Offshore Wind Power Limited

West of Orkney Windfarm Onshore EIA Report

Volume 1, Chapter 2 – Need for the Project

WO1-WOW-CON-EV-RP-0082: Approved by S.Kerr
Document Control 20/10/2023

ASSIGNMENT L100632-S06

DOCUMENT L-100632-S06-A-ESIA-002

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West of Orkney Windfarm

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REV	DATE	DESCRIPTION	ISSUED	CHECKED	APPROVED	CLIENT
A01	10/10/2023	Issued for Use	AF	NB	LS	OWPL
R03	09/06/2023	Re-issued for Review	AF	LS	LS	OWPL
R02	23/01/2023	Re-issued for Review	AF	NB	LS	OWPL
R01	25/11/2022	Issued for Review	AF	LS	LS	OWPL

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2 NEED FOR THE PROJECT

2.1 Introduction

This chapter of the Onshore Environmental Impact Assessment (EIA) Report presents a summary of the need for renewable energy developments such as the Project, and the main climate change and energy objectives and targets and the underpinning legislation, policy and strategy documentation.

Scotland has great potential for renewable energy development. The policy context in support of renewable energy and offshore wind in Scottish Waters is outlined in this chapter, in addition to the key political discussions and Scottish Government position on climate change strategy.

The Project will act to offset Greenhouse Gas (GHG) emissions[1] that might otherwise be produced by other means of electricity generation and will also increase the security of electricity supply, thereby assisting with the delivery of the United Kingdom (UK) and Scottish Government policy and the meeting of renewable energy commitments and net-zero targets. It will also provide socio-economic benefits to Scotland and the UK and contribute to the development of the offshore wind industry in the domestic markets (see Offshore EIA Report; chapter 19: Socio-economics). This will be in line with the Project commitments outlined in the Supply Chain Development Statement (SCDS).

The beneficial impact of the Project is outlined in the following sections, centred around four key areas which summarise the need for the project:

- Climate change;
- New energy infrastructure;
- Energy security; and
- Economic benefit.

Finally, quantification of emissions reduction, energy provision and carbon emissions offset periods calculated for the Project are also provided in section 2.7.

2.2 Climate change

2.2.1 Overview

In April 2019, the First Minister of the Scottish Government ('First Minister') and subsequently the UK Parliament, declared a climate emergency, publicly stating their concern about climate change and its consequences (Climate Emergency Declaration (CED), 2019a; CED, 2019b).

[1] *GHG is a generic term for the collection of gaseous constituents in the atmosphere. In this chapter a focus is on anthropogenic GHGs, such as Carbon dioxide (CO_2), associated with the Project.*

The United Nations (UN) has been leading on global climate summits ('Conference of the Parties", COP) for nearly three decades. International consensus on the need to tackle climate change is reflected in The Paris Agreement[2], adopted at COP21 in 2015 by 196 parties to the UN Framework Convention on Climate Change (UNFCCC). For the first time it created a legally-binding, international agreement towards tackling climate change. The UK (and hence Scotland) is legally bound to the Paris Agreement. The member governments agreed:

- A long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels;
- To aim to limit the increase to 1.5°C since this would significantly reduce risks and the impacts of climate change;
- On the need for global GHG emissions to peak as soon as possible; and
- To undertake rapid reductions thereafter in accordance with the best scientific guidance available.

The Intergovernmental Panel on Climate Change (IPCC) is currently in its Sixth Assessment cycle and have published reports from its three working groups. In August 2021, Working Group I issued Climate Change 2021: The Physical Science Basis. The Working Group I report emphasised that global evidence of the effects of human-induced climate change (e.g. heatwaves, heavy precipitation, droughts) has strengthened. Global surface temperatures will continue to increase until at least mid-century under all emissions scenarios considered and global warming of 1.5°C and 2°C will be exceeded within the 21st Century unless significant reductions in CO_2 and GHG emissions occur in the coming years (IPCC, 2021). Limiting human-induced global warming requires limiting cumulative CO_2 emissions, reaching at least net-zero CO_2 emissions and strong reductions in other GHG emissions (IPCC, 2021). In February 2022, Working Group II issued Climate Change 2022: Impacts, Adaptation and Vulnerability. The Working Group II report emphasised that human-induced climate change, including more frequent and intense extreme events, has caused widespread adverse impacts and related losses and damage to nature and people, beyond natural climate variability. In April 2022, Working Group III issued Climate Change 2022: Mitigation of Climate Change. The Working Group III report emphasises that modelled pathways that limit global warming involve rapid, deep and immediate GHG emission reductions in all sectors. The strategies to achieve these reductions include transitioning from fossil fuels to very low and zero-carbon energy sources such as renewables, alternative energy carriers and energy efficiency, in line with the draft Energy Strategy and Just Transition Plan (Scottish Government, 2023a).

The UK hosted the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow, Scotland, in November 2021. The COP26 summit focused on accelerating action towards achieving the goals of the Paris Agreement and the UNFCCC (see section 2.2.2.1; Table 2-1). The principal outcome of COP26 was the Glasgow Climate Pact, a series of decisions and resolutions that build on the Paris Agreement (as detailed in section 2.2.2.1; Table 2-1) and establish what needs to be done to accelerate action on climate change within the current decade. Whilst every Party at COP26 – representing almost 200 countries – agreed to the Glasgow Climate Pact, the pact itself is not legally binding. The First Minister addressed the COP26 delegation, detailing how Scotland will continue to play a leading role in tackling climate change (Scottish Government, 2021a). The address reaffirmed Scotland's renewable energy potential and the role that renewable energy developments, including offshore wind, can play in realising Scotland's targets of becoming a net-zero country by 2045 at the latest. Following COP26, the First Minister went on to address the

[2] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.

Scottish Parliament outlining the progress made through the Glasgow Climate Pact, but also the steps that still need to be taken (Scottish Government, 2021b). The First Minister stated:

"the world is still on a path to temperature increases of well over 2 degrees…. To keep 1.5 degrees in reach, global emissions must be almost halved by the end of this decade"

The key drivers underpinning the need for renewable energy given the climate emergency follow from the international policies and obligations. In order to tackle the climate emergency and significantly reduce GHGs, there needs to be a transition from high carbon energy sources and increase in reliance on zero or low carbon energy.

Following COP26, the 27th climate change COP (COP27) was held in Egypt in November 2022. The conference's key aim was to ensure full implementation of the Paris Agreement and to put negotiations into concrete actions. After a period of intense negotiations, countries reached agreement on establishing a fund to compensate vulnerable nations for 'loss and damage' from climate change induced disasters.

The Project, as a renewable energy source, is aligned with these drivers and requirements and will contribute to ensuring the delivery of low carbon energy in support of net-zero emission targets.

2.2.2 Climate change and renewable energy legislation and policy

This section summarises the overarching climate change and renewable energy legislation and policy context that drives the need for the Project at an international and national level. The various policies and legislation which are relevant to the Project are summarised in Figure 2-1 and link the similarities between Scottish, UK, European, and International policy and legislation. Legislation and policy relating to onshore development planning, onshore consenting and EIA requirements are provided in chapter 3: Planning policy and legislative context.

