



**NORTH FALLS**

*Offshore Wind Farm*

# **PRELIMINARY ENVIRONMENTAL INFORMATION REPORT**

## **Chapter 2 Need for the Project**

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*May 2023*

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## Glossary of Acronyms

BEIS	Department for Business, Energy and Industrial Strategy
CCC	Climate Change Committee
CfD	Contract for Difference
CO <sub>2</sub>	Carbon dioxide
DCO	Development Consent Order
DECC	Department for Energy and Climate Change
DESNZ	Department for Energy Security and Net Zero
FTE	Full-Time Equivalent
GW	Gigawatt
HM	His Majesty
IPCC	Intergovernmental Panel on Climate Change
kV	Kilovolt
MtCO <sub>2e</sub>	Metric tonnes of carbon dioxide equivalent
MW	Megawatt
MWh	Megawatt hour
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
Ofgem	Office of Gas and Electricity Markets
OTNR	Offshore Transmission Network Review
PEIR	Preliminary Environmental Information Report
SEA	Strategic Environmental Assessment
UK	United Kingdom
UNFCCC	United Nations Framework Convention on Climate Change

## Glossary of Terminology

The Applicant	North Falls Offshore Wind Farm Limited (NFOW).
The Project Or 'North Falls'	North Falls Offshore Wind Farm, including all onshore and offshore infrastructure.

## 2 Need for the Project

### 2.1 Introduction

1. This chapter of the North Falls Preliminary Environmental Information Report (PEIR) presents an overview of the importance of North Falls Offshore Wind Farm (herein 'North Falls' or 'the Project') in contributing to international and national United Kingdom (UK) policy commitments for renewable energy, as well as wider policy objectives for UK energy security, decarbonisation and economic benefits and therefore the need to develop the Project.
2. The need for secure, low carbon and renewable electricity-generating Nationally Significant Infrastructure Projects (NSIPs) of this kind is established by National Policy Statements (NPS) (see Section 2.2). The Overarching NPS for Energy EN-1 emphasises the urgency for new electricity NSIPs, stipulating that:

*"In order to secure energy supplies that enable us to meet our obligations for 2050, there is an urgent need for new (and particularly low carbon) energy NSIPs to be brought forward as soon as possible, and certainly in the next 10 to 15 years, given the crucial role of electricity as the UK decarbonises its energy sector."*
3. This chapter should be read in conjunction with PEIR Chapter 3 Policy and Legislative Context (Volume I).
4. The case underpinning the need for the Project is built upon North Falls' expected contribution to meeting three key national policy aims of:
  - Decarbonisation to achieve Net Zero and the importance of developing at-scale zero-carbon electricity generation assets (see Section 2.3.1 and Section 2.3.3);
  - Security of energy supply through realising geographically and technologically diverse supplies (see Section 2.3.2); and
  - Affordability of electricity generated (see Section 2.3.4).
5. As discussed in Chapter 1 Introduction (Volume I), North Falls is a proposed extension to the existing Greater Gabbard Offshore Wind Farm. In February 2017, The Crown Estate launched an opportunity for existing wind farms to apply for project extensions. This opportunity closed in May 2018. In August 2019, The Crown Estate concluded a plan-level Habitats Regulations Assessment (HRA) for the proposed extension projects and confirmed that Greater Gabbard Extension (now North Falls) would be among seven projects that would be awarded an Agreement for Lease (AfL). As set out in the online publication titled 'Offshore wind extension projects 2017', the 2017 extension opportunity was identified by The Crown Estate to provide an intermediate process between the Rounds 3 and 4 offshore wind farm processes to help achieve the urgent need for renewable energy and recognising that extensions to existing offshore wind farms are a proven way of efficiently developing more offshore generating capacity (The Crown Estate, undated).

## 2.2 The relevant National Policy Statements

### 2.2.1 Overview

6. Applications for Development Consent Orders (DCO)s enabling the lawful construction and operation of NSIPs are considered by the Planning Inspectorate, and determined by the Secretary of State of the relevant UK Government department with respect to the policies set out in the applicable NPS(s).
7. NPSs were prepared by the UK Government in accordance with the obligations of the Climate Change Act 2008 (HM Government, 2008). The NPSs relevant to the Project are:
  - Overarching NPS for Energy (EN-1), which sets out national policy for energy infrastructure in the UK;
  - NPS for Renewable Energy Infrastructure (EN-3), which sets out policies relevant to nationally significant renewable energy installations (including offshore generating stations in excess of 100 MW); and
  - NPS for Electricity Networks Infrastructure (EN-5), which sets out policies regarding new electricity network infrastructure associated with an NSIP.
8. The above NPSs were designated by the Secretary of State for the Department of Energy and Climate Change (DECC) (now the Department for Energy Security and Net Zero (DESNZ)) in 2011. The above NPSs are currently under review by DESNZ and drafts were released in September 2021 by the Department for Business, Energy and Industrial Strategy (BEIS) (now DESNZ) (see Section 2.2.2). At the time of writing this PEIR, final versions of the revised NPSs are not available. The NSIP Action Plan (published by the Department for Levelling Up, Homes and Communities in February 2023) stated that the updated NPSs will be designated by Q2 2023. Accordingly the final versions will be used to prepare the Environmental Statement to be submitted with the proposed DCO application.
9. The NPSs set out a case for the need and urgency for new energy infrastructure, with action required to be taken in the near-term in order for the identified needs to be met. The need for the Project is therefore fundamentally supported by the case presented within NPS EN-1. Further, the NPSs set out a case for new energy infrastructure to be consented and constructed with the objective of supporting the UK Government's policies on sustainable development, by:
  - Mitigating and adapting to climate change; and
  - Contributing to a secure, diverse and affordable energy supply.
10. All renewable energy generating technologies which were technically viable at generation capacities over 50 megawatts (MW) onshore and 100MW offshore in 2011 are covered by NPS EN-3. Offshore wind energy generation installations typically meet these criteria and, therefore, the need for this technology is fully covered by the NPSs. This chapter of the PEIR for the Project echoes the existing arguments set out within the NPSs to demonstrate that offshore wind can and will deliver benefits for the UK.
11. As a signatory to the Paris Agreement negotiated in 2015 at the United Nations Climate Change Conference, the UK is committed to the collective international

effort to keep global temperature rise to lower than 2°C, with a preference to limit the increase to 1.5°C in recognition of the substantial difference in climate change-related impacts.

12. The energy NPSs recognise that a secure, reliable, low-carbon energy system is essential to meeting the UK's legally binding target to cut greenhouse gas emissions by at least 80% by 2050, relative to 1990 levels (DECC, 2011). Since publication of the NPSs in 2011, the UK Government has increased its ambition of cutting emissions to at least 100% by 2050 (relative to 1990 levels), as legislated within The Climate Change Act 2008 (2050 Target Amendment) Order 2019 (HM Government, 2019).
13. Applications for development consent for the types of infrastructure covered by the energy NPSs should be assessed by the Secretary of State on the basis that the UK Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need is as described within Part 3 of the Overarching NPS EN-1. Substantial weight may therefore be given to the contribution which a project would make towards satisfying this need when considering applications for development consent under the Planning Act 2008 (DECC, 2011).

