



Five Estuaries Stage 2 Consultation
Stage 2 Consultation – Webinar

Agenda

TOPICS	
01	Welcome
02	Project overview and Offshore Transmission Network Review
03	Consultation and process
04	Offshore
05	Onshore
06	Local Benefits
07	Questions

FIVE ESTUARIES OFFSHORE WIND FARM

Why the Project is Needed



The UK Government has set an ambitious target to deploy up to 50GW of offshore wind by 2030.

This is five times more than the 10GW we currently produce and enough to power every home at current electricity usage levels.

Offshore wind power will play an essential role in our future electricity generation as we work to tackle climate change and reduce emissions.

Offshore wind energy can provide:

- National energy security
- Reduction in greenhouse gas emissions
- Affordable energy
- Maximised economic opportunities from energy infrastructure investment for the UK

Connection to
National Grid
Substation



Harwich

Clacton on Sea

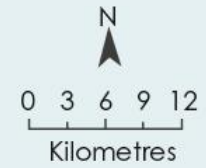
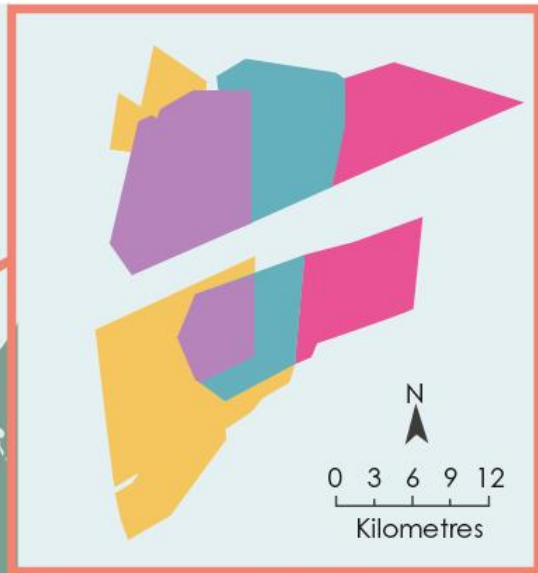
37 km from array
to shore

Up to 79
Turbines

Array area – 128 km²



Suffolk



Offshore wind farm legend

Wind farm sites in development

- Five Estuaries
- North Falls

Wind farms sites in operation

- Galloper
- Greater Gabbard

Project Summary



Wind farm area -128km²



37km closest distance to shore in Suffolk



Up to 79 turbines across two separate seabed areas



One new onshore substation to connect the project into the National Grid proposed East Anglia GREEN Connection Substation

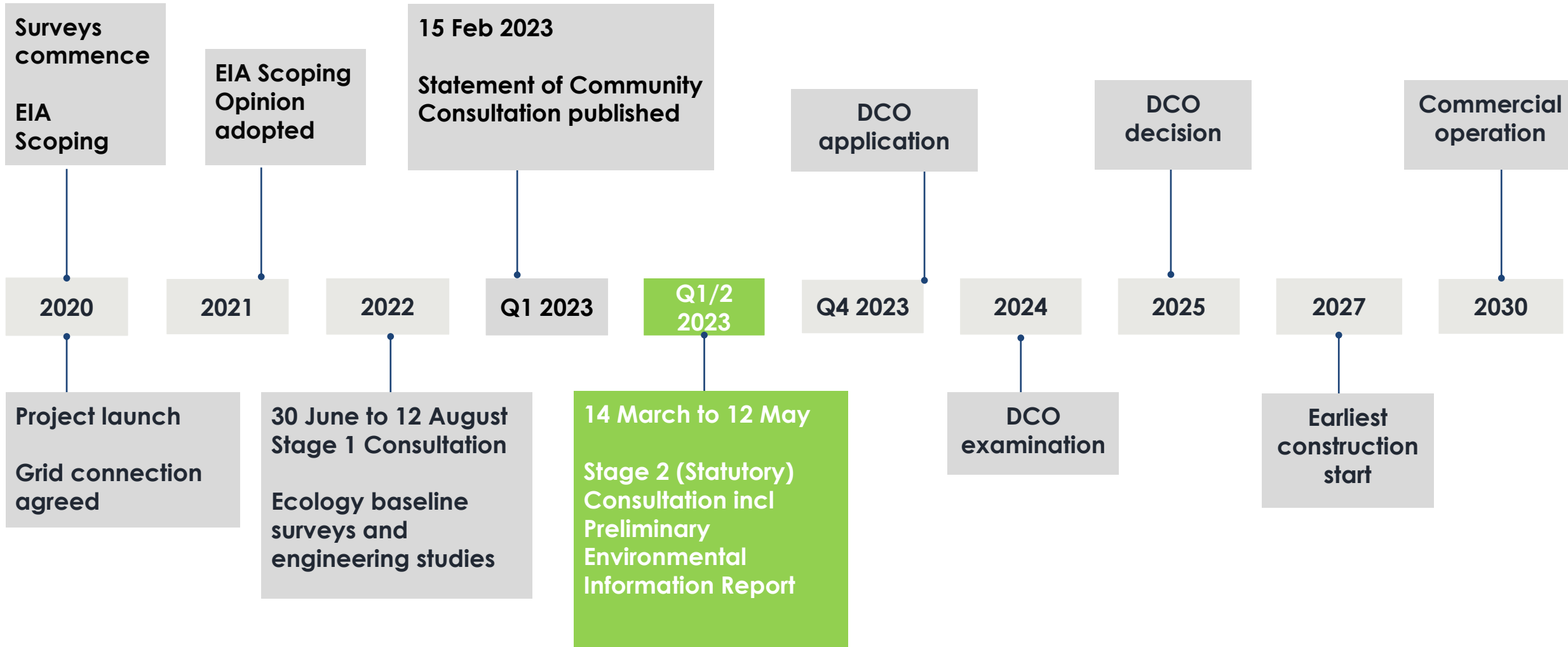


Could power hundreds of thousands UK households each year



Project Partners – RWE (25%), a Macquarie-led consortium (25%), Siemens financing arm, Siemens Financial Services (25%), ESB (12.5%) and Sumitomo Corporation (12.5%). RWE is leading the development

Indicative Project Timeline



Developing the Project

- Details of design evolution and options considered are presented in the Preliminary Environmental Information Report as part of the consultation
- Engagement to support project development began in 2020.
- Working with statutory stakeholders, such as:
 - Natural England
 - Local Port Authorities
 - Fishermen
 - Environment Agency
 - Local Councils
- Feedback from our 1st stage Consultation in Summer 2022 and now Stage 2 due to complete 12th May.
- Lessons learnt and experience from previous projects e.g. Galloper.