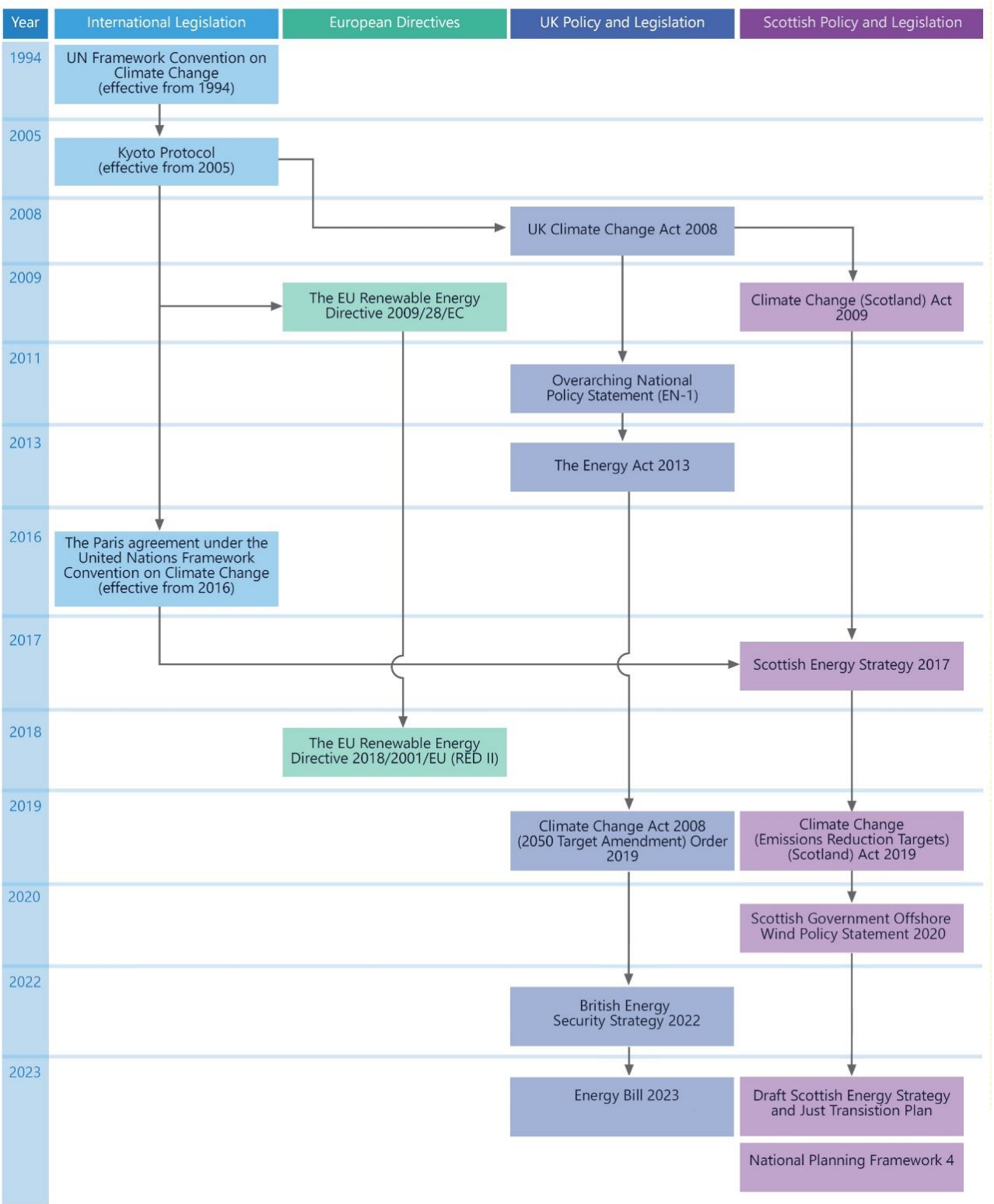

Figure 2-1 Climate change and renewable energy legislation and policy

2.2.2.1 International legislation

Table 2-1 outlines the key relevant legislation for the onshore Project relating to international obligations on climate change and renewable energy. The Project will address global climate change and emissions reductions targets by contributing towards renewable energy generation.

Table 2-1 International legislation

RELEVANT LEGISLATION	DESCRIPTION
United Nations (UN) Framework Convention on Climate Change (UNFCCC)	The UNFCCC is an international environmental treaty for addressing climate change. Signed in 1992, and subsequently ratified by 198 countries, it was established to combat 'dangerous' human interference with the climate system by stabilising GHG concentrations in the atmosphere. The UNFCCC was primarily designed to support the development of future agreements, protocols, and amendments that would impose obligations and enforceable requirements to reduce GHG emissions on state parties.
The Kyoto Protocol under the United Nations Framework Convention on Climate Change	The Kyoto Protocol 'operationalised' the UNFCCC by committing state parties to reduce GHG emissions. The UK is a signatory to the Kyoto Protocol, which is a legally binding international agreement that commits state parties to specific emissions reduction targets. The protocol came into effect in 2005 and its commitments were transposed into UK law by the Climate Change Act 2008 and the Climate Change (Scotland) Act 2009. The Kyoto protocol has been superseded by the Paris Agreement (see below).
The Paris Agreement under the UNFCCC	The Paris Agreement (in full, Paris Agreement Under the United Nations Framework Convention on Climate Change) is a legally binding international treaty which aims to reduce the emission of gases that contribute to global warming by limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C. The Paris Agreement supersedes the Kyoto Protocol. It entered into force on 4th November 2016 and was ratified by the UK as of November 2016. Under the UNFCCC, the annual COP brings governments together to discuss and review how climate change is being managed domestically and internationally. It is the main decision-making body of the UNFCCC. In order to contribute towards delivering the targets under the Paris Agreement, the Climate Change Act (Emissions Reductions Targets (Scotland) Act 2019 introduced binding targets for the reduction in emissions by 100% below 1990 levels by 2045 in Scotland and the Climate Change Act 2008 (2050 Target Amendment) Order 2019 sets a similar reduction target for the rest of the UK by 2050.

2.2.2.2 European legislation

Table 2-2 outlines the key relevant European legislation for the onshore Project relating to renewable energy targets.

Table 2-2 European legislation

RELEVANT LEGISLATION	DESCRIPTION
EU Renewable Energy Directive (RED)	The Renewable Energy Directive (2009/28/EC) (RED I) was enacted in 2009 and the mandated levels of renewable energy use in European Union (EU) countries between 2009 and 2021. The UK is committed to sourcing 15% of its total energy needs from renewable sources by 2020 under RED I, including electricity, heat and transport. RED I was revised in 2018 with the passage of the Renewable Energy Directive (2018/2001/EU) (RED II). Under RED II, the UK is committed to sourcing 32% of its total energy needs from renewable sources by 2030. The UK and Scottish Governments have also made legally binding commitments through the Climate Change Act 2008 and the Climate Change (Scotland) Act 2009 (as described in Table 2-4).

2.2.2.3 UK legislation

Table 2-3 outlines the main UK legislation pertinent to the Project that cover national climate change and renewable energy targets.