### 2.2.2 Revised National Policy Statements

14. The UK Government announced a review of the existing NPSs within its December 2020 Energy White Paper (HM Government, 2020a) and issued a draft version of the Overarching NPS for Energy EN-1, NPS for Renewable Energy Infrastructure EN-3 and NPS for Electricity Networks Infrastructure EN-5 for consultation on 6<sup>th</sup> September 2021 (BEIS, 2021a; BEIS, 2021b; BEIS, 2021d). As such, the following sections of this PEIR chapter (Section 2.2.3 to Section 2.2.5) elaborate on both the 2011 suite of relevant NPSs and the draft revised NPSs. Where a revised NPS leads to a change in policy objectives within the timeframes of applying for consent for the Project, this will be identified and taken into consideration in the Environmental Statement (ES) and DCO application.
15. The draft NPSs confirm that the “Secretary of State has decided that for any application accepted for examination before designation of the 2021 amendments, the 2011 suite of NPSs should have effect in accordance with the terms of those NPS” (BEIS, 2021a). However, the same document emphasises that “any emerging draft NPSs (or those designated but not having effect) are potentially capable of being important and relevant considerations in the decision-making process”.

### 2.2.3 Overarching National Policy Statement for Energy (EN-1)

16. The 2011 Overarching NPS EN-1 sets out national policy for major energy infrastructure including:
  - Electricity generating stations generating more than 50MW onshore and 100MW offshore. This includes generation from offshore wind. For such infrastructure, Overarching NPS EN-1 in conjunction with NPS EN-3 on renewable energy infrastructure, will be the primary basis for Planning Inspectorate decision making; and



- Electricity lines at or above 132kV. For this infrastructure, NPS EN-1 in conjunction with the Electricity Networks NPS EN-5 will be the primary basis for Planning Inspectorate decision making.
17. The provisions of NPS EN-1 implement the policies outlined within the first Annual Energy Statement made to Parliament in July 2010 (DECC, 2010). The Annual Energy Statement sets out clear actions for the UK to meet key goals on carbon emissions reductions, energy security and affordability, through the following actions:
    - Saving energy (through the Green Deal) and supporting vulnerable consumers;
    - Delivering secure energy on the way to a low carbon energy future;
    - Managing our energy legacy responsibly and cost-effectively; and
    - Driving ambitious action on climate change at home and abroad.
  18. Part 3 of NPS EN-1 recognises that energy is vital to economic prosperity and social well-being, which in turn necessitates a significant amount of infrastructure. It further acknowledges that the UK requires electricity to be generated from a diverse mix of technologies and fuels, such that the yield can meet a growing demand. The NPSs consider only the large-scale infrastructure which plays a crucial role in ensuring the delivery of a secure energy supply.
  19. At the time of publication of NPS EN-1, the UK Government was committed to cutting greenhouse gas emissions by at least 80% by 2050, compared to 1990 levels (DECC, 2011). NPS EN-1 recognises the major, rapid change needed across multiple industries to achieve this, not least in the energy sector. The long-term policy framework set out within the suite of NPS is intended to encourage private developers within their respective markets to invest in the necessary new infrastructure to deliver the required change.
  20. Part 2 (section 2.2) and Part 3 (section 3.3 and 3.4) of NPS EN-1 set out the need for renewable energy. These are:
    - Increasing energy demand (i.e., through the electrification of heating, industry and transport);
    - Transition to a low carbon economy (i.e., working towards a virtually emission-free electricity-generation system);
    - Addressing power sector carbon emissions (i.e., through reforming the Climate Change Levy);
    - Electricity market reform (i.e., designing the electricity market to encourage low-carbon and renewable energy projects);
    - Security of electricity supply (i.e., to ensure sufficient electricity capacity (including a greater proportion of low carbon generation) to meet demand at all times); and
    - Need to replace closing electricity generating stations.
  21. NPS EN-1 identifies six reasons underpinning the need for renewable energy, as follows:

- The need to reduce greenhouse gas emissions;
- The need to increase energy generation from low carbon sources to replace high carbon energy sources such as coal and gas;
- The need for energy security, including:
  - The need to secure safe, affordable, reliable energy, preferably generated in the UK for the UK market; and
  - The need to replace existing ageing energy infrastructure.
- The need to meet expected electricity demand whilst meeting climate change commitments;
- The need to maximise social and economic opportunities for the UK from energy infrastructure investment, as noted in the Clean Growth Strategy (BEIS, 2017) and the UK offshore wind Sector Deal (BEIS, 2019a); and
- The aim to increase the UK's offshore wind capacity to 40GW by 2030 following publication of the UK Government's Ten Point Plan for a Green Industrial Revolution (HM Government, 2020b).

#### *2.2.3.1 Draft update to Overarching National Policy Statement EN-1*

22. Whilst the 2011 version of EN-1 is effective at the time of writing this PEIR, the need for the Project is also consistent with the updated policies contained within the draft NPS EN-1 issued for consultation in 2021.
23. The reasons underpinning the case for action as reported in the original version of NPS EN-1 published in 2011 have progressed as a result of:
- a) A growing urgency, informed by developing scientific opinion, to reduce carbon emissions both on a global and local scale;
  - b) A slower than expected rate of progress made by other low-carbon technologies and initiatives which were expected to deliver a low-carbon electricity system; and
  - c) Reduced supply in the global market, leading to increased cost of energy and reduced energy security.
24. The fundamental need for large-scale energy-generation infrastructure set out within the 2011 NPS EN-1 is reiterated and strengthened within the revised draft NPS EN-1 and is now based on the UK's legal commitment to reach 'Net Zero' by 2050 in order to limit global average temperatures to well below 2°C above pre-industrial levels (Climate Change Committee, 2020a). Furthermore, the pathway to reaching this goal, as set out in the UK's Net Zero Strategy (HM Government, 2021a) now includes using renewable energy to power electrification of parts of the heating and transport sectors, putting an additional demand on the energy sector. Paragraph 2.3.6 of the draft NPS EN-1 states that (BEIS, 2021a):
- “Using electrification to reduce emissions in large parts of transport, heating and industry could lead to more than half of final energy demand being met by electricity in 2050, up from 17 per cent in 2019, representing a doubling in demand for electricity. Low carbon hydrogen is also likely to play an increasingly significant role.”