Offshore Transmission Network Review

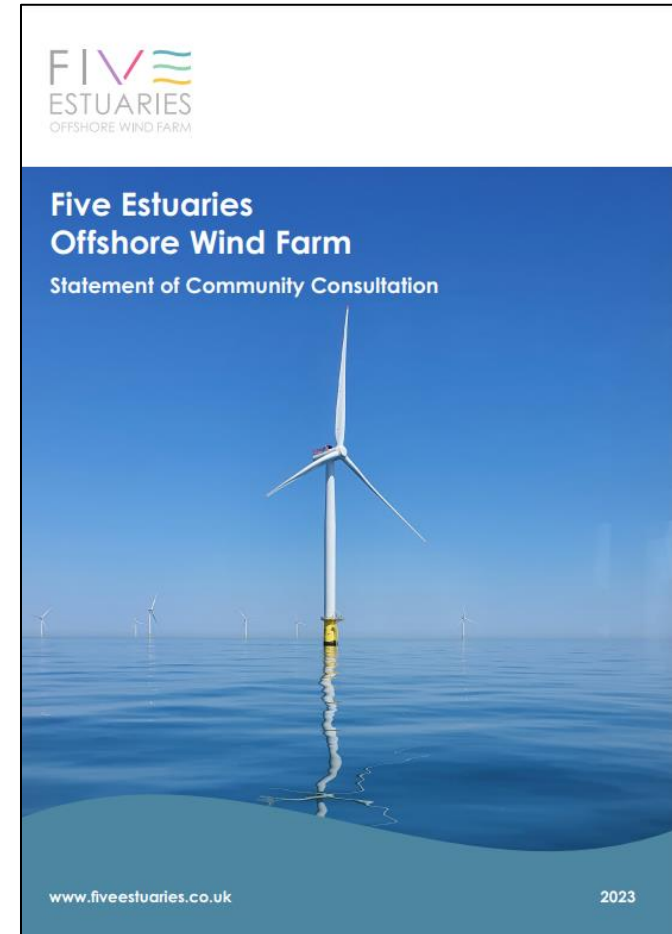


- Offshore Transmission Network Review (OTNR) – Feasibility of coordinated connections, consistent with the ambition to deliver net zero emissions by 2050.
- Viability of such coordinated connections is dependent on associated regulatory and commercial policy frameworks being in place.
- Five Estuaries needs to continue to develop plans based on existing regulations to provide an onshore connection by 2030 in support of the UK Government's 2030 targets of 50GW.
- We are participating in the Offshore Coordination Support Scheme (OCSS) as part of the OTNR. A grant scheme to help projects explore coordination options but does not presume an outcome - Successful applicants announced this summer.

Stage 2 Consultation

Stage 2 Consultation

- **14 March to 12 May 2023**
- Information placed in 20 information points in Essex, Suffolk and Kent.
- 10 events covering areas near the proposed onshore infrastructure and areas of potential visibility.
- Two online events.
- Digital by default approach; with a hyperlinked 'guide to the PEIR' and an interactive map.



Preliminary Environmental Information Report



- First output of the Environmental Impact Assessment process.
- Covers baseline, potential impacts, and methods to reduce or mitigate those impacts.
- Seven volumes, covering both offshore and onshore topics.

Non-Technical Summary: A standalone document providing an overview of the Five Estuaries Offshore Wind Farm Project and a summary of the main findings of the Environmental Impact Assessment.

Volume 1: Introductory Chapters			
1.1	Introduction	1.3	EIA Methodology
1.2	Policy and Legislation	1.3.1	Cumulative Effects Assessment Methodology
1.4	Site Selection and Alternatives	1.3.2	Transboundary Screening

Volumes 2 and 4: Offshore Reports and Technical Annexes			
2.1	Offshore Project Description	2.5	Benthic and Intertidal Ecology
2.1.1	Detailed Offshore Project Design Envelope	4.5.1	Main Array - Benthic Ecology Monitoring Report
2.2	Marine Geology, Oceanography and Physical Processes	4.5.2	Export Cable Route and Intertidal Benthic Ecology Monitoring Report
4.2.1	Physical Processes Baseline Technical Report	2.6	Fish and Shellfish Ecology
4.2.2	Physical Processes Model Design and Validation	4.6.1	Fish and Shellfish Ecology Technical Baseline Report
4.2.3	Physical Processes Technical Assessment	4.6.2	Underwater Noise Technical Report
4.2.4	Main Array and Export Cable Route - Environmental Features Report	4.6.3	Spawning Herring Heatmaps [International Herring Larval Survey Data]
2.3	Marine Water and Sediment Quality	2.7	Marine Mammal Ecology
4.3.1	Water Framework Directive Assessment Note	4.7.1	Marine Mammals Baseline Characterisation
2.4	Offshore Ornithology	2.8	Commercial Fisheries
4.4.1	Offshore Ornithology Technical Report	4.8.1	Commercial Fisheries Technical Baseline Report
4.4.2	Seabird Abundance by Month	2.9	Shipping and Navigation
4.4.3	Seabird Densities by Month	2.10	Seascape, Landscape and Visual
4.4.4	Seabird Abundances by Survey	2.11	Offshore Archaeology and Cultural Heritage
4.4.5	Seabird Densities by Survey	4.11.1	Offshore Archaeology and Cultural Heritage Technical Report
4.4.6	Seabird Peak Seasonal Abundances	4.11.2	Outline Marine Written Scheme of Investigation
4.4.7	Seabird Peak Seasonal Densities	2.12	Infrastructure and Other Marine Users
4.4.8	Collision Risk Modelling Inputs and Outputs	2.13	Military and Civil Aviation
4.4.9	Seabird Distributions Recorded in Aerial Surveys	2.14	Inter-Relationships
4.4.10	Digital Video Aerial Surveys of Seabirds and Marine Mammals at Five Estuaries: Annual Report for March 2019 to February 2020		
4.4.11	Digital Video Aerial Surveys of Seabirds and Marine Mammals at Five Estuaries: Two-year Report March 2019 to February 2021		

Volume 6: Seascape, Landscape and Visual Impact (Onshore and Offshore) Annexes:

6.10.1	Seascape, Landscape and Visual Methodology	6.2.1	Onshore Landscape and Visual Impact Assessment Figures
6.10.2	Seascape, Landscape and Visual Viewpoint Assessment	6.2.2	Onshore Landscape and Visual Impact Assessment Photomontages
6.10.3	Seascape, Landscape and Visual Figures and Photomontages		

Scoping Opinion: A document provided by the Planning Inspectorate on behalf of the Secretary of State (SoS) in respect of the proposed development, where the SoS writes its opinion on the scope, and level of detail to be provided in an Environmental Statement.