Table 2-3 UK legislation

RELEVANT LEGISLATION	DESCRIPTION
Climate Change Act (2008)	The Climate Change Act (2008), as amended by the Climate Change Act 2008 (2050 Target Amendment) Order 2019, requires the UK to reduce emissions by 100% below 1990 levels by 2050. The Act provides a legal framework for ensuring that the UK Government meets its commitments to tackle climate change, and its passage established the UK as the first Group of Seven (i.e. G7) nation to set such a goal.
The Energy Act (2013)	The Energy Act (2013) outlines the UK's commitment to a low carbon energy industry and investments in low carbon electricity generation. The Act establishes the legislative framework to enable secure, affordable, low-carbon energy. It includes provisions for the following: • The Secretary of State is granted authority to set a 2030 decarbonisation target range for electricity in secondary legislation; and • Electricity Market Reform, which consists of measures aimed at attracting the £110 billion investment needed for the low-carbon transition. It introduces Contracts for Difference (CfD), which are long-term contracts that are designed to encourage investment in low-carbon electricity generation.
The Energy Bill (2023)	The Energy Security Bill, now known as the Energy Bill, was introduced to Parliament on the 6th July 2022 to deliver a cleaner, more affordable, and more secure energy system in the UK. It makes provisions affecting the energy sector, focused on three areas:

RELEVANT LEGISLATION	DESCRIPTION
	• Leveraging investment in clean technologies; • Reforming the UK's energy system and protecting consumers; and • Maintaining the safety, security, and resilience of the energy systems across the UK. The measures in the Energy Bill will help to enable the increase in offshore wind necessary to deliver the 50 Gigawatt (GW) ambition for the UK, whilst maintaining environmental protections. The Bill had its third reading in September 2023.

2.2.2.4 Scottish legislation and policy

Scotland is committed to addressing climate change and its net-zero goals, and the utilisation of renewables is one way in which Scotland is committed to fulfilling these goals.

Table 2-4 outlines the main Scottish legislation and policy which establishes the need for the Project in terms of the climate change and renewable energy planning policy and legislation, specific to the onshore Project.

Table 2-4 Scottish climate change legislation

RELEVANT LEGISLATION	DESCRIPTION
Climate Change (Scotland) Act (2009)	The Climate Change (Scotland) Act (2009) originally set a legally binding target for reducing GHG emissions by 80% below 1990 levels by 2050. As amended by the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, the Act now includes a net-zero emissions target whereby GHG emissions must be 100% lower than 1990 levels by 2045. This ambitious target is greater than for the wider UK which looks to establish 100% lower emissions than 1990 levels by 2050, five years later than Scotland. The Act also places sustainable development duties on Scottish Ministers and public bodies relating to climate change. Offshore wind's contribution towards achieving the government's GHG emissions reduction commitments has been considered in a climate change and carbon assessment (see Onshore EIA Report, Supporting Study (SS) 1: Climate and Carbon Assessment). The Climate Change (Scotland) Act (2009) has further supporting secondary legislation. The relevant secondary legislation includes: • The Climate Change (Scotland) Act 2009 (Commencement No. 1) Order 2009 - specifies dates on which the various provisions in the Act come into force; • The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015 - requires bodies to prepare reports on compliance with climate change duties; • The Climate Change (Additional Greenhouse Gas) (Scotland) Order 2015 – addition of nitrogen trifluoride as an additional GHG to gases in The Climate Change (Scotland) Act 2009 in addition to designating 1995 as the baseline year;

RELEVANT LEGISLATION	DESCRIPTION
	• The Carbon Accounting Scheme (Scotland) Amendment Regulations 2017 (2010 amendment) – updated scheme for monitoring compliance with the annual emissions reduction targets. This secondary legislation also covers a range of administrative issues which are related to emissions accounting, including specifying the circumstances in which carbon units may be credited to or debited from the net Scottish emissions account; and • The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 - revised and established new GHG emissions reduction targets to allow for Scotland to contribute to the Paris Agreement goals. This includes a reduction of all GHG to net-zero by 2045 with interim targets for reductions of at least 75% by 2030 and 90% by 2040. The Scottish Climate Change Plan outlines the strategies and approach of the Scottish Government to deliver on the GHG emissions reductions targets between 2018 and 2023. The plan was updated in 2020 to align with the updated GHG emissions reductions targets under the Climate Change (Emissions Reductions Targets) (Scotland) Act 2019 (Scottish Government, 2020).

2.3 New energy infrastructure

The UK requires new energy transmission infrastructure in order to:

- Reduce the carbon footprint of electricity generation capacity in order to achieve net zero climate change targets;
- Enable the transition from fossil fuels to renewable energy sources;
- Ensure adequate supply due to changes in the demands on transmission infrastructure; and
- Ensure security of supply through replacing and upgrading infrastructure systems to meet increased demands.

The key new energy and infrastructure policy and strategies for the wider UK and for Scotland are detailed in Table 2-5 which highlights the vital role and need for rapid large scale development of GWs of offshore wind to decarbonise the wind energy industry and meet the need for additional electricity generation.

Table 2-5 Key new energy and infrastructure policy and strategy

POLICY/ STRATEGY	DESCRIPTION
Highland Renewable Energy Strategy and Planning Guidelines (2006)	The Highlands Renewable Energy Strategy (HRES) (THC, 2006), aims to supplement the existing policies of THC. It aims to provide guidance and direction for planning decisions and developers plans with respect to renewable energy projects in the Highlands. In August 2016 the Planning, Development and Infrastructure Committee agreed that HRES will no longer be used as a material consideration, but that generation targets outlined within the HRES would be carried forward for monitoring purposes. The onshore Project will facilitate these generation targets by providing renewable energy tansmission from offshore wind and as such is aligned with this strategy.
Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change (DECC), 2011)	The Overarching National Policy Statement (NPS) (EN-1) (DECC, 2011) sets out the UK Government's policy for delivery of major energy infrastructure in the UK over the next 40 years. It considers that 59 GW of new build electricity generation capacity is required in that period, of which 33 GW should be from renewables in order to achieve 2050 emission targets for the UK. The NPS is currently under revision with the Draft NPS (EN-1) published in September 2021 and undergoing consultation (Department for Business, Energy & Industrial Strategy (BEIS), 2021). The Draft NPS EN-1 looks to update the NPS EN-1 to align with net zero emissions targets for 2050 which came into force in 2019. In order for this to occur the Draft NPS (EN1) states that: *"Meeting these objectives necessitates a significant amount of energy infrastructure, both large and small-scale. This includes the infrastructure needed to convert primary sources of energy (e.g. wind) into energy carriers (e.g. electricity or hydrogen), and to store and transport them into and around the country… We will need to dramatically increase the volume of energy supplied from low carbon sources and reduce the amount provided by fossil fuels… We need to transform the energy system, tackling emissions while continuing to ensure secure and reliable supply, and affordable bills for households and businesses."* The onshore Project will allow for low carbon energy transmission from offshore wind and as such is aligned with the principals of the NPS and Draft NPS.
Scottish Energy Strategy (2017)	Scotland's Energy Strategy: The Future of Energy in Scotland (2017 Strategy) (Scottish Government, 2017) sets out a vision for the energy system in Scotland to 2050. The strategy sets a 2030 target for the equivalent of 50% of the energy for Scotland's heat, transport, and electricity consumption to be supplied by renewable sources. In accordance with the 2017 Strategy, Scotland's Energy Strategy Position Statement was published in 2021 (Scottish Government, 2021c). The Position Statement notes that:

POLICY/ STRATEGY	DESCRIPTION
	"Since the publication of the 2017 strategy, the Scottish Government has committed to achieving our ambitious targets of net zero greenhouse gas emissions by 2045 and a 75% reduction by 2030. In light of the economic crisis created by the COVID-19 pandemic, the Scottish Government is now striving to deliver a green economic recovery aligned to those net zero ambitions." The Position Statement sets out the programme of work required across the energy sector to support the energy targets and outlines key energy priorities for Scotland, including priorities for renewable energy. The Position Statement also states that the 2017 Strategy will remain in place until an Energy Strategy refresh is adopted by the Scottish Ministers.
British Energy Security Strategy (2022)	The British Energy Security Strategy (UK Government, 2022) outlines how the UK Government plans to bring clean, affordable, secure power to future generations. Specifically, in relation to renewables it states *"Accelerating the transition from fossil fuels depends critically on how quickly we can roll out new renewables. Our 'Ten point plan for a green industrial revolution' has already put the UK at the forefront of many renewable technologies, delivering £40 billion of private investment in under two years. By the end of 2023 we are set to increase our capacity by a further 15%. But now we must go further and faster, building on our global leadership in offshore wind".*
A Blue Economy Vision for Scotland (2022)	The term 'blue economy' is used to describe the various aspects that make up a country's marine environment and sectors. Scotland's blue economy includes the marine, coastal and the inter-linked freshwater environment of Scotland, the different marine and maritime sectors it supports, and the people connected to it. A Blue Economy Vision for Scotland (Scottish Government, 2022), highlights the Scottish Government's ambition for Scotland's blue economy to 2045. It promotes an approach that is consistent with National Planning Framework 4 (NPF4) and Scotland's international obligations. There is global recognition of the importance of the marine environment to the health of the world, particularly in light of climate change. As such, marine resources must be sustainably managed and action must be taken to drive forward transformative change. The Scottish Government has laid out six outcomes, summarised under three key themes, which they aim to achieve: • Environment: – *"Scotland's marine ecosystems are healthy and functioning, with nature protected and activities managed using an ecosystem-based approach to ensure negative impacts on marine ecosystems are minimised and, where possible, reversed.* – *Scotland's blue economy is resilient to climate change, contributing to climate mitigation and adaptation, with marine sectors decarbonised, resource efficient and supporting Scotland's Net Zero and Nature Positive commitments."*

POLICY/ STRATEGY	DESCRIPTION
	• Social: – *"Thriving, resilient, regenerated, healthy communities have more equal access to the benefits that ocean resources provide.* – *Scotland is an ocean literate and aware nation."* • Economic: – *"Established and emerging marine sectors are innovative, entrepreneurial, productive and internationally competitive.* – *Scotland is a global leader in healthy, quality, sustainably harvested and farmed Blue Foods, for our own population and beyond."* The Project, as an offshore wind development, has been designed with these outcomes in mind. The onshore Project has also considered these outcomes, particularly in relation to works within, and at proximity to, coastal and freshwater environments and local communities, which feed in to Scotland's blue economy.
Draft Scottish Energy Strategy and Just Transition Plan (2023)	The Scottish Government has recently published the 'Draft Energy Strategy and Just Transition Plan – delivering a fair and secure zero carbon energy system for Scotland' in January 2023 (Scottish Government, 2023a). The Draft is currently in consultation. Nonetheless, key themes in relation to new energy infrastructure required for Scotland are apparent. *"To realise our climate change ambitions, we need to transform the way Scotland generates, transports and uses energy. We must seize the huge opportunity this presents and deliver maximum benefits to Scotland's people, workers, communities and economy from our vast renewable energy resource."* The draft emphasises the need for Scotland to ensure systems are put in place to allow for net zero emissions by 2045 and provides a road map of how this can be accomplished. The draft heavily references a need to reduce reliance on fossil fuel consumption, in particular those produced from the oil and gas sector. The draft sets out key ambitions for Scotland including producing more than 20 GW of additional renewable electricity both on and offshore by 2030 and energy security through the development of Scotland's own resources and additional energy storage. The draft notes that *"ScotWind… represents a massive step forward in delivering an energy revolution with market ambitions to deliver up to 27.6 GW of capacity - more than double our renewable energy generation capacity currently in operation"*. Further information on ScotWind is provided in section 2.3.2.

POLICY/ STRATEGY	DESCRIPTION
	With regard to transmission and distribution infrastructure, the draft also states that *"we encourage, promote and facilitate all forms of renewable energy development onshore and offshore. This includes energy generation, storage, new and replacement transmission and distribution infrastructure and emerging low-carbon and zero emissions technologies"* and that *"Significant infrastructure investment in Scotland's transmission system is needed to ameliorate constraints and enable more renewable power to flow to centres of demand."* The onshore Project, as a transmission and distribution development supporting renewable energy generation, will thus aid the success of these ambitions.
NPF4*	After two years of extensive consultation the Scottish Government laid the 'Revised Draft National Planning Framework (NPF) NPF4' before parliament on the 8th November 2022. The draft was approved in January 2023 and NPF4 was adopted by Scottish Ministers on 13th February 2023 (Scottish Government, 2023b). NPF4 replaces NPF3 and the Scottish Planning Policy (SPP). NPF4 sets out a spatial strategy until 2045 to coincide with the GHG net zero emission and sustainability targets. The strategy and policies are in support of developments that help to meet GHG emissions targets. The global climate emergency and the nature crisis have formed the foundations for the spatial strategy as a whole. The strategy focuses on three key aims including sustainable liveable and productive places which support the underlying draft policies of the strategy (Scottish Government, 2023b). Of these three key aims, 'Sustainable Places' is of most relevance to the onshore Project. Key points include: • *"Scotland's high quality environment, and the natural capital it supports, underpin our approach to tackling climate change and the economy and is fundamental to our health and wellbeing."* • *"Scotland's Energy Strategy will set a new agenda for the energy sector in anticipation of continuing innovation and investment. The interplay between land and sea will be critical, given the scale of offshore renewable energy resources."* • *"Scotland's future places will be net zero, nature-positive places that are designed to reduce emissions and adapt to the impacts of climate change, whilst protecting, recovering, and restoring our environment. Meeting our climate ambition will require a rapid transformation across all sectors of our economy and society."* • *"We will encourage low and zero carbon design and energy efficiency, development that is accessible by sustainable travel, and expansion of renewable energy generation. It is also crucial that we build resilience to the future impacts of climate change including water resources and assets and development on our coasts."* The policies of relevance to the onshore Project, and which underly these aims, include: • Policy 1 which gives significant weight to the global climate emergency in order to ensure that it is recognised as a priority in all plans and decisions;

POLICY/ STRATEGY	DESCRIPTION
	• Policy 2 which will ensure that emissions from new development are minimised as far as possible; • Policy 11 which supports renewable energy development; and • Policy 33 which explicitly states that fossil fuel exploration, development, and production (excluding unconventional oil and gas) will not be supported other than in exceptional circumstances. In addition to these key aims and policies NPF4 details the regional spatial priorities across Scotland which will inform the preparation of regional spatial strategies and Local Development Plans (LDPs) by planning authorities. For the onshore Project this is relevant to the 'North and West Coast and Islands' region. The commentary for the North and West Coast and Islands region, whereby the onshore Project is located, states that: *"This part of Scotland will be at the forefront of our efforts to reach net zero emissions by 2045… As one of the most renewable energy rich localities in Europe with significant natural resources, there is a real opportunity for this area to support our shared national outcomes."* In line with this, the key priorities for the region include: • *"Maximising the benefits of renewable energy whilst enhancing blue and green infrastructure, decarbonising transport and building resilient connections;* • *Support coastal and island communities to become carbon neutral, thus contributing to net-zero commitments and reducing fuel poverty; and* • *Seize the opportunities to grow the blue and green economy, recognising the world-class environmental assets that require careful management and opportunities to develop skills and diversify employment."* It is also noted that the North and West Coast and Islands regional spatial area will be supported by the 'Strategic Renewable Electricity Generation and Transmission Infrastructure' National Development. This national development will *"support electricity generation and associated grid infrastructure throughout Scotland, providing employment and opportunities for community benefit, helping to reduce emissions and improve security of supply."* In this way the onshore Project need is clear as the key objectives of the onshore Project and the Project as a whole are aligned with NFP4 national and regional strategy.