25. This point is further emphasised in paragraph 3.3.3 of the draft NPS EN-1 (BEIS, 2021a), which stipulates that:
- “...demand for electricity is likely to increase significantly over the coming years and could more than double by 2050 as large parts of transport, heating and industry decarbonise by switching from fossil fuels to low carbon electricity. The Impact Assessment for CB6 [the Sixth Carbon Budget] shows an illustrative range of 465-515TWh in 2035 and 610- 800TWh in 2050.”*
26. The Government’s intention is to develop an integrated, diverse energy supply system which relies on low-carbon electricity generation for a significant proportion of its supply. The draft NPS EN-1 notes that (BEIS, 2021a):
- “This energy NPS considers the large-scale infrastructure which will be required to ensure the UK can provide a secure, reliable, and affordable supply of energy, while also meeting [the UK Government’s] decarbonisation targets.”* (paragraph 2.1.4)
- “Meeting [Net Zero by 2050] necessitates a significant amount of energy infrastructure, both large and small-scale.”* (paragraph 2.3.3)
27. Paragraphs 3.3.13 and 3.3.14 of the draft NPS EN-1 (BEIS, 2021a) explain how decentralised and community energy-systems such as micro-generation schemes contribute to the UK Government’s emissions reduction targets. However, the policy expresses that such schemes are not considered to replace the need for new large-scale electricity infrastructure in meeting the UK’s objectives. The reason provided for that is *‘because connection of large-scale, centralized electricity generating facilities via a high voltage transmission system enables the pooling of both generation and demand, which in turn offers a number of economic and other benefits, such as more efficient bulk transfer of power and enabling surplus generation capacity in one area to be used to cover shortfalls elsewhere.’*
28. As explained in Section 3.3 of the draft NPS EN-1, large capacities of low-carbon generation will be required to ensure that there is sufficient electricity to meet increased demand, to replace output from retiring plants and to ensure there is sufficient margin in our supply to accommodate unexpectedly high demand and mitigate risks such as unexpected plant closures and extreme weather events.
29. The draft NPS EN-1 emphasises the prudence of planning infrastructure on a conservative basis and concludes that there is an urgent need for new electricity generating capacity to meet our energy objectives. Whilst *“a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar”* (BEIS, 2021a), the draft NPS EN-1 concludes that all low-carbon generating technologies are urgently needed to meet the UK Government’s energy objectives by:
- Providing security of supply;
  - Providing an affordable, reliable system (through the deployment of technologies with complementary characteristics); and
  - Ensuring the system is Net Zero consistent.
30. The draft NPS EN-1 notes the crucial national benefits of increased system robustness through the delivery of new electricity generation assets and network

infrastructure. It also recognises the strategic importance of this decade (the 2020s) regarding the role of offshore wind in the UK, and its proportion of the domestic electricity mix.

31. Integrating new offshore generation assets with the existing transmission network are an essential component for any energy generation project and key to delivering the benefits (i.e. decarbonisation) associated with the Project. The draft NPS EN-1 recognises that one of the current key challenges is the issue that electricity generation of offshore renewables lies *“beyond the periphery of the existing transmission network”* into which it must connect. Despite this, there is *“an expectation that there will be a need for substantially more installed offshore capacity ... to achieve net-zero by 2050”* (BEIS, 2021a).
32. Paragraph 3.3.51 of the draft NPS EN-1 notes that a co-ordinated approach to developing offshore wind farms is expected. North Falls Offshore Wind Farm Ltd (NFOW's) approach to co-ordinating with the nearby Five Estuaries Offshore Wind Farm is discussed in Chapter 1 Introduction (Volume I) and Chapter 5 Project Description (Volume I). Paragraph 3.3.52 of the draft NPS EN-1 highlights that *‘connecting the volume of offshore wind capacity targeted by the government will require not only new offshore transmission infrastructure but also reinforcement to the onshore transmission network, to accommodate the increased power flows to regional demand centres’*.
33. According to Paragraph 3.3.55 of the draft NPS EN-1 (BEIS, 2021a):

“The Secretary of State should consider that the need for a new connection or network reinforcement has been demonstrated if the proposed development represents an efficient and economical means of: connecting a new generating station to the network; reinforcing the network to accommodate such connections; or reinforcing the network to ensure that it is sufficiently resilient and capacious (per any performance standards set by the Office of Gas and Electricity Markets (Ofgem)) to reliably supply present and/or anticipated future levels of demand.”
34. Essentially the draft NPS EN-1 supports large-scale offshore wind electricity generation assets, presenting such development as a key part of the national strategy to achieving the UK Government's legally binding target to reach Net Zero by 2050.

#### 2.2.4 National Policy Statement for Renewable Energy Infrastructure (EN-3)

35. NPS EN-3 supports the policy framework set out within the Overarching NPS EN-1, with specific reference to renewable energy infrastructure. NPS EN-3 does not seek to repeat or replace policies set out within Overarching NPS EN-1 (unless expressly stated). Instead, the policies contained within NPS EN-3 are additional to those set out in the Overarching NPS EN-1. As such, both NPSs need to be considered in conjunction with one another.
36. The scope of NPS EN-3 applies to renewable energy infrastructure including:
  - Energy from biomass and/or waste (>50 megawatts);
  - Offshore wind (>100 megawatts); and
  - Onshore wind (>50 megawatts).

37. NPS EN-3 recognises that electricity generation from renewable sources of energy is an important element in the Government’s development of a low-carbon economy. Paragraph 2.6.1 expressly states:

*“Offshore wind farms are expected to make up a significant proportion of the UK’s renewable energy generating capacity up to 2020 and towards 2050.”*

#### 2.2.4.1 Draft update to National Policy Statement EN-3

38. Alongside the publication of the draft Overarching NPS EN-1, the UK Government issued a draft version of NPS EN-3 for consultation on 6<sup>th</sup> September 2021 (BEIS, 2021b).
39. The language in the updated draft NPS EN-3 regarding the necessity and urgency of electricity generation from renewables has been strengthened in light of recent changes to UK Government targets, with the updated draft recognising that *‘Electricity generation from renewable sources of energy is an essential element of the transition to net zero’*.
40. Section 2.20 of the draft NPS EN-3 (BEIS, 2021b) references the UK Government target to have 40GW of offshore wind capacity (including 1GW of floating wind capacity) by 2030, with an expectation that there will be a need for substantially more installed offshore capacity beyond this to achieve Net Zero by 2050. The Government has since increased the offshore wind capacity targets to 50GW by 2030 (HM Government, 2022a).
41. The draft NPS EN-3 notes that the next Offshore Energy Strategic Environmental Assessment (SEA) is currently underway. SEA is the process of appraisal to help inform ministerial decisions through consideration of the environmental implications of the outcome of a proposed Government plan or programme, including in relation to renewable energy proposals. This is anticipated to reflect the UK Government’s Energy White Paper published at the end of 2020 (HM Government, 2020a).
42. Regarding connections to the national transmission network, the draft NPS EN-3 expects that *‘a more co-ordinated approach to transmission from multiple offshore windfarms to onshore networks will be adopted, compared with a radial connection approach for single windfarm projects. This will include connections via multi-purpose interconnectors (MPIs), which combine the connection of offshore wind farm with the function of market to market interconnectors’*.
43. As noted within the Scoping Report (North Falls Offshore Wind Farm Limited, 2021), opportunities for cooperation with Five Estuaries Offshore Wind Farm will continue to be explored throughout the development phase of the Project, taking into account the relevant policy requirements and regulatory amendments that are available at the time.
44. Since the Scoping Opinion has been issued, National Grid Electricity Transmission (Sea Link), National Grid Ventures (Nautilus and EuroLink), North Falls Offshore Wind Farm and Five Estuaries Offshore Wind Farm are working together and exploring the potential for offshore coordination as part of the Offshore Transmission Network Review (OTNR) “Early Opportunities” workstream, with a view to identifying a future Pathfinder Project.
45. Whilst NFOW welcomes the progress the OTNR has made and recent publications from BEIS/DESNZ and the energy regulator, Ofgem, on enabling