Volumes 3 and 5: Onshore Assessments and Technical Annexes			
3.1	Onshore Project Description	3.7	Archaeology and Cultural Heritage
3.2	Landscape and Visual Impact Assessment	5.7.1	Historic Environment Desk-Based Assessment
3.3	Socio-Economic, Tourism and Recreation	5.7.2	Onshore Geophysics
3.4	Onshore Biodiversity and Nature Conservation	5.7.3	Geoarchaeological Desk Based Assessment
5.4.1	Preliminary Ecological Appraisal (Onshore) Report	5.7.4	Archaeological and Geoarchaeological Monitoring of Ground Investigation works
5.4.2	Habitat and Hedgerow Survey Report: North of A120	5.7.5	Onshore Cultural Heritage: GPA3 Exercise and Technical Note - Offshore Array
5.4.3	Habitat and Hedgerow Survey Report: South of A120	5.7.6	Onshore Cultural Heritage: GPA3 Exercise and Technical Note - Onshore Project Area
5.4.4	Great Crested Newt Survey Report: North of A120	3.8	Traffic and Transport
5.4.5	Great Crested Newt Survey Report: South of A120	5.8.1	Traffic and Transport Baseline Report
5.4.6	Wintering Bird Survey (Landfall Locations)	5.8.2	Traffic and Transport Trip Generation and Distribution
5.4.7	North Falls Offshore Wind Farm Holland Haven Marshes SSSI and Adjacent Land NVC Survey 2021	5.8.3	Traffic and Transport Outline Construction Traffic Management Plan
5.4.8	North Falls Offshore Wind Farm Extended Phase 1 Habitat Survey 2021	5.8.4	Traffic and Transport Outline Public Access Management Plan
5.4.9	North Falls Offshore Wind Farm Holland Haven Marshes SSSI: Survey and Assessment of Aquatic and Terrestrial Invertebrates 2021	5.8.5	Traffic and Transport Outline Workforce Travel Plan
5.4.10	North Falls Offshore Wind Farm Onshore Landfall Area: 2020/21 Non-breeding Bird Surveys	3.9	Airborne Noise and Vibration
5.4.11	North Falls Offshore Wind Farm Onshore Landfall Area: 2021/22 Non-breeding Bird Surveys	5.9.1	Onshore Airborne Noise Baseline Noise Survey
5.4.12	Offshore Wind Farm Onshore Cable Route: Non-breeding Bird Surveys 2021-22	5.9.2	Onshore Airborne Noise Construction Sound Power Details
5.4.13	North Falls Offshore Wind Farm Onshore Landfall Area: Breeding Bird Surveys 2021	3.10	Air Quality
5.4.14	Five Estuaries Offshore Wind Farm Onshore Biodiversity Net Gain Approach	5.10.1	Construction Dust Assessment Methodology
5.4.15	Statutory Designated Sites Qualifying or Notified Features	5.10.2	Non Road Mobile Machinery Emissions Assessment
3.5	Ground Conditions and Land Use	5.10.3	Offshore Activities Assessment
3.6	Hydrology, Hydrogeology and Flood Risk	5.10.4	Road Traffic Dispersion Modelling Methodology
5.6.1	Onshore Export Cable Corridor Flood Risk Assessment	5.10.5	Air Quality Mitigation Measures
3.11	Human Health, Major Disasters and Climate Change		

Volume 7: Other Documents

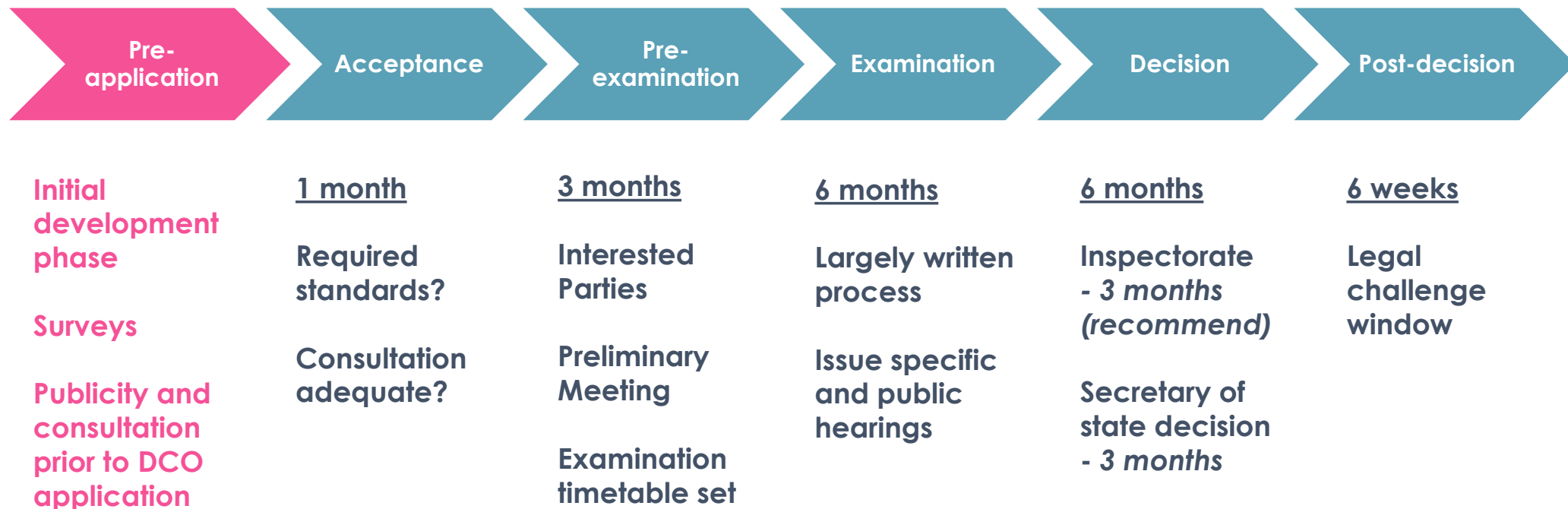
7.1	Schedule of Monitoring	7.5	Landscape and Ecology Design Principles
7.2	Schedule of Mitigation	7.6	Navigational Risk Assessment
7.3	Draft Code of Construction Practice	7.7	Marine Conservation Zone Assessment
7.4	Crossings Register	7.8	Outline Marine Mammal Mitigation Protocol

Importance of Feedback

- Feedback is an important part of improving the quality of applications, both in refining our proposals and ensuring the robustness of our environmental assessments and mitigation plans.
- Due to the Planning Act 2008, we have a duty to consider the relevant responses we receive to the consultation.
- This is likely to be the last chance for stakeholders to comment on the proposals directly to us before we submit our application.
- The deadline for responses is the end of the day on **Friday 12 May 2023**.

Development Consent Orders

- As this project will generate over 100MW, it is therefore classified as a Nationally Significant Infrastructure Project.
- Development Consent Order (DCO) required under the Planning Act 2008. The Planning Inspectorate makes a recommendation to the Secretary of State (SoS) for Business, Energy and Industrial Strategy (BEIS), who then takes a final decision.