**** Further detail of these planning frameworks and policies are provided in Chapter 3: Planning policy and legislative context.***

2.3.1 Local development plans

Following the adoption of NPF4 in February 2023, NPF4 forms part of the statutory development plan, along with the LDPs applicable to an area at that time of NPF4 adoption and its Supplementary Guidance.

Whether an LDP has been adopted prior to or after the adoption and publication of NPF4, legislation states that in the event of any incompatibility between a provision of NPF and a provision of an LDP, whichever of them is the later in date is to prevail (Town and Country Planning (Scotland) Act 1997 ("the 1997 Act"); section 24(3)).

As the development plan system transitions to one without statutory Supplementary Guidance, the Planning (Scotland) Act 2019 (Commencement No.11 and Saving and Transitional Provisions) Regulations 2023 provide for local authorities to continue to prepare and adopt Supplementary Guidance associated with LDPs until 31st March 2025. Supplementary Guidance adopted under those provisions is to be treated as forming part of the development plan for the area to which the LDP relates (Scottish Government, 2023c).

Table 2-6 provides a description of the LDPs and an overview of the infrastructure these plans support in order to ensure energy security for the local area and alignment with the national planning frameworks and climate change strategy. The LDPs of relevance to the onshore Project are:

- Highland-wide LDP (HwLDP) (The Highland Council (THC), 2012) and Emerging HwLDP; and
- Caithness and Sutherland LDP (CaSPlan) (THC, 2018).

Further details on these LDPs in the wider planning policy context and Supplementary Guidance is provided in chapter 3: Planning policy and legislative context.

Table 2-6 Local Development Plans (LDPs)

RELEVANT PLAN	DESCRIPTION
HwLDP and Emerging HwLDP	The HwLDP was adopted by THC on 5th April 2012 (THC, 2012). The HwLDP sets out a strategy to support the growth of all communities across THC region. In the context of climate change, the plan seeks to safeguard the environment through negating the effects of climate change through supporting developments which contribute to this goal. With regards to renewable energy, the Plans vision states that the Council will ensure that the development of renewable energy resources is managed effectively, with clear guidance on where renewable energy developments should and should not be located. Of particular importance to climate change and new energy infrastructure is Policy 28 'Sustainable Design' and Policy 67 'Renewable Energy Developments'. Policy 28 details that THC will be supportive to proposals which are designed in the context of sustainable development and climate change in order to promote and enhance the social, economic and environmental wellbeing of the people of the Highlands.

RELEVANT PLAN	DESCRIPTION
	Policy 67 considers developments that contribute to meeting renewable energy generation targets and any positive or negative effects it is likely to have on the local and national economy. Developments will be supported where they do not have a significantly detrimental effect overall (individual or cumulative), having regard in particular to any significant effects on the environment, species and habitats, cultural heritage features, landscape character and visual receptors, amenity, noise sensitive receptors, water environment, navigation, defence and emergency services, communication services, tourism and recreation and traffic and transport interests. NPF4 (as detailed above) comprises part of the Statutory Development Plan for Scotland. NPF4 sets out regional special strategies and THC will look to consolidate and update its existing LDPs, including the HwLDP, to align with the strategy and policies as laid out within NPF4. THC consulted on the preparation of NPF4 through providing the 'Highland Indicative Regional Spatial Strategy to 2050' (THC, 2021), which highlights the drive to support renewable and sustainable energy developments to deliver a net zero Scotland. The indicative strategy, in line with NPF4, states that *"it is envisaged that Highland will transition to become an exemplar carbon action region. Highland will continue to play a disproportionately significant role in delivering the national requirements for climate change due to the area's natural assets, renewables generation capacity and the qualities and characteristics that uniquely define the region"*.
CaSPlan	CaSPlan was adopted in August 2018 (THC, 2018) and is the second of three new area LDPs that form THC's Development Plan that guides future development in Highland, particularly in the Caithness and Sutherland area. The CaSPlan details that investment in renewable energy generation in North Highland is helping to meet THCs and national climate change targets. With a recent reliance upon onshore wind, the potential for marine energy generation particularly in the north-east of the CaSPlan area is also noted. Paragraph 114 of CaSPlan sets out that Dounreay has played a pivotal part in the development of Thurso, however with decommissioning expected to be completed by 2030, the plan states that is "*essential that new opportunities for inward investment and job creation are identified and supported*", with the marine renewable sector, including offshore wind, being cited as a significant growth area. From a climate change perspective, the CaSPlan notes the area's substantial renewable energy resource. CaSPlan notes that the HwLDP policies provide safeguards for these features. The main spatial elements of the plan are: • Growing communities – which underpins the need to focus new development within the identified Settlement Development Areas, Economic Development Areas and Growing Settlements to strengthen communities and ensure provision of services; • Employment - the CaSPlan acknowledges the strong role that tourism, aquaculture, renewable energy and the service industry play in the local job market however acknowledges the need for new employment as Dounreay is decommissioned. It looks to maximise opportunities arising from offshore renewables and oil and gas, as well as supporting and enabling a High Voltage Energy Transmission Network (as supported by NPF4); • Connectivity and transport – improving the transport infrastructure from larger service centres and providing the basis of sustainable transport services; and

RELEVANT PLAN	DESCRIPTION
	• Environment and heritage - protecting and enhancing the unique natural environment, by focusing development mainly within existing settlements, taking account of key natural features in choosing sites to allocate for development. The onshore Project lies within the designated Energy Business Expansion Area. Within the Energy Business Expansion Area, the Plan seeks to maximise opportunities arising from offshore renewables, including employment-generating uses to service this sector through support for harbours, allocation of business and industrial land and a flexible approach to considering the needs of emergent sectors and strategic infrastructure proposals. The plan also aims to enable the realisation of a Digital Fibre Network (as identified in NPF4) which supports growing and inclusive communities with sustainable growth of business and employment.

2.3.2 ScotWind

The Crown Estate Scotland (CES) ScotWind leasing initiative was the first round of offshore wind leases in Scottish waters for a decade. The process involved making areas of seabed available for commercial-scale offshore wind projects and will benefit Scottish businesses and communities as well as providing a major boost to UK clean energy production (CES, 2022). The intention for the ScotWind leasing round was initially announced in 2017 as a result of the UK Government's Clean Growth Strategy and the Scottish Government's Energy Strategy, which confirmed Scottish Ministers' commitment to furthering offshore wind, as part of the approach to meeting the 2030 target of 50% of energy consumption (heat, transport and electricity) being from renewable sources and the net-zero emissions by 2045. The round was launched in June 2020 and option agreements announced in January 2022. A further three option agreements were awarded through the ScotWind clearing process in November 2022. The 20 option agreement sites are illustrated in Figure 2-2.

CES awarded OWPL the Option Agreement Area (OAA) in January 2022 for the development of the proposed Project following the ScotWind leasing round. The OAA lies wholly within the "N1" Plan Option (PO).

The onshore Project will contribute to the aims and objectives of the ScotWind leasing round by ensuring the clean energy produced by the offshore wind farm is able to be transported to the national grid.