regulatory and policy changes, currently, the detailed commercial, regulatory and legislative frameworks needed to realise offshore coordination are not yet fully identified nor in place. NFOW is working with the Government and Ofgem as they continue to progress the changes needed to enable greater coordination between these projects. As outlined in Chapter 1 Introduction (Volume I) (and discussed further in Chapter 5 Project Description, Volume I), NFOW is reviewing options for the Project's electricity transmission National Grid connection point that enable it to still meet its objectives and contribute to Government targets for offshore wind delivery. These include:

- Option 1: Onshore electrical connection at a National Grid connection point within the Tendring peninsula of Essex, with a project alone onshore cable route and onshore substation infrastructure.
  - Option 2: Onshore electrical connection at a National Grid connection point within the Tendring peninsula of Essex, sharing an onshore cable route (but with separate onshore export cables) in addition to co-locating separate project substation infrastructure, such as Five Estuaries, where practicable; or
  - Option 3: Offshore electrical connection, supplied by a third party electricity distribution network provider. Such a connection will potentially be identified through the OTNR process, in which NFOW is actively engaged.
46. With regards to collaboration with the nearby Five Estuaries Offshore Wind Farm, North Falls and Five Estuaries are exploring potential co-ordination of construction, infrastructure and operations plans. Although they are two distinct projects with separate ownership/shareholders, discussions will continue during the project development phase to seek opportunities for collaboration where this is considered practicable and feasible.

### 2.2.5 National Policy Statement for Electricity Networks Infrastructure (EN-5)

47. As with NPS EN-3, NPS EN-5 does not repeat or replace policies set out within Overarching NPS EN-1 (unless expressly stated). Instead, the policies contained within NPS EN-5 are additional to those set out in the Overarching NPS EN-1. As such, both NPSs need to be considered in conjunction with one another.
48. Whilst NPS EN-5 relates predominantly to long-distance electricity transmission infrastructure (i.e. through 400kV and 275kV lines) and distribution systems (i.e. lower voltage lines from 132kV to 230kV from transmission substations to the end-user), it also covers associated infrastructure such as substations and converter stations which convert power between different current types. The first paragraph of the NPS EN-5 (paragraph 1.1.1) makes it clear that:

“The new electricity generating infrastructure that the UK needs to move to a low carbon economy while maintaining security of supply will be heavily dependent on the availability of a fit for purpose and robust electricity network.”

#### 2.2.5.1 Draft update to National Policy Statement EN-5

49. As with the draft Overarching NPS EN-1 and draft NPS EN-3, draft NPS EN-5 represents a strengthening of the language around the need for lower-carbon electricity generation assets in line with the overall strategy for reaching Net Zero by 2050. Paragraph 1.1.1 of the draft NPS EN-5 (BEIS, 2021d) states:

*“As [the UK Government] build the new electricity generation, storage, and interconnection infrastructure that our country needs in order to transition to net zero, [the UK Government] must also build the electricity networks that connect these vital facilities with each other and with centres of consumer demand.”*

50. Section 2.2 of the draft NPS EN-5 (BEIS, 2021d) specifically relates to the site selection of projects and recognises that the macro-level location for new electricity network infrastructure is a function of both the location of new generating stations requiring connection to the network and/or the system capacity and resilience requirements determined by the electricity system operator (see paragraph 2.2.1). It notes that such constraints, coupled with the UK Government’s legally binding commitment to Net Zero by 2050 and strategic commitments to new interconnectors with mainland Europe and 40GW of offshore wind generation capacity, will mean significant new electricity network infrastructure construction in areas currently hosting comparatively little build-out (i.e. the North Sea coast of England). As outlined above, the Government has since increased the offshore wind capacity targets to 50GW by 2030 (HM Government, 2022a).

## 2.3 Need for renewable energy

### 2.3.1 Need to reduce greenhouse gas emissions

#### 2.3.1.1 Climate change

51. According to predictions from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (IPCC, 2007) cited within Overarching NPS EN-1 (DECC, 2011), a continuation of current global emissions trends (including emissions of greenhouse gases such as carbon dioxide (CO<sub>2</sub>)) could result in average global temperatures rising by up to 6°C by the end of this century (2100).
52. A rise in global temperature is widely reported to result in the following (IPCC, 2018; IPCC, 2021a):
- An increase frequency of extreme weather events such as flooding and drought;
  - A reduction of food supplies;
  - An impact on human health;
  - An exacerbation of poverty; and
  - An impact upon ecosystems, including extinction of species.
53. Global temperature rise as a result of greenhouse gas emissions is associated with potential impacts on weather, ecosystems and human health and welfare. The IPCC Working Group I Report (IPCC, 2021b) provides new estimates of the chances of crossing the global warming level of 1.5°C in the next decades, and finds that unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, the 1.5°C or even 2°C increase level will be crossed.
54. The Climate Change Committee (CCC) Progress Report contains an assessment of the UK’s progress in reducing emissions and an assessment of progress on adapting to climate change. In 2022 the report estimated that global human-induced warming has now reached around 1.2°C above 1850-1900 (an

approximation for pre-industrial levels), with all present-day warming observed estimated to be due to human activities (CCC, 2022). Human-induced warming is rising at around 0.25°C per decade. At this present rate of increase, human-induced warming would exceed 1.5°C above preindustrial levels (the lowest level referred to in the Paris Agreement long-term temperature goal) by the early 2030s.