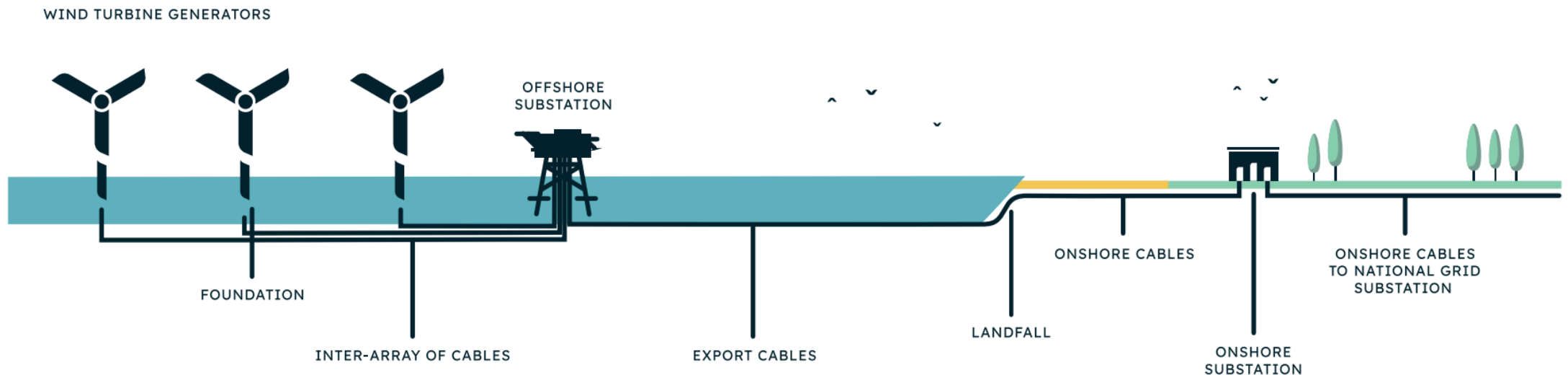


OFFSHORE DEVELOPMENT

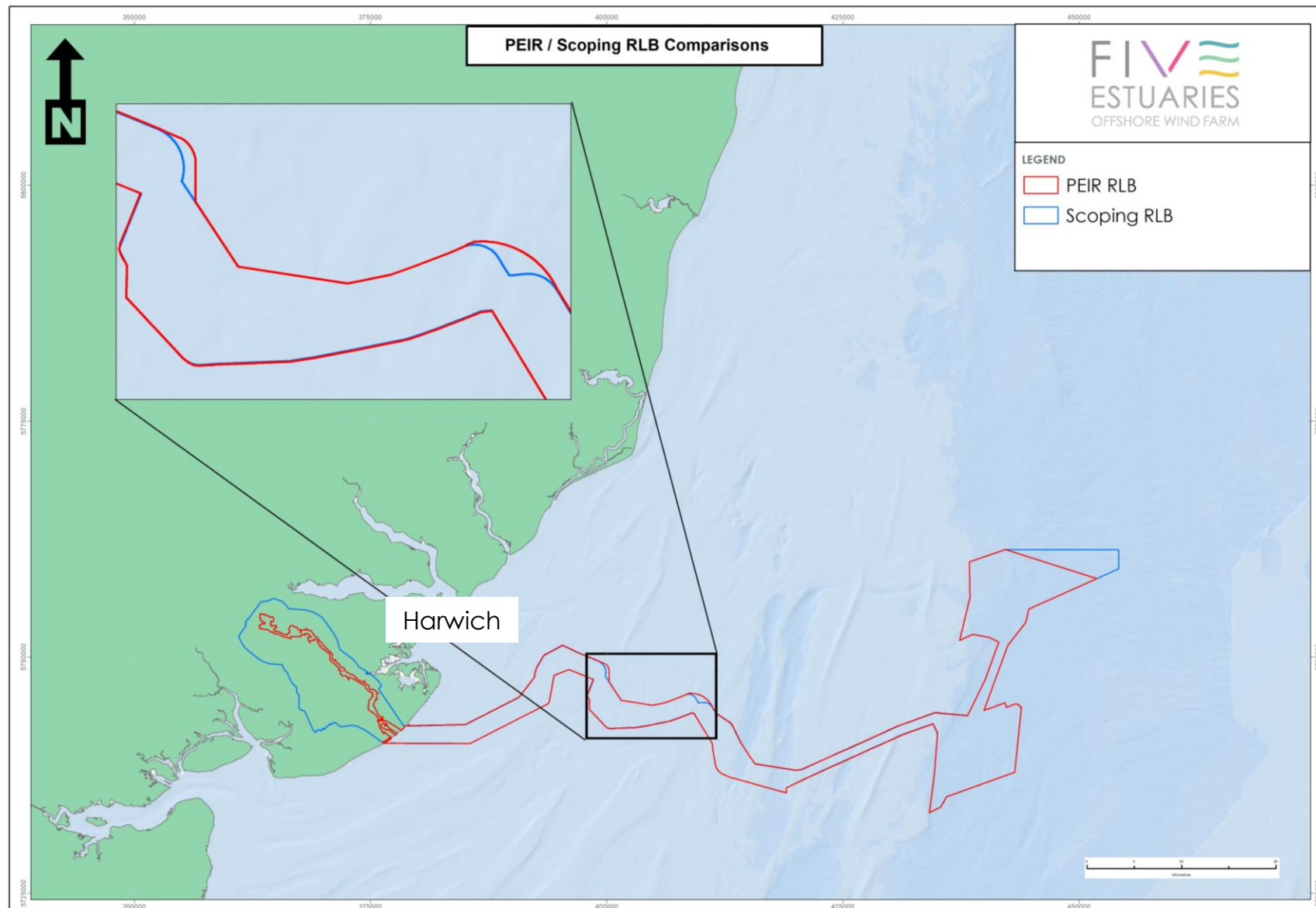


Offshore Overview

- Up to 41 or 79 turbines
- Up to 420m at the tallest point of blade tip above sea level
- Split across two seabed areas
- Closest distance to shore is around 37km to the coast of Suffolk
- Foundations for the turbines will be installed into or on the seabed
- Up to 200km of inter-array cables connect the wind turbines to the offshore substation(s)
- Offshore substation platform/s collect and export the power generated by the turbines
- Up to four electrical circuits in a corridor up to 84km long to connect the offshore substation(s) to shore.



Progress Since Stage 1 Proposals



The northern array's developable area has reduced by 22% since scoping; a 16% reduction of the total developable area.

The offshore export corridor has been widened to enable opportunities to reduce interaction/crossings with other sea users in the vicinity.

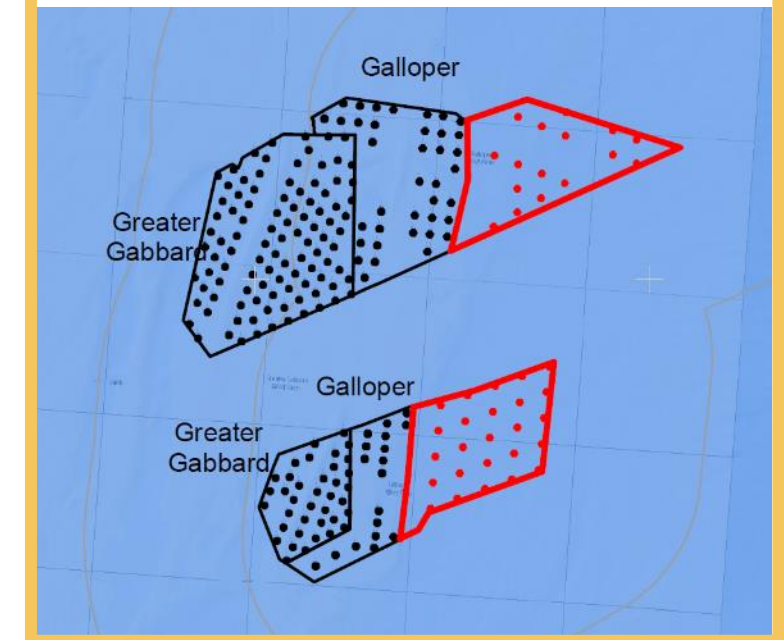
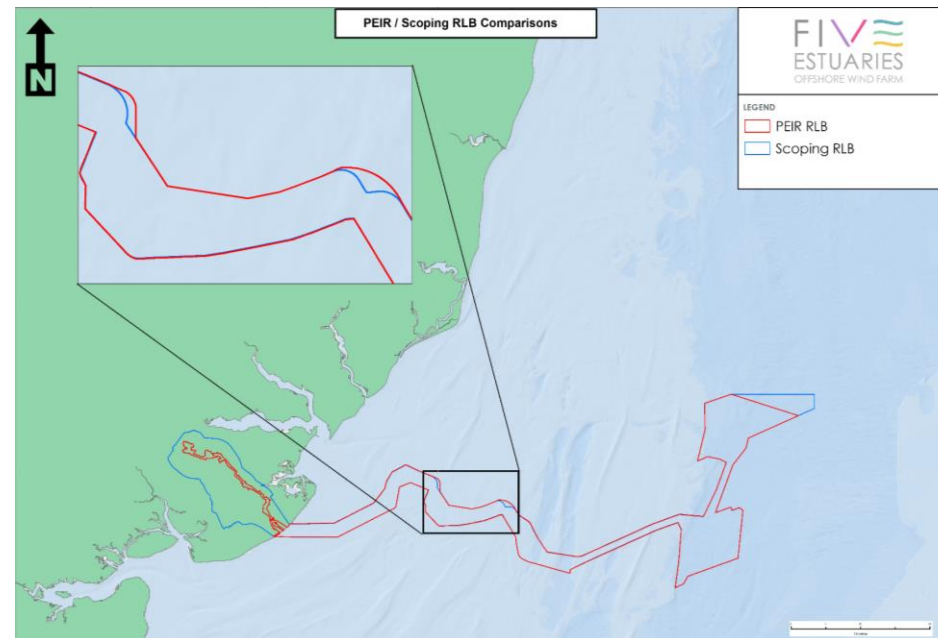
Maximum Design Scenario