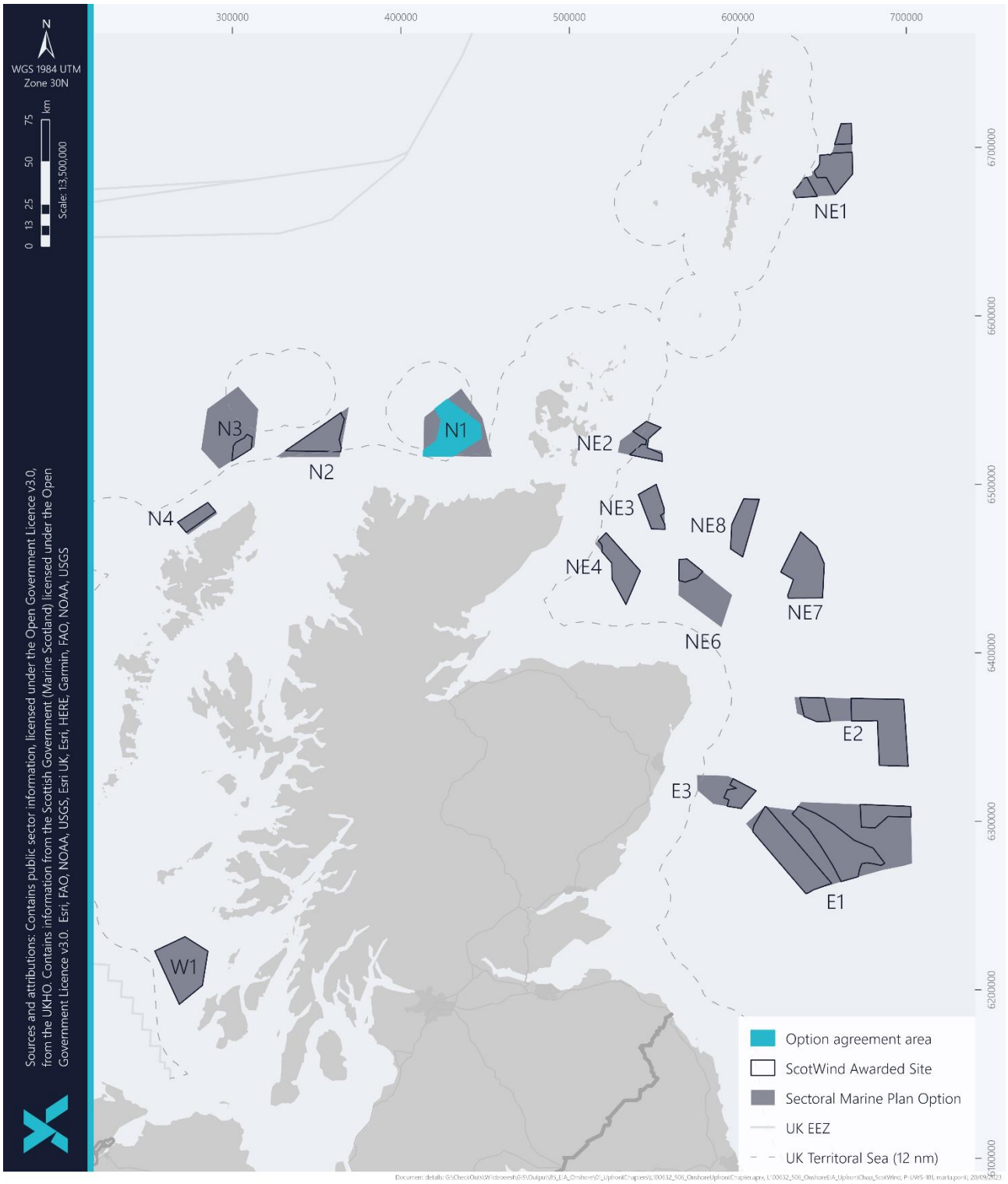

Figure 2-2 ScotWind POs and awarded OAAs

2.4 Energy security

Energy consumers need to have access to a reliable, secure and affordable energy supply. With the movement towards low carbon energy systems in order to support the UK and Scotland's net zero targets this presents a real need for energy security, which includes the need to a secure energy supply; the need for new energy infrastructure; and the need to maximise economic and supply opportunities in Scotland and the UK. The First Minister has stated that:

"Countries must prioritise, as far as we can, an approach to energy security that focuses on sustainability, with measures to promote energy efficiency, and to accelerate the development [of] renewable and low carbon energy" (Scottish Government, 2021d).

In emerging strategies and plans it is clear that development of renewable energy systems and transmission infrastructure are key to achieving these aims. The recent 'Draft Energy Strategy and Just Transition Plan' published by the Scottish Government in January 2023 highlights that development of Scotland's own resources and additional energy storage is key to energy security (Scottish Government, 2023a). The draft emphasises that:

"In addition to building our renewable capacity, we also now need to focus significant efforts on decarbonising energy for heat, transport and industry, on reforming markets to ensure energy security and affordability, and on maximising the benefits from the transition to net zero for our economy and our communities. The opportunities that creates are immense."

The UK and Scotland need to secure large scale, low carbon sources of energy, and the development of offshore wind electricity and transmission systems will improve energy security, through low carbon means. This remains a priority for the UK Government and the Scottish Government, particularly with regard to external factors which are driving the volatile (and expensive) gas prices set by international markets, such as the current war in Ukraine. As such, the onshore Project, through supporting the transmission of low carbon electricity from offshore wind can provide a significant contribution to securing a low carbon home grown energy supply to counteract the effects of these external factors.

The Project has an expected capacity of around 2 GW and will be capable of powering the equivalent of more than two million homes with clean electricity and as such will provide significant contributions to energy security.

2.5 Economic benefit

The energy sector in the UK plays a central role in the economy and renewable energy can play a major role in boosting the economy. The development of home-grown renewable energy can help the UK to avoid paying to import energy.

The UK Government's Review of Electricity Market Arrangements (REMA) (BEIS, 2022) seeks views on a wide range of options to address the combined challenges of responding to higher global energy costs, the need to further boost energy security and move the UK to a cleaner energy system to ensure the full decarbonisation of the electricity system by 2035. The review states that:

"The only long-term, sustainable solution to high prices is to reduce our reliance on fossil fuel fired generation, and unlock the full potential of our abundant, cheap renewable resources – particularly wind and solar... We have the opportunity to design an electricity system which passes the savings of renewable electricity generation onto consumer bills, keeps us on our world-leading decarbonisation trajectory, and ensures our supply of energy is secure and stable. Our electricity markets will be the backbone of this future electricity system. So it is critical that they are designed right, with renewables (and the wider ecosystem they require) in mind."

Renewable energy continues to create investment opportunities and jobs throughout the supply chain. The Office for National Statistics (ONS) estimates that private investment in UK energy infrastructure reached £6.4 billion in 2020 (ONS, 2022). Offshore Energy UK (OEUK) estimate for every £1 million of oil and gas Gross Value Added (GVA), £2.1 million is generated elsewhere in the economy (OEUK, 2022). ScotWind will deliver over £750 million in revenues for the public purse through the initial awards alone, and developers have committed to invest an average of £1.4 billion per project, equating to more than £28 billion of potential investment in Scotland's supply chain. The 'Draft Energy Strategy and Just Transition Plan' (Scottish Government, 2023a) states that:

"Once operational, the [ScotWind] projects will raise billions more in annual rental revenues, which will be invested back into Scotland, benefitting our communities and our economy. We welcome the commitments from developers to invest an average of £1.4 billion in the Scottish supply chain across the 20 ScotWind projects. This equates to £28 billion of potential Scottish economic activity, and around £1 billion of investment for every gigawatt of capacity built."