55. Within the UK, The State of the UK Climate Report (Royal Meteorological Society, 2021) determined that over the last decade (2012-2021) UK summers and winters have been 15% and 26% wetter than the period 1961-1990 respectively, with five of the ten wettest years since records began in 1862, occurring since 2000. In addition, more extreme, erratic weather events will occur with increasing frequency, including of coastal, riverine and pluvial flooding, severe storms, and periods of extreme heat and drought, as reported by the IPCC (2012).
56. The summer of 2022 was the hottest on record in England (equal with 2018) and the fourth hottest year for the UK overall, since records began (Met Office, 2022). Since 1884, all the ten years recording the highest annual temperature have occurred from 2003 (Met Office, 2022). Furthermore, the 2020s decade had the highest global temperatures since records began (Met Office, 2021).
57. A climate emergency was declared by UK Parliament evoking many local authorities to also declare a climate emergency in recognition of the climatic impacts and ecological decline imparted by human activities. Whilst Essex County Council has not officially declared a climate emergency, multiple district councils which fall within the Essex County Council administrative area, including Tendring District Council, have declared an emergency. The list of those councils which have declared a climate emergency is set out in Table 2.1 below. Similarly, the neighbouring County Councils of Hertfordshire, Cambridgeshire, Suffolk and Kent all declared a climate emergency at various times during 2019.

**Table 2.1 Declaration of Climate Emergency by District Councils within Essex County Council Administrative Area**

District Council	Declaration of Climate Emergency (Y / N)	Date
Basildon Borough Council	N	-
Braintree District Council	N	-
Brentwood Borough Council	N	-
Castle Point District Council	N	-
Chelmsford City Council	Y	16 July 2019
Colchester Borough Council	Y	17 July 2019
Epping Forest District Council	Y	19 September 2019
Harlow District Council	Y	11 July 2019
Maldon District Council	Y	4 February 2021
Rochford District Council	N	-
Tendring District Council	Y	6 August 2019
Uttlesford District Council	Y	30 July 2019



58. The UK Climate Change Risk Assessment in 2022 (HM Government, 2022b) notes that there are identifiable opportunities to act in the next two years, and that decarbonisation of the energy sector represents a significant opportunity to mitigate these risks.
59. The Queen's Speech in May 2021 (HM Government, 2021) confirmed that the UK will continue to take steps to meet the world-leading target of net zero greenhouse gas emissions by 2050 and will continue to lead the way in tackling global climate change. This was further emphasised in the 2022 Queen's speech (HM Government, 2022a) which reflected the need for clean, affordable and secure energy. Sustained net-zero anthropogenic emissions of greenhouse gas over a multi-decade period may present an opportunity to slow or even halt global warming. The energy generation sector is the source of approximately 21% of greenhouse gas emissions in 2020 (BEIS, 2022b) and moving away from a reliance on fossil fuels for energy may hold the key to delaying predicted warming. In 2021 the International Energy Agency (IEA) published Net Zero by 2050, A Roadmap for the Global Energy Sector (IEA, 2021) which sets out a comprehensive pathway to global net zero CO<sub>2</sub> energy and industry emissions, including net zero emissions from the energy industry for advanced economies, such as the UK, by 2035. This roadmap includes a rapid build out of renewables, including offshore wind farms.

#### 2.3.1.2 Key Policy Drivers

##### 2.3.1.2.1 Climate Change Targets

60. This section provides an outline of UK targets that support the need for the Project. Further detail on UK legislation that has been put in place to secure a reduction in emissions is provided in Chapter 3 Policy and Legislative Context (Volume I).
61. The UK is a party to the United Nations Framework Convention on Climate Change (UNFCCC), an international environmental treaty adopted in 1992. The UK made a commitment during the 21<sup>st</sup> Conference of the Parties (COP), hosted in Paris in 2015, to pursue efforts to limit the global temperature increase to within 2°C of the preindustrial average temperature, with an aspiration for an improved limit of 1.5°C. This commitment has been ratified and has been implemented in 2020 through the sixth UK Carbon Budget which recommends the UK commits to a 78% reduction in carbon emissions by 2035, compared to emission levels in 1990 (Climate Change Committee, 2020a).
62. Furthermore, the United Nations 26th Climate Change Conference (COP26) Summit in 2021 led to the signing of the Glasgow Climate Pact, which sets out a series of decisions and resolutions on coordinated international action to tackle climate change. Whilst Section 2.2 of Overarching NPS EN-1 emphasises the commitment stipulated within the Climate Change Act 2008 to reducing greenhouse gas emissions by at least 80% by 2050 compared to 1990 levels, the UK Government has since committed to Net Zero (reduction in greenhouse gas emissions by 100% relative to 1990 levels) by 2050 (HM Government, 2019).
63. The CCC (2020a) recommends that "Offshore wind becomes the backbone of the whole UK energy system, growing from the Prime Minister's promised 40GW in 2030 to 100GW or more by 2050". Furthermore, the British Energy Security Strategy (HM Government, 2022a) sets an ambitious target of 50GW of offshore

wind by 2030. This strategy represents the latest Government target for offshore wind.

#### 2.3.1.2.2 Renewable Electricity Generation Targets

64. The Clean Growth Strategy published by BEIS (2017) recognises that the UK needs a range of energy generation infrastructure to ensure a reliable and affordable energy supply for consumers. The strategy also notes that a range of electricity generation infrastructure is necessary for meeting the UK Government's pledges on climate change action and the commitment to adopting renewable technologies as a significant proportion of the UK energy-generation mix.
65. The UK Government has set out its intention to decarbonise all sectors of the UK economy throughout the 2020s within the Clean Growth Strategy (BEIS, 2017), including within the energy sector. Reaffirmation of this ambition was provided as a commitment within the Offshore Wind Sector Deal (BEIS, 2019a) published several years after the Clean Growth Strategy. Specifically, the Offshore Wind Sector Deal reinforces the aims of the UK Government's Industrial Strategy to advance offshore wind generation as an integral part of a future low-cost, low-carbon, flexible grid system. In the process, this drive to transform the offshore wind industry is expected to boost productivity and competition within the UK supply chain. An industry investment of up to £250m through the Offshore Wind Growth Partnership is being made towards achieving the ambitions set out within the Offshore Wind Sector Deal, and to support better, high-paying jobs across the UK (BEIS, 2019a).
66. The energy supply sector experienced the largest reduction in CO<sub>2</sub> emissions of any industry between 2016-2017 (BEIS, 2018a). This reduction in power sector CO<sub>2</sub> emissions is driven by a change in fuel mix for electricity generation in 2017, with less use of coal and more use of renewables (BEIS, 2018a).
67. To incentivise the market for renewable sources of electricity generation since May 2019 the UK Government has run Contract for Difference (CfD) application rounds for less established technologies (such as offshore wind) every two years, with the latest allocation round (AR4) opening on 13 December 2021. This practice reaffirms the UK Government's support for renewable technologies. Via a Ministerial Statement from BEIS (dated 9 February 2022), the UK Government announced that in order to accelerate the deployment of low-carbon power generation the frequency of the CfD rounds would become annual from 2023 (increased from every two years).
68. In light of recent progress, the commitment to 30GW of energy generation from offshore wind as set out within the Offshore Wind Sector Deal (BEIS, 2019a) was superseded, with a target of 40GW contribution from offshore wind by 2030 announced by the previous Prime Minister (Boris Johnson) and set out in 'The Ten Point Plan for a Green Industrial Revolution' (HM Government, 2020b) and reiterated within the Net Zero Strategy: Build Back Greener (HM Government, 2021a). The Government has since increased the offshore wind capacity targets to 50GW by 2030 (HM Government, 2022), which would provide more than enough energy to power every home in the UK (The Crown Estate, 2022).
69. The National Infrastructure Assessment recommended that the UK Government aim to deliver at least 50% renewable generation by 2030, equating to between 12 and 19GW of offshore wind being deployed in addition to the current pipeline

(The National Infrastructure Commission, 2018). An updated National Infrastructure Assessment is expected in 2023.