Worst case parameters assessed for the PEIR

Parameter	
Maximum Number WTG Installed	79
Max Rotor Diameter (m)	260m
INDICATIVE Max Blade Tip Height (above mean high water)	324m

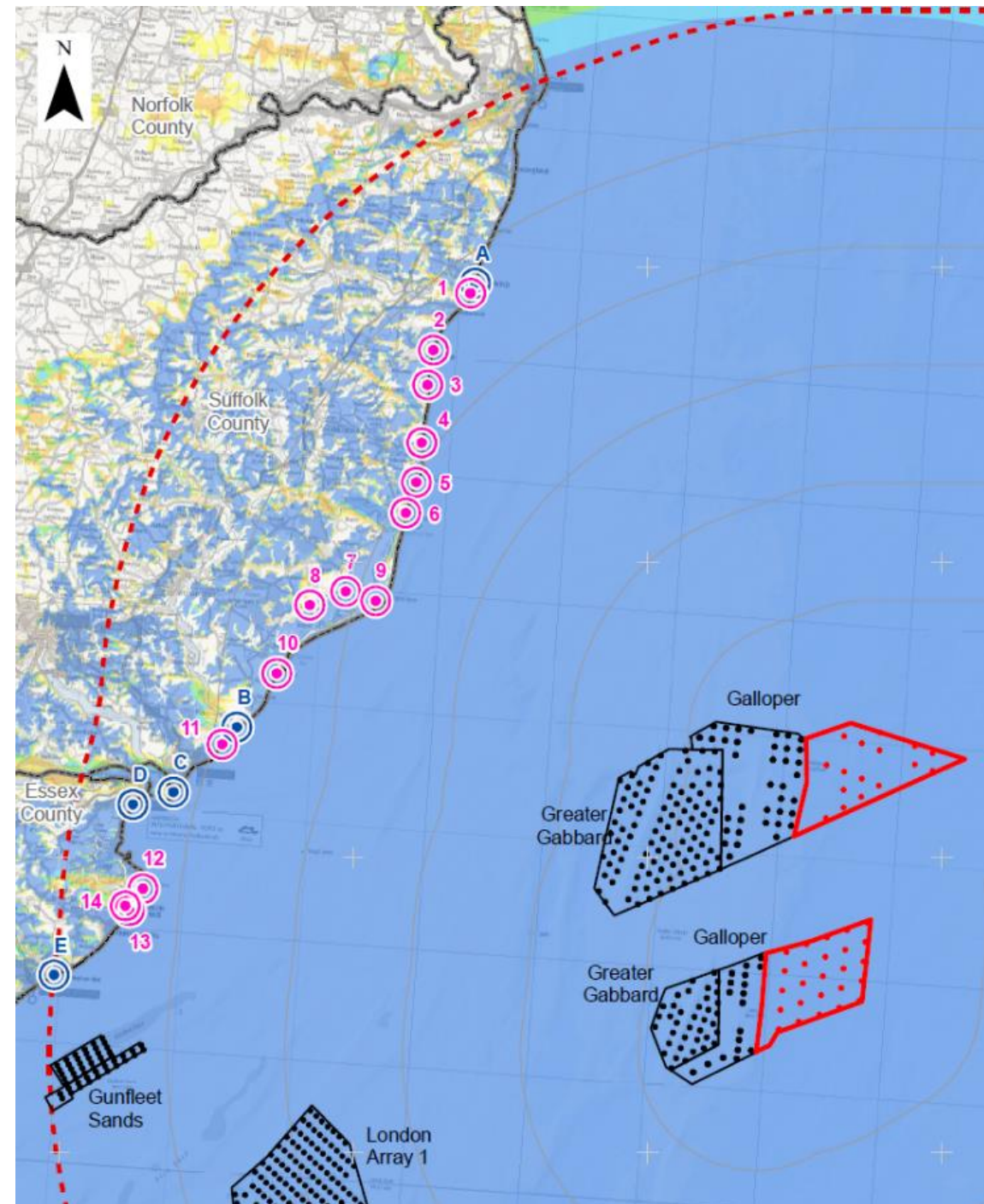
SLVIA worst-case assumption:
41
360m
420m

- Reduction in spatial extent of northern array area.
- Five Estuaries array area remains over 37km from Suffolk coast.
- Max turbine height increased from 402m.
- 60km Seascape, Landscape and Visual Assessment study area.



Viewpoints

No	Viewpoint
1	Southwold (Gun Hill)
2	Dunwich (Beach)
3	Dunwich Heath (Coastguard Cottages)
4	Sizewell Beach
5	Thorpeness
6	Aldeburgh
7	Orford Castle
8	Burrow Hill (Suffolk Coast Path)
9	Orfordness (Roof - Bomb Ballistics Building)
10	Shingle Street
11	Old Felixstowe
12	The Naze (The Naze Tower)
13	Walton Pier (Walton-on-the-Naze)
14	Mill Lane, Walton
A	Southwold Pier
B	Bawdsey Manor
C	Landguard Fort
D	Harwich
E	Clacton-on-Sea
F	Foreness Point (Kent)
	Night time viewpoints:
2	Dunwich Beach
6	Aldeburgh
11	Old Felixstowe
12	The Naze (The Naze Tower)



