional responses where the maximum recommended displacement rates (as per NatureScot Guidance) were used.

Gannet and kittiwake: moderate significant effects were determined for the cumulative effect of distributional responses and collision combined, for all scenarios considered. A single bird cannot be both displaced from a windfarm and collide with a WTG; however, the two impacts were considered additively which increases the overall likelihood of impact feeding into assessment.

For all species and impact pathways, when the scale of the effects from the Project alone was compared to the cumulative effect, it illustrated that the vast majority of the cumulative effect was associated with the additive effects from other Projects. The contribution of the Project represents a negligible portion of the cumulative effect conclusion. For all scenarios assessed, significant cumulative effects would be concluded with or without the Project's contribution. If Adverse Effects on Site Integrity (AEoSI) is concluded for any SPAs as part of the RIAA, it is noted that the compensatory measures proposed would fully mitigate any contribution of the Project to significant cumulative effects in EIA terms.

24.2 Next Steps

Following the submission and acceptance of the Section 36 Consent and Marine Licence Applications (MLA) and this supporting EIAR, the key next steps are as follows:

- **Consultation and publication notices:** The Applicant will issue all relevant public notices in accordance with relevant regulations and guidance from MD-LOT. MD-LOT will undertake the consultation with stakeholders;
- **Determination stage:** Scottish Ministers (via MD-LOT) will consider the information provided within this EIAR and supporting documentation, representations from the public, and any comments from consultees in the decision-making process to determine whether consent should be granted;
- **Notification of decisions:** If the Section 36 Consent and Marine Licences applied for are granted, a decision notice along with the Section 36 Consent and Marine Licences will be issued by Scottish Ministers (via MD-LOT) detailing the conditions to which the decision is subject. The Applicant will issue a public notice in accordance with the relevant regulations;
- **Post-consent:** The Applicant will continue to refine the PDE post-consent to develop the final design specifications and layout, which will be detailed in relevant plans as a part of the Project's consent and/or Marine Licence conditions. The final design will be informed by further survey work and environmental data collection, technical and engineering studies, technological advancements, supply chain considerations and discussions with stakeholders and the community. The Applicant will discharge and/or comply with all relevant Section 36 Consent and Marine Licence conditions within the timeframe specified and in consultation with stakeholders where relevant; and



- **Construction, operation and maintenance, and decommissioning:** Once all necessary environmental, financial and supply chain requirements are secured, the construction of the Project will commence. The construction programme will depend on various factors, including: contractor and vessel availability; weather conditions; and supply chain and logistical considerations. However, it is envisaged that construction may commence (in the form of pre-construction site preparation) as early as 2030 and will last up to six years. Once the construction and commissioning of the development are complete, the Project will enter the operation and maintenance phase, for which the Applicant has sought to consent a 35-year operational period. The decommissioning phase will commence at the end of the operational life of the Project.

The Onward Development Connections for oil and gas electrification will be finalised and brought forward by 3rd party oil and gas operators, subject to separate marine licensing and permitting requirements (including separate EIA, as appropriate). The Project will continue to engage with operators in order to progress the electrification of oil and gas assets.

24.3 References

Scottish Government (2022) Guidance on using the Design Envelope for Applications under Section 36 of the Electricity Act 1989. Available online at: <https://www.gov.scot/publications/guidance-applicants-using-design-envelope-applications-under-section-36-electricity-act-1989/> [Accessed on 04/11/2024]