70. New offshore wind projects such as North Falls represent a source of renewable energy which affords a wide range of benefits to the UK, including (but not limited to) economic growth, energy security and decarbonisation of a key industry. The Project will make a significant contribution to the UK's renewable energy supply and consequently help provide the above-mentioned benefits to the UK and more globally.
71. The Project would further help fulfil future increasing demand for energy, particularly in light of the decommissioning of UK coal-fired energy generation assets and at the time of writing, reduced global supply of gas from Russia.

### 2.3.2 Need for energy security

#### 2.3.2.1 Global imports

72. Reliance on global markets for imported energy leaves the UK vulnerable to spikes in world energy market prices, political pressure, potential physical supply disruptions and the knock-on effects of supply challenges in other countries. For example, a significant proportion of France's nuclear plants have been closed during 2022 due to planned maintenance, damage to facilities and very hot weather. The UK has therefore been using more gas power stations to supply France, via 3GW of electricity interconnectors. While interconnectors can help improve the UK's energy security, they can also place additional demand burden when other countries need them for their own security.
73. In addition, the British Energy Security Strategy (HM Government 2022) involves an *"approach to reduce global reliance on Russian fossil fuels whilst pivoting towards clean, affordable energy"* in the light of the invasion of Ukraine and concerns around reliance in Europe on Russian fuel imports, the constraining of which has led to significant global price rises for consumers. The strategy has been rapidly and urgently deployed, with the House of Commons (2022) stating that:

*"In 2021 imports from Russia made up 4% of gas used in the UK, 9% of oil and 27% of coal. In 2021, imports of gas, oil and coal from Russia to the UK were worth a combined £4.5 billion. According to Eurostat, in 2020, imports from Russia made up 39% of the gas used in the EU, 23% of oil imports and 46% of coal imports.*

*In June 2022, the fourth full month since the invasion, according to UK trade statistics, the UK Imported no oil, gas or coal from Russia. This was the third month in a row with no Russian gas imports, but the first month (since 2000 when this data is available back to) with no gas, oil or coal imports from Russia"*
74. In a global market, this further reduction in supply from Russia continues the upward pressure on prices for energy in the UK and Europe even when the UK's supplies are more diversified.
75. In 2022 the Queen's Speech (HM Government, 2022) highlighted the Energy Bill and the need to deliver the transition to cheaper, cleaner, and more secure energy, as well as the Energy Security Bill (BEIS, 2022a) which was introduced

to Parliament on 6 July 2022, which aims to deliver a cleaner, more affordable, and more secure energy system.

#### 2.3.2.2 Decommissioning of fossil fuel and nuclear generating stations

76. With existing fossil fuels and nuclear-powered electricity generation coming to the end of their operational lives, there is a need to replace the generating-output of old infrastructure being decommissioned. In 2020, 28% of energy used in the UK was imported, down sharply from the 2019 level due to the impact of the COVID-19 pandemic as the UK imported less fuel to meet reduced demand (BEIS, 2021c).
77. Electricity generation in the UK has fallen by 2.4% between 2018 and 2019 and by 15% between 2010 and 2019, highlighting the need for new infrastructure to deliver a secure national energy supply as part of a long-term sustainable energy policy and to support the UK Government's Net Zero Strategy (HM Government, 2021a) and policy to "*Build Back Better*" (HM Government, 2021b).
78. The UK Energy In Brief (BEIS, 2021c) summarises the Digest of UK Energy Statistics on energy production, consumption, prices and climate change in the UK. Figures show:
  - Renewable electricity accounted for a record 43.1% of electricity generated in the UK during 2020, more than 6 percentage points higher than in 2019;
  - Renewable energy use grew by 6.7% between 2019 and 2020;
  - Renewable energy use has increased almost tenfold since 2000;
  - Electricity generated from renewable sources increased by 13% between 2019 and 2020; and
  - Energy supply from wind increased by 18% in 2020 alone, with capacity up by 2.5%.
79. This demonstrates that renewable electricity generation is an integral part of the UK energy mix and requires maintaining and expanding to ensure a secure supply for future decades.

#### 2.3.3 Need to increase low carbon sources of energy generation

80. In light of the need to reduce greenhouse gas emissions and increase energy security, offshore wind farms represent an opportunity to increase electricity generation from a low carbon, low cost, renewable source.
81. As reported in the UK National Energy and Climate Plan (BEIS, 2019b), renewable sources accounted for the following in 2018:
  - 11% of capped gross energy consumption; and
  - 31.1% of the total UK electricity generation (of which offshore wind contributed 15%, onshore wind contributed 17%, bioenergy contributed 58%, with the remaining 10% met through a combination of hydro, photovoltaic and other small-scale renewable sources).
82. Electricity supply in the UK is met by a higher share of renewable sources than other energy demands such as heating / cooling and transport. Half of all renewable electricity in the UK is powered by wind (RenewableUK, undated).

83. As a result of the measures taken, the UK greenhouse gas emissions from electricity generation have decreased by 65% between 2008 and 2018 (CCC, 2020b). Multiple factors are responsible for the observed decrease in emissions, including the restructuring of the energy supply industry (a shift away from coal and oil generation towards gas and renewable generation), energy efficiency and implementation of industrial pollution control measures. Other policies have reduced emissions of non-CO<sub>2</sub> greenhouse gases, such as the increase in landfill methane capture and oxidation (BEIS, 2019b).
84. Despite the introduction of emission-reduction measures in the sector, energy supply was responsible for an estimated 82 metric tonnes of carbon dioxide equivalent (MtCO<sub>2</sub>e) or 19% of total greenhouse gas emissions in 2018 (BEIS, 2019b). This contributed to a 46% decrease in greenhouse gas emissions between 1990 and 2018, resulting from the transition from fossil-based fuels to renewable sources, alongside improvements in the efficiency of our economy.
85. In 2017, more than 50% of electricity came from low carbon sources, with the remainder generated through combustion of coal and gas. Coal use continues to fall, and on 21 April 2017, for the first time since 1882, Great Britain did not use any coal for a 24-hour period. Notwithstanding the effect of COVID-19, which saw reduced energy demand, it is notable that Great Britain went almost 68 days (1,630 hours), between 10 April 2020 and 16 June 2020, without using coal for electricity generation (National Grid, 2021).
86. A further gradual decline in fossil fuel-based generation out to 2035 is projected. The loss of output associated with closing further fossil-fuel electricity generation assets is anticipated to be replaced by more renewables and eventually nuclear based generation.
87. The updated Energy and Emissions Projections of 2019 predict that the low carbon share of UK electricity generation will rise from 51% in 2018 to 83% by 2040 (BEIS, 2020a). This includes electricity generation from renewables, such as North Falls, nuclear or carbon capture and storage power producers.
88. Through its Sixth Carbon Budget published in December 2020, the CCC advise that the UK reduce its emissions at least 78% by 2035 relative to 1990, a 63% reduction from 2019 (CCC, 2020b). According to the CCC's 'Balanced Pathway' approach to achieving Net Zero by 2050, deployment of low-cost renewables would need to account for 75% - 90% of electricity demand in 2050.