Minimising Offshore Impact to the Environment and Communities

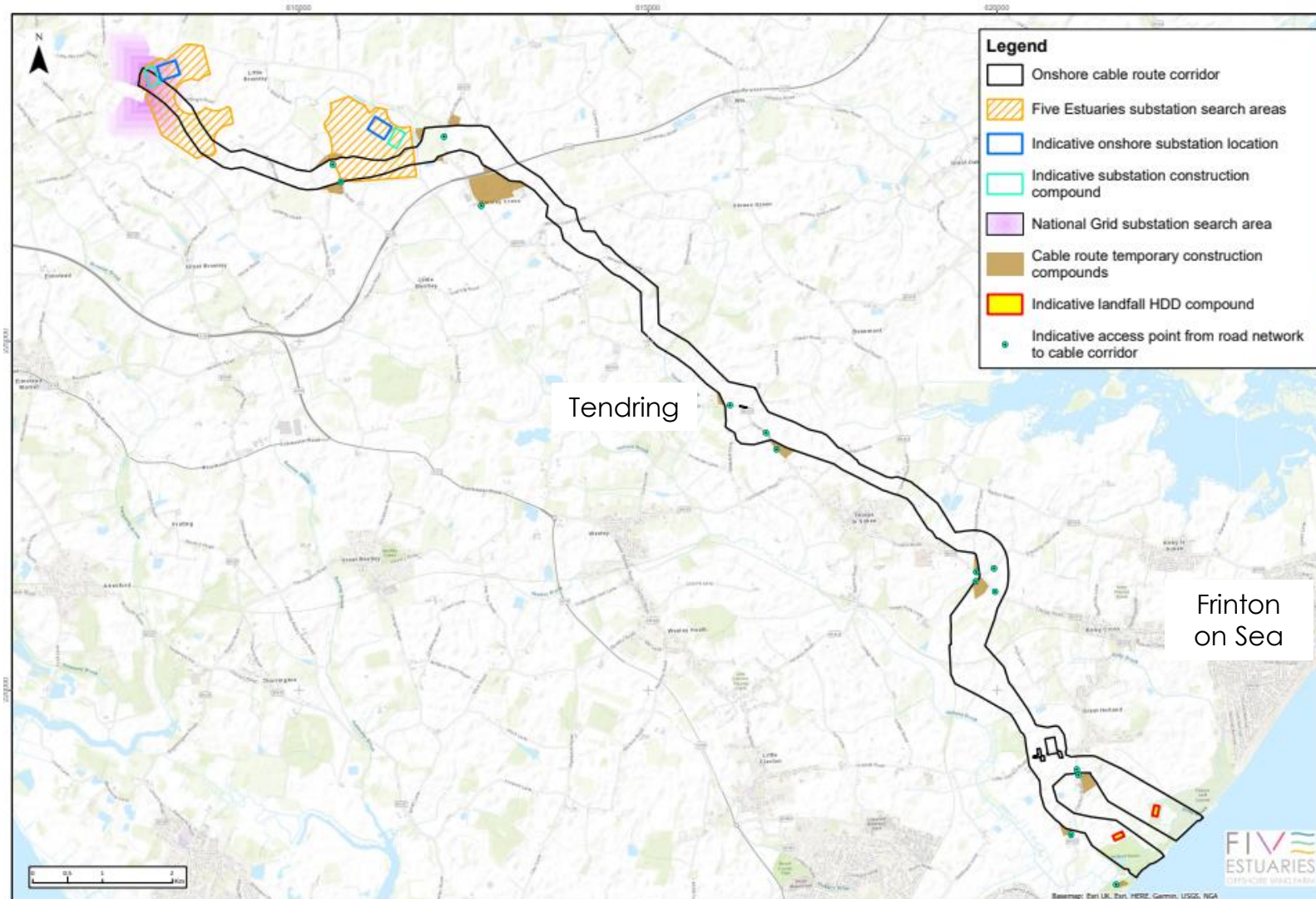


- Mitigation measures identified in the PEIR, and will be secured through the DCO, including:
 - Refined northern array boundary following scoping feedback to resolve shipping and navigation impacts.
 - Marine Mammal Mitigation Plan
 - Archaeological Written Scheme of Investigation, Protocol for Archaeological Discoveries and Archaeological Exclusion Zones.
- Engaging with commercial fisheries on co-existence via our commercial fisheries working group.
- Ongoing engagement with shipping navigation and ports.

ONSHORE DEVELOPMENT



Onshore Overview

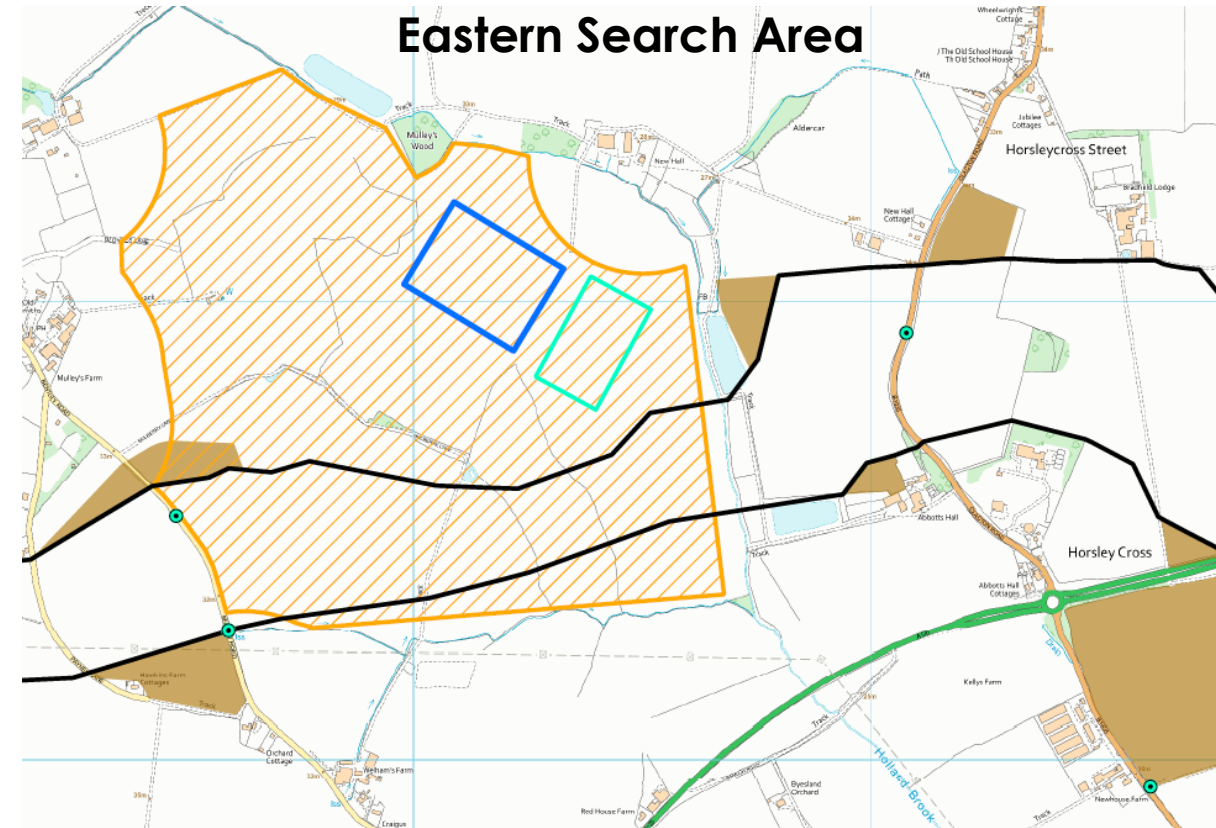
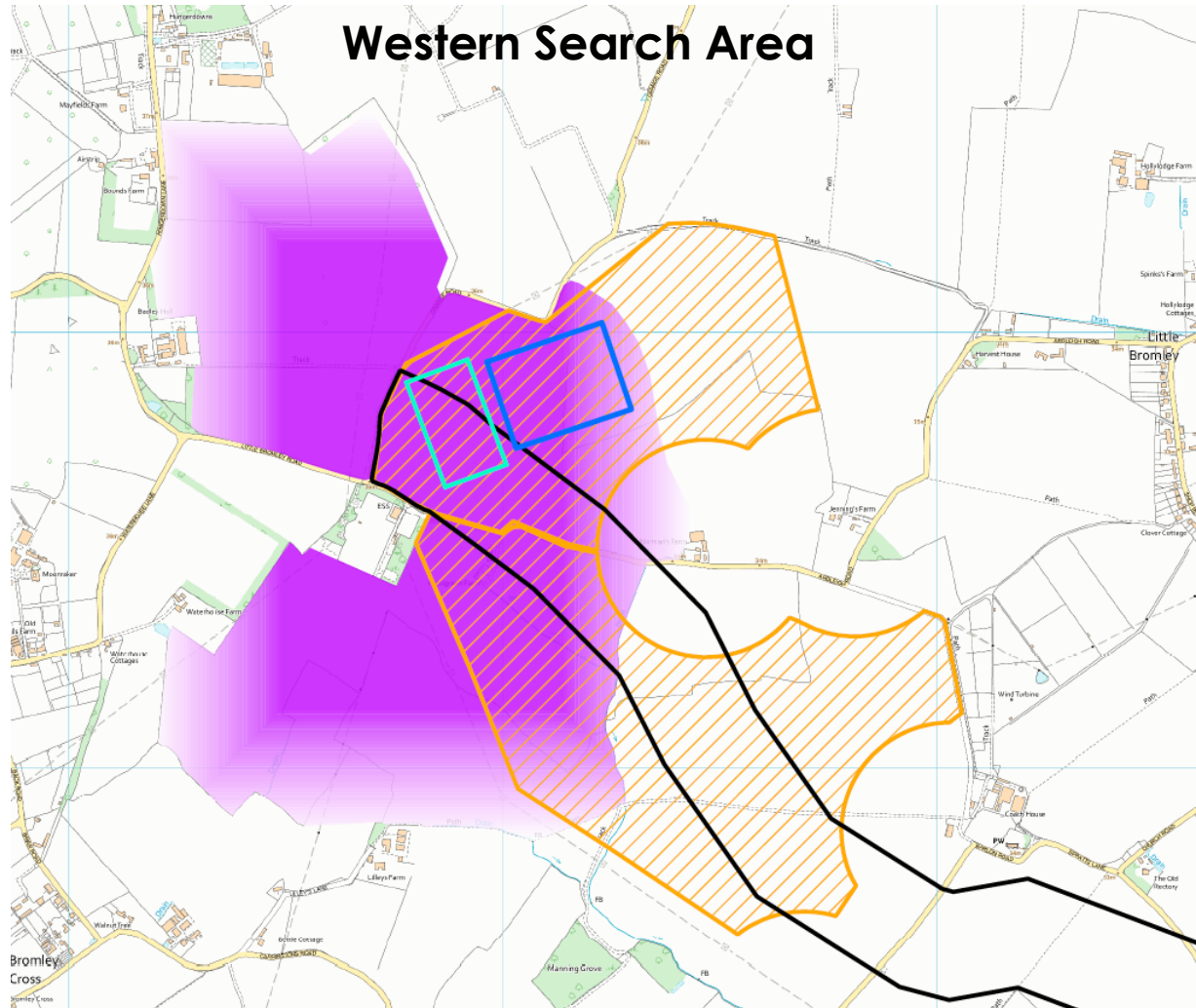