ONS estimate that currently there are 20,500 people employed in the 'Low Carbon and Renewable' sector in Scotland, which has an estimated turnover of over £5 billion (ONS, 2020). Independent research carried out for the Scottish Trades Union Congress (STUC) shows that ScotWind could add between 2,500 to 14,400 Full Time Equivalent (FTE) employment (Scottish Government, 2023a). It is estimated for the Project alone, in a high case, up to 4,147 jobs will be created in the UK and up to 2,053 jobs in Scotland, across the lifetime of the Project (see Offshore EIA Report; chapter 19: Socio-economics). An SCDS was prepared for the Project and submitted to CES as part of the ScotWind leasing process and sets out how OWPL will meet its investment in developing supply chain capacity within the UK.

Furthermore, there are significant opportunities for the Scottish supply chain from Scotland offshore wind potential. In 2021, the Scottish Offshore Wind Energy Council (SOWEC), published its Strategic Investment Assessment (SIA) for Offshore Wind (SOWEC, 2021). The SIA makes clear, that the sector must work collaboratively, both to help focus activity and investment in Scottish ports, and to facilitate more meaningful engagement between Scottish suppliers and tier one manufacturers and installers.

SOWEC has developed a Collaborative Framework Charter which encourages developers, the public sector and the supply chain to work together to maximise deployment of offshore wind projects and supply chain opportunities. The Framework was launched by the First Minister for Scotland in May 2022 and has been signed by 24 offshore wind developers, of which the consortium of companies forming OWPL are signatories (Offshore Wind Scotland, 2022). As part of the Project proposal, the supply chain strategy has been specifically designed to maximise opportunities for the north of Scotland. This will be enabled by a £105 million project-level investment initiative that will be enhanced to £140 million by third parties, in advance of a final investment decision in 2026.

The Scottish Government have developed a Strategic Investment Model to facilitate timely, strategic investment through the pooling / sharing and coordination of public and private sector funds (Scottish Government, 2023a). The Strategic Investment Model was launched in May 2023.

Finally, the Scottish Government are currently updating their 'Good Practice Principles for Community Benefit from Offshore Renewable Energy Developments' (Scottish Government, 2018), and consultation on new draft guidance will be ongoing throughout 2023 (Scottish Government, 2023a). The consultation aims to build the evidence base of community benefits and explore the potential for shared ownership of offshore renewable energy, with an aim of 2 GW of community and locally owned renewable energy by 2030. OWPL are in the process of developing a Community Benefit Fund (CBF) with input from local communities to ensure the benefits of the Project meet the local public needs. The CBF will be shared across communities in Caithness, Sutherland, and Orkney and engagement with local communities will ensure that the fund is managed effectively and fairly.

2.6 Renewable energy production

The Project will provide renewable electricity throughout its operational life. The number of homes equivalent that can be supplied with energy generated by the Project has been calculated using the equation below, following Renewable UK guidance (Renewable UK, 2022).

$$Homes\ supplied = C\ x\ 0.4022\ x\ 8760/3509$$

Whereby:

- C is the installed capacity of the wind farm in kilowatts (kW), in this case taken to be approximately 2 GW[3];
- 0.4022 is the decimalised capacity factor for offshore wind calculated by Renewable UK as a rolling average of the past five years using data (on an Unchanged Configuration Basis) from the Digest of UK Energy Statistics published by the Department for BEIS (dimensionless) using statistics from 2017-2021 (Renewable UK, 2022);
- 8,760 is the number of hours in a year; and
- 3,509 kWh is the average UK household annual energy consumption (kWh/household) (Renewable UK, 2022).

Using this equation the Project is anticipated to produce enough electricity each year to meet the needs of the equivalent of 2,008,134 households. However, using a project specific capacity factor of approximately 55%, it is estimated that enough electricity will be produced each year to meet the needs of the equivalent of approximately 2,746,081 households.

[3] The expected installed capacity of the Project is 2 Gigawatt (GW). However, this does not reflect a 'cap' on installed capacity and is subject to change with technological advancements at the time of construction in order to maximise the production of renewable energy to meet climate change targets.

2.7 Emissions reduction and carbon offset

All industries, including the renewable energy industry, emit GHGs. However, renewable energy generation also avoids the emission of GHG by replacing other, more carbon intensive forms of electricity generation. This emissions reduction is put into the wider energy generation industry context throughout this section.

A carbon assessment is a method of measuring a product or process's effect on the environment with regard to GHG emissions throughout its lifetime. During the fabrication, construction and operation of the Project, and as a result of its eventual decommissioning, GHG emissions will be generated and released. Over the lifetime of the Project, these emissions will be offset by the net reduction in emissions through the generation of energy via low carbon wind technology. The carbon assessment for the Project is provided in SS1: Climate and Carbon Assessment.

The potential GHG emissions savings of the Project have been determined by calculating the Carbon Dioxide Equivalent (CO_2e) emissions generated from other forms of electricity generation, assuming that the Project will displace the requirement for generation from these other sources. In GHG accounting, it is considered good practice to contextualise emissions against pre-determined carbon budgets (IEMA, 2022). In the absence of sector-based or local emissions budgets, the UK Carbon Budgets can be used to contextualise the level of significance.

The total emissions over the construction, operation and maintenance and decommissioning of the Project are estimated as 5 million tCO_2E and the carbon payback period (i.e. the period of time before the Project has avoided more CO_{2e} than has been produced by its construction and operation) is estimated to be eight years. By way of a comparison and to demonstrate the reduction in CO_{2e} attributable to the Project, the potential CO_{2e} savings of the Project were also estimated by calculating the equivalent emissions generated from other forms of electricity generation. Based on the total electricity generation associated with the Project, the equivalent total emissions which would have resulted if the generation occurred via the national grid, is 16.5 million tCO_2E, 105% higher than that of the Project. The exact value for the emissions savings of the Project will ultimately depend on the size and number of Wind Turbine Generators (WTGs) installed, as such the carbon assessment provides an approximate range rather than a definitive total for the Project's total CO_{2e} emissions and carbon payback period.

2.8 References

BEIS (2021). Draft Overarching National Policy Statement for Energy (EN-1). Department for Business, Energy & Industrial Strategy. September 2021. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1015233/en-1-draft-for-consultation.pdf [Accessed 16/01/2023].

BEIS (2022). Review of Electricity Market Arrangements Consultation Document - Closing date: 10 October 2022. Department for Business, Energy & Industrial Strategy. July 2022. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1098100/review-electricity-market-arrangements.pdf [Accessed 16/01/2022].

CED (2019a). Scotland and Wales: World's first governments to declare a climate emergency. 28 April 2019. Available online at: https://climateemergencydeclaration.org/scotland-worlds-first-government-to-declare-a-climate-emergency/ [Accessed 28/30/2022].

CED (2019b). United Kingdom: Bipartisan UK Parliament declares a climate emergency. 2 May 2019. Available online at: https://climateemergencydeclaration.org/united-kingdom-bipartisan-uk-parliament-declares-a-climate-emergency/ [Accessed 30/08/2022].

CES (2022). Briefing: ScotWind Leasing for offshore wind. 11 May 2022. Available online at: https://www.crownestatescotland.com/resources/documents/scotwind-briefing-june-2022 [Accessed 30/08/2022].