#### 2.3.4 Need for affordable energy supply

89. As offshore wind technology has matured and developers have innovated there has been a significant reduction in the cost of energy produced by offshore wind in recent years, with a 32% reduction between 2012 and 2016 (ORE Catapult, 2017). The latest allocation round of the UK Government's CfD scheme in July 2022 was notable for the ongoing reduction in cost of offshore wind projects to as low as £37.35/MWh, compared with the first CfD round in 2015 of which resulted in costs of up to £120/MWh (HM Government, 2020b). This demonstrates the progress being made, with a reduction in costs by 69% in seven years.
90. The UK's Electricity Generation Costs 2020 (BEIS, 2020b), estimated by 2030 the levelized cost of energy produced from offshore wind would be reduced to

£47/MWh, a reduction which has already been far exceeded. In the previous iteration of the UK's Electricity Generation Costs (BEIS, 2016), the 2030 levelised cost of electricity produced from offshore wind was estimated at £103/MW, demonstrating the rapid decrease in the levelised cost of energy that investment in this market has produced. According to BEIS (2020b), whilst the levelised cost of electricity produced from offshore wind is decreasing, the opposite is true for electricity produced by combined cycle gas turbine technology.

91. Furthermore, the UK Government has reaffirmed its plans to move to a “*strong, home-grown renewable energy sector*” to protect it from fluctuating international energy markets and avoid the impacts of volatile gas prices threatening energy suppliers and energy-intensive industries, such as that experienced during Autumn 2021 (BEIS, 2021e).

## 2.4 Additional benefits of renewable energy

### 2.4.1 Opportunity to maximise social and economic growth through energy infrastructure investment

92. In 2019 the Offshore Wind Sector Deal was adopted by the Government and the offshore wind sector to build on the United Kingdom's global leadership in offshore wind, maximising the advantages for UK industry from the global shift to clean growth. The Sector deal provided a target of delivering 30GW of energy from offshore wind by 2030. Subsequently, the Energy White Paper (HM Government, 2020a) commits to increase this target to 40GW. Building up to 40GW of offshore wind by 2030 could account for over £50 billion of infrastructure spending in the next decade. The Government has since increased the offshore wind capacity targets to 50GW by 2030 (HM Government, 2022).
93. A key commitment within the UK's Low Carbon Transition Plan (HM Government, 2009) was to assist in making the UK a green industry centre by supporting the development and use of clean energy technologies, a commitment updated by the Government's Ten Point Plan for a Green Industrial Revolution (HM Government, 2020b). This plan sets out how the UK can make the most of the opportunities presented by the shift to Net Zero and is a pivotal part of both the Net Zero Strategy (HM Government, 2021a) and the Build Back Better Plan for Growth to deliver a green industrial revolution (HM Government, 2021b).
94. The Ten Point Plan explains the Government's vision for the energy industry whereby Industry and Government work together to build a competitive and innovative UK supply chain that delivers and sustains jobs, exports and generates economic benefits for the UK, supporting offshore wind as a core and cost-effective part of the UK's long-term electricity mix. The Offshore Wind Sector Deal (BEIS, 2019a) estimates that by 2030, offshore wind could support 27,000 jobs.
95. Furthermore, the UK Government's Offshore Wind Manufacturing Investment Support Scheme has been put in place to help deliver these ambitions and is designed to support the delivery of manufacturing investment in the offshore wind supply chain. It provides grant funding for major investments in the manufacture of strategically important offshore wind components (BEIS, 2021b). This scheme will be integral to delivery of this employment, which will be essential in supporting

the goals of the Low Carbon Transition Plan to make the UK a green industry centre.

96. The UK low carbon and renewable energy economy grew by £2.1 billion (5%) to £42.6 billion in 2016, from £40.5 billion in 2015; it continued to account for around 1% of total UK non-financial turnover (Office for National Statistics, 2018). Since 2016, the low carbon and renewable energy economy has remained static, valued at £42.6 billion in 2019 (Office for National Statistics, 2021).
97. The UK Government's Clean Growth Strategy (BEIS, 2017) concluded that between 1990 and 2016, the UK reduced its emissions by 42% while the economy grew by 67%. Further analysis has concluded that continuing to develop on this, significant economic benefits can be captured from these decarbonising trends. The UK Offshore Wind Sector Deal sets the ambition to increase jobs in the offshore wind industry from current levels of 7,200 to 27,000 by 2030, much of this relating to growth in manufacturing and exports (BEIS 2019a). As a whole, the low carbon and renewable energy economy employed 202,100 full-time equivalent (FTE) staff in 2019 (Office for National Statistics, 2021).

## 2.5 Green recovery from COVID-19

98. Page 4 of the UK Government's Energy White Paper (HM Government, 2020a) notes:

*“As nations move out of the shadow of coronavirus and confront the challenge of climate change with renewed vigour, markets for new green products and services will spring up round the world.”*
99. The UK Government consistently voiced throughout 2020/21 its commitment to 'build back greener' following the COVID-19 pandemic in order to tackle climate change and stimulate economic recovery. Electricity demand and power prices were significantly reduced from previous years as a result of the mandatory lockdowns enforced throughout 2020 due to COVID-19. The threat of significant long-term effects remains present, with lockdown impacts feeding through into a weak economy and resulting in a high risk of industrial and commercial business closures.
100. Notwithstanding the longer-term impacts of COVID-19, combatting climate change requires an immediate, sustained and concerted effort. The UK Government has initiated a strategy to 'build back better' through 'fairer, faster, greener' investment (HM Treasury, 2020). The near-term impacts of the COVID-19 pandemic are therefore not anticipated to negatively impact the continued development of long-term energy infrastructure assets, rather the national need to make long-sighted investments now which support a green recovery from 2020's difficult times is anticipated to support energy infrastructure investments. The Energy White Paper puts in place a strategy for the wider energy system that (HM Government, 2020a):
  - Transforms energy, building a cleaner, greener future for our country, our people and our planet; and