Onshore project boundary:

- Landfall between Holland-on-Sea and Frinton-on-Sea
- Approx. 22km onshore underground cable corridor
- One onshore substation
- Connection to proposed National Grid substation

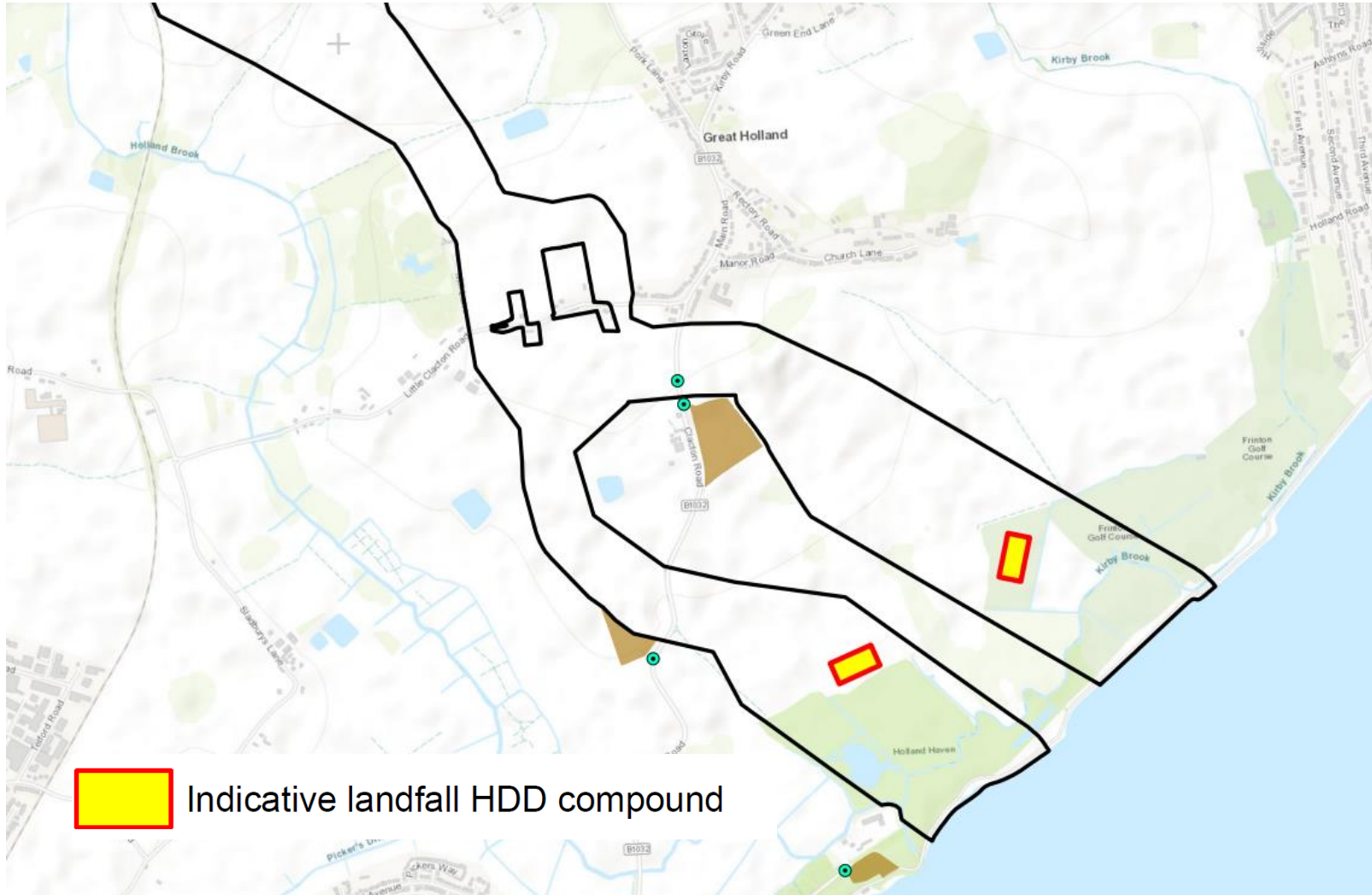
Further refinement ongoing and will consider feedback received during the consultation alongside engineering work.

Onshore Substation Search Areas



-  Indicative substation construction compounds
-  Indicative substation operational boundary
-  Five Estuaries substation search areas
-  National Grid substation search area

Landfall



Two options remain for landfall - Horizontal Direction Drill (HDD) or similar trenchless technique.

Indicative HDD compound shown to provide indication of size and location set back from the sea wall.