DECC (2011). The Overarching National Policy Statement (NPS) (EN-1) - Planning for new energy infrastructure. Department of Energy and Climate Change. July 2011. London: The Stationery Office. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf [Accessed 16/01/2023].

IEMA (2022). IEMA EIA Guide: Assessing Greenhouse Gas Emissions and Assessing their Significance.

IPCC (2021). Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press. Available online at: https://www.ipcc.ch/report/ar6/wg1/#FullReport [Accessed 20/07/2022].

OEUK (2022). Economic Report 2022 - A focus on UK energy security. Available online at: https://oeuk.org.uk/product/economic-report-2022/ [Accessed 16/01/2022].

Offshore Wind Scotland. (2022). Collaborative Framework Charter signed by offshore wind industry. [Online]. Offshore Wind Scotland. Last Updated: 11th May 2022. Available online at: https://www.offshorewindscotland.org.uk/news/2022/may/11/scottish-offshore-wind-industry-signs-up-to [Accessed 16/01/2023].

ONS (2020). Low carbon and renewable energy economy, UK: 2020. Estimates of the size of the UK's green economy from the Low Carbon and Renewable Energy Economy Survey, including turnover and employment. Available online at: https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/finalestimates/2020 [Accessed 16/01/2022].

ONS (2022). Infrastructure in the UK, investment and net stocks: May 2022. Update of existing estimates of investment and net stocks of infrastructure in the UK economy. Available online at: https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/articles/developingnewmeasuresofinfrastructureinvestment/may2022#infrastructure-data [Accessed 16/01/2023].

Renewable UK (2022). Energy Statistics Explained. Available online at: https://www.renewableuk.com/page/UKWEDExplained [Accessed 20/07/2022].

Scottish Government (2017). Scotland's Energy Strategy: The Future of Energy in Scotland. ISBN: 9781788515276. 20 December 2017. Available online at: https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2017/12/scottish-energy-strategy-future-energy-scotland-9781788515276/documents/00529523-pdf/00529523-pdf/govscot%3Adocument/00529523.pdf [Accessed 06/07/2022].

Scottish Government (2018). Scottish Government Good Practice Principles for Community Benefits from Offshore Renewable Energy Developments. November 2018. IBSN: 9781787813786. Available online at: https://www.gov.scot/publications/consultation-scottish-government-good-practice-principles-community-benefits-offshore-renewable-energy-developments/documents/ [Accessed 16/01/2023].

Scottish Government (2020). Update to the Climate Change Plan 2018 – 2032. Securing a green recovery on a path to net zero: climate change plan 2018 – 2032. Available online at: https://www.gov.scot/publications/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/pages/2/ [Accessed 13/02/2023].

Scottish Government (2021a). COP26 - Scotland's priorities: First Minister's speech - 25 October 2021. First Minister Nicola Sturgeon sets out how Scotland can lead the world into the green revolution. Available online at: https://www.gov.scot/publications/first-ministers-speech-scotlands-priorities-cop26/ [Accessed 20/07/2022].

Scottish Government (2021b). COP26: First Minister's statement - 16 November 2021. Available online at: https://www.gov.scot/publications/first-ministers-statement-cop26/ [Accessed 31/08/2022].

Scottish Government (2021c): Energy strategy: position statement. 16 March 2021. ISBN: 9781800047297: Available online at: https://www.gov.scot/publications/scotlands-energy-strategy-position-statement/ [Accessed 22/11/2022].

Scottish Government (2021d). Renewed focus needed on climate emergency. Available online at: https://www.gov.scot/news/renewed-focus-needed-on-climate-emergency/ [Accessed 31/08/2022].

Scottish Government (2022). A Blue Economy Vision for Scotland. ISBN 9781804352588. Available online at: https://www.gov.scot/publications/blue-economy-vision-scotland/documents/ [Accessed 09/06/2023].

Scottish Government (2023a). Draft Energy Strategy and Just Transition Plan – delivering a fair and secure zero carbon energy system for Scotland. January 2023. ISBN 9781804358054. Available online at: https://www.gov.scot/publications/draft-energy-strategy-transition-plan/documents/ [Accessed 16/01/2023].

Scottish Government (2023b). National Planning Framework 4. ISBN 9781805254829. Available online at: https://www.gov.scot/publications/national-planning-framework-4/documents/ [Accessed 22/05/2023].

Scottish Government (2023c). Chief Planner letter: transitional arrangements for National Planning Framework 4 - February 2023. Available online at: https://www.gov.scot/publications/chief-planner-letter-transitional-arrangements-for-national-planning-framework-4/ [Accessed 22/05/2023].

SOWEC (2021). Scottish Offshore Wind Strategic Investment Assessment – An independent report to the Scottish Offshore Energy Council. August 2021. Available online at: https://offshorewindscotland.org.uk/media/11940/strategic-investment-assessment-report-august-2021.pdf [Accessed 16/01/2023].

THC (2006). Highland Renewable Energy Strategy and Planning Guidelines. Available online at: https://www.highland.gov.uk/downloads/file/1009/highland_renewable_energy_strategy_may_2006 [Accessed 02/10/2023].

THC (2012). The Highland-wide Local Development Plan. April 2012. Available online at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/199/highland-wide_local_development_plan [Accessed 22/11/2022].

THC (2018). Caithness and Sutherland Local Development Plan. Available online at: https://www.highland.gov.uk/info/178/local_and_statutory_development_plans/283/caithness_and_sutherland_local_development_plan [Accessed 06/07/2022].

THC (2021). Highland Indicative Regional Spatial Strategy to 2050. April 2021. Available online at: https://www.highland.gov.uk/downloads/file/23582/highland_indicative_regional_spatial_strategy_to_2050_-_refined [Accessed 22/11/2022].

UK Government (2022). British Energy Security Strategy. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1069969/british-energy-security-strategy-web-accessible.pdf [Accessed 17/08/2023]

2.9 Abbreviations

ACRONYM	DEFINITION
BEIS	Department for Business, Energy and Industrial Strategy
CaSPlan	Caithness and Sutherland Local Development Plan
CBF	Community Benefit Fund
CED	Climate Emergency Declaration
CES	Crown Estate Scotland
CfD	Contracts for Difference
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
COP21	21st United Nations Climate Change Conference of the Parties
COP26	26th United Nations Climate Change Conference of the Parties
COP27	27th United Nations Climate Change Conference of the Parties
DECC	Department of Energy and Climate Change
EIA	Environment Impact Assessment
EU	European Union
FTE	Full Time Equivalent
GHG	Greenhouse gas
GVA	Gross Value Added
GW	Gigawatt

ACRONYM	DEFINITION
G7	Group of Seven
HRES	Highlands Renewable Energy Strategy
HwLDP	Highland-wide Local Development Plan
IEMA	Institute of Environmental Management and Assessment
IPCC	Intergovernmental Panel on Climate Change
kW	Kilowatt
kWh	Kilowatt hour
LDP	Local Development Plan
NPF	National Planning Framework
NPS	National Policy Statement
OAA	Option Agreement Area
OEUK	Offshore Energy UK
ONS	Office for National Statistics
PO	Plan Option
RED	Renewable Energy Directive
REMA	Review of Electricity Market Arrangements
SCDS	Supply Chain Development Statement
SIA	Strategic InvestmentAssessment
SOWEC	Scottish Offshore Wind Energy Council

ACRONYM	DEFINITION
SPP	Scottish Planning Policy
THC	The Highland Council
UK	United Kingdom
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change
WTG	Wind Turbine Generator
°C	Degrees Celsius