- Supports a green recovery, growing our economy, supporting thousands of green jobs across the country in new green industries and leveraging new green export opportunities.
101. In June 2020, BEIS (now DESNZ) launched an inquiry on Post-Pandemic Economic Growth. The inquiry was established to consider all options available to the UK Government to secure the UK's economic recovery from the impact of COVID-19, covering investment, industrial strategy, jobs, skills, exports and sustainable growth. The inquiry is likely to examine the measures needed to stimulate economically and environmentally sustainable growth and investigate whether life following COVID-19 presents an opportunity for a resetting of the UK economy and (among other themes) to drive forward progress on broader UK Government priorities including the delivery of green growth and speeding up progress on delivering Net Zero.
  102. In June 2020, the then Prime Minister challenged the UK to 'build better and build greener but also build faster', saying that 'the UK would lead in markets and technologies such as Net Zero planes and long-term solutions to global warming such as solar, wind, nuclear, hydrogen and carbon capture and storage.' (Energy Live News, 2020a). In July 2020, the UK Government committed £350m to 'supercharging green recovery' (Energy Live News, 2020b).
  103. The CCC provide strong direction in their 2021 Progress Report to Parliament (CCC, 2021b). They present evidence of how a range of low-carbon and climate adaptation 'green stimulus' measures can fulfil both the short-term needs (protecting workers and businesses and rebuilding a greener economy) and long-term needs (investing in key assets to build capacity and enable productive activity in the future) arising from the COVID-19 pandemic (CCC, 2021b), and anticipate opportunities to pivot the economy to long-term environmental solutions.
  104. In November 2020, in anticipation of the publication of the UK Government's Energy White Paper, the Energy Minister confirmed that the Government remained committed to domestic and international efforts to tackle climate change; and explained that Government would '*Build on [the new Energy White Paper] to deliver a stronger greener and more sustainable economy after the pandemic ... relying on experts ... to drive forward the agenda along our path to net zero*' (Energy Live News, 2020c). The Prime Minister's Ten Point Plan, part of a broader £12 billion package of public investment, provided further evidence that the Government remained focussed on delivering in this important sector (HM Government, 2020b).
  105. In 2021, the UK Government released the Net Zero Strategy: Build Back Greener which states the following key commitments to decarbonising UK power, of relevance to offshore wind farms:
    - Take action so that by 2035, all our electricity will come from low carbon sources, subject to security of supply, bringing forward the government's commitment to a fully decarbonised power system by 15 years.
    - Accelerate deployment of low-cost renewable generation, such as wind and solar through the Contracts for Difference scheme by undertaking a review of the frequency of the CfD auctions.



- Deliver 40GW of offshore wind by 2030 [now 50GW as shown in the British Energy Security Strategy (HM Government, 2022)],
- Adopt a new approach to onshore and offshore electricity networks to incorporate new low carbon generation and demand in the most efficient manner, taking account of the environment and local communities.
- Provide £380m for our world-leading offshore wind sector, investing in supply chains, infrastructure and early-coordination of offshore transmission networks, securing jobs and benefitting communities across the UK.
- Reform system governance so that the whole system can achieve our net zero ambitions and meet consumers' needs.
- Consider whether broader reforms to our market frameworks are needed to unlock the full potential of low carbon technologies to take us all the way to net zero.
- Ensure that consumers pay a fair, affordable price for their energy, and can engage with a retail energy market that offers the products and services required to make choices that support net zero.
- Ensure the planning system can support the deployment of low carbon energy infrastructure.

## 2.6 Benefits from development of the Project

### 2.6.1 North Falls' contribution to meeting the Government's targets

106. North Falls Offshore Wind Farm Limited is a joint venture between SSE Renewables and RWE. Both developers have extensive experience in developing offshore wind farms and realising the benefits associated with these generating assets.
107. There is currently c. 55GW of offshore wind capacity in the pre-planning and planning stages, of which only 11.4GW (including North Falls) has a grid connection offer on or before 2030. With c. 31GW consented, in construction or operational, there remain significant challenges in achieving the 50GW target by 2030.
108. In light of this challenge, the 2017 Extension projects were identified by The Crown Estate to provide an intermediate process between Rounds 3 and 4 to help contribute to the 2030 targets, recognising that extensions to existing offshore wind farms are a proven way of efficiently developing more offshore generating capacity (TCE, undated).
109. Furthermore, a white paper by the Imperial College London (2021), states that the capacity of offshore wind required to achieve the 2035 target to decarbonise the electricity system in the UK will require 108GW of offshore wind farms.

**Table 2.2: Status of UK Offshore Wind Farms**

Project Status	No. of Projects	Estimated capacity (GW)
Early planning/pre-scoping	25	10,720
In planning – pre-submission	28	36,463
In planning – post-submission	7	7,895

Project Status	No. of Projects	Estimated capacity (GW)
Consented	8	10,960
In construction	5	6,560
Operational	39	13,720

110. The Project would make a significant contribution to domestic renewable electricity generation, and the achievement of the UK's national renewable energy targets.
111. The contribution of the Project would partly address energy security through replacing electricity output from decommissioned (or yet to be decommissioned) older generating stations with low carbon electricity and reduce the reliance on imports of gas and electricity for use in the UK.

### 2.6.2 Socio-economics

112. An assessment of potential socio-economic impacts of the Project has been undertaken and is presented within Chapter 33 Socio-economics of this PEIR (Volume I).
113. It is estimated that the Project's annual Gross Value Added (GVA) contribution to the UK economy would be around £29 to 70 million during construction<sup>1</sup> and £20 million during operation<sup>2</sup>.
114. The total contribution to UK employment is estimated to range from 280 to 310 FTE jobs per annum during the onshore construction phase, with a further 50 to 420 FTE jobs per annum during the offshore construction.
115. Once operational, North Falls would support employment associated with the ongoing O&M of the onshore and offshore infrastructure.

## 2.7 Summary

116. The need for North Falls Offshore Wind Farm is well established within the existing national policy framework through the relevant National Policy Statements and within extensive literature. The Project will help to deliver on the UK Government's climate change targets, on reducing emissions and increasing the proportion of renewables within the energy mix and generating more electricity from low-carbon sources.
117. Beyond contributing to the national and international targets on climate change, significant investment in the UK would be needed at every stage of the Project with tangible benefits for employment and supply chains. This would help achieve

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<sup>1</sup> Based on an average £24-27 million per annum during the onshore construction phase and £5-43 million per annum during offshore construction

<sup>2</sup> Based on an average £333,800 per annum onshore and £18 to £20 million offshore, over an assumed 30 year operational phase.

the green economic recovery envisaged by the Government in the wake of the COVID-19 pandemic.

118. The planned updates to NPS EN-1 and EN-3 reinforce support for the growth in offshore wind generation, with the generation of utility-scale quantities of electricity from renewable energy sources having a direct and measurable effect on climate change and in meeting the UK's climate change and emissions reduction targets.
119. The Project directly aligns with the key drivers in current and planned National Policy and supports the offshore wind targets in the UK; clearly establishing the need for the Project.

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