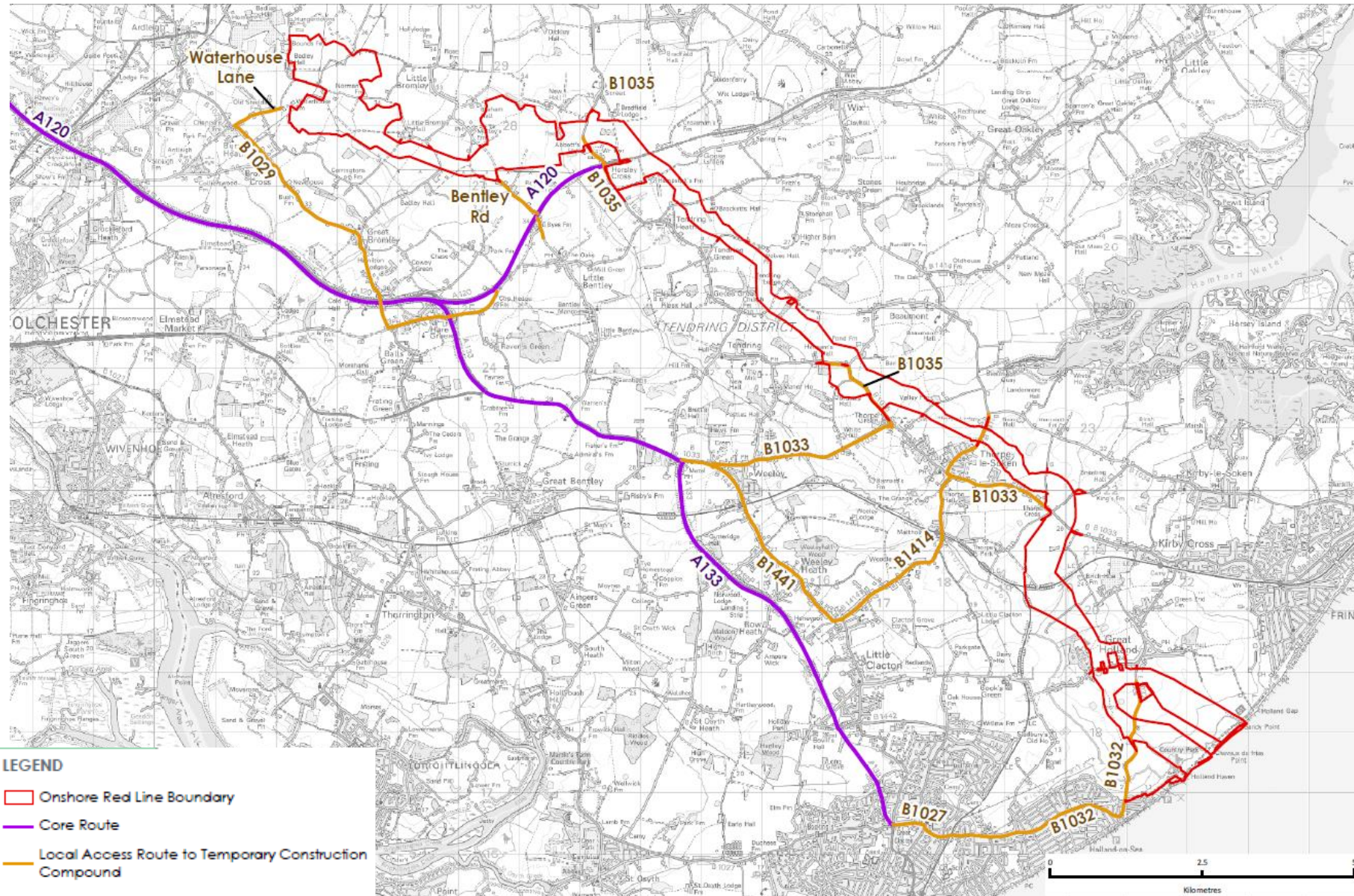
Cable ducts are expected to be 13-20m under the sea wall to offshore location to be determined either intertidal or subtidal.

Key Areas of Assessment

- The PEIR presents assessments for various environmental topics covering, construction operation and decommissioning. It considers cumulative impacts as far as practical.
- These topics include:
 - Ecology, landscape and visual impact
 - Socio-economic and tourism
 - Noise and Air Quality
 - Land use & Geology
 - Hydrology
 - Traffic and transport



Traffic and transport



Reinstatement Examples



Before construction



During construction



After reinstatement

Minimising Onshore Impacts to the Environment and Communities

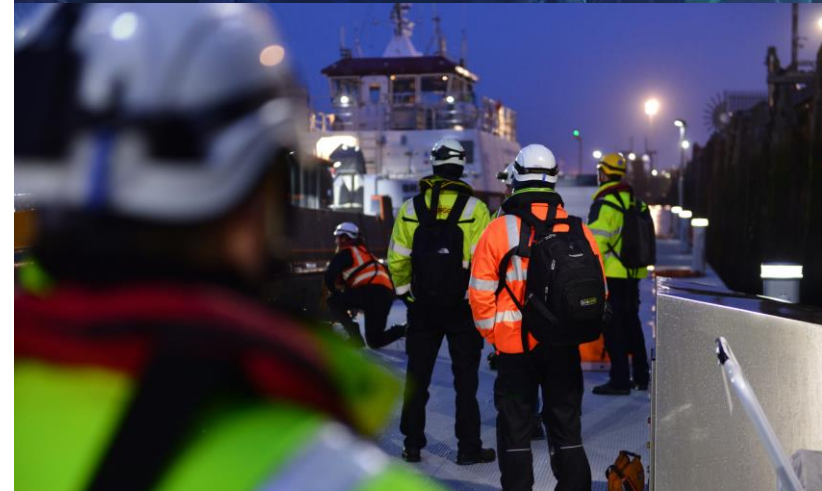


- A number of mitigation measures have been identified through PEIR, many of these are set out in draft plans, which will be secured through the DCO, including:
 - Outline Construction Traffic Management Plan
 - Outline Public Access Management Plan
 - Landscape and Ecology Design Principles
 - Draft Code of Construction Practice
- Other plans will be developed to support the DCO application e.g. Employment, Skills and Education.
- Commitment to exploring opportunities for ecological enhancements / Biodiversity Net Gain.
- Working with landowners to ensure disruption to land is minimised.

LOCAL BENEFITS

Working with the Local Community

- We welcome ideas and local knowledge to inform the development of our plans.
- Our engagement strategy will include:
 - ongoing collaboration with local communities
 - engagement with local groups and organisations
 - facilitating opportunities for employment and skills throughout the region
 - education and skills activities to promote offshore wind and the career opportunities available
 - creation of community benefit package
 - commitments to further support the supply chain and local businesses through the RWE Supplier Transparency & Engagement Programme (STEP)
- We will develop an Employment, Skills and Education Strategy as part of our application.



Ensuring Benefits for the Area



Five Estuaries would be an extension of Galloper Offshore Windfarm, which provides a good example of how we intend to work with and support the local community and region.

- Over **20 local suppliers** have provided goods and services.
- **700 jobs** created throughout construction.
- **60 long term, skilled local roles** support operation.
- Team members have **transitioned** from the British Military, Steel Works and Property Facilities Management backgrounds.
- **5 apprentices** all living within 1 hour from the operations and maintenance base.
- Tailored programme of **education and skills activity** along the east coast - shadowing days, mock interviews, STEM events, Internship scheme.
- **4 STEM ambassadors** work closely with local schools.
- Over **£120,000** provided in community funds and sponsorships to date.



FIVE 
ESTUARIES
OFFSHORE WIND FARM

GET IN TOUCH

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(No stamp or further address details are required)

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