

Morgan and Morecambe Offshore Wind Farms: Transmission Assets

Statutory consultation brochure
October 2023

Morgan and Morecambe Offshore
Wind Farms: Transmission Assets



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Foreword

Al Rayner, Projects Director, Flotation Energy

“With the potential to power more than half a million homes, Morecambe Offshore Windfarm will play a key role in the UK’s journey to more sustainable, cheaper energy consumption.

We are excited to be embarking on our statutory consultation for the Morgan and Morecambe Offshore Wind Farms, Transmission Assets project. We’re seeking feedback on our proposals for the offshore and onshore infrastructure to connect both windfarms to the national grid.

This is our third consultation on the project and underlines our continuing commitment to engage with communities as we develop our plans.

The feedback we receive will help us as we seek to further refine our proposals and understand how best to deliver the infrastructure required in a way that respects the needs of surrounding communities.”

Morecambe Offshore Windfarm is a joint venture between Cobra and Flotation Energy.



Al Rayner

Richard Haydock, Programme Director, UK Offshore Wind, bp

“The Morgan Offshore Wind Project will play a key role in delivering secure, low carbon energy to the UK and support the UK’s ambition to be net zero by 2050.

This consultation is a crucial step in the planning and development of our offshore wind projects, and we are committed to making sure we deliver the project in a way that considers the people who live and work in the area.

Your feedback will help shape our proposals and provide us with vital local knowledge to help develop our plans.

We are grateful to all those who have already provided feedback at our previous consultations, and we look forward to continued discussions with you and getting closer to delivering offshore wind power in the UK.”



Richard Haydock

About the developers

The Morgan Offshore Wind Project and the Morecambe Offshore Windfarm are working together on the proposals for the Morgan and Morecambe Offshore Wind Farms: Transmission Assets project, to connect both offshore wind farms to the electricity transmission network.

Morgan Offshore Wind Limited, a joint venture between bp and EnBW Energie Baden-Württemberg AG, is developing the Morgan Offshore Wind Project.

About bp

bp is an integrated energy company aiming to be a global leader in offshore wind. Its global pipeline includes two sites offshore Germany with a potential generating capacity of 4GW.

bp has formed a partnership with Equinor to develop projects in the US, including Empire Wind and Beacon Wind off the East Coast that have a planned potential 4.4GW generating capacity.

It has also formed a strategic partnership with Japanese conglomerate Marubeni to explore offshore wind opportunities in the country and acquired a 55% stake in a portfolio from Deep Wind Offshore in South Korea, which includes four projects with a potential generating capacity of up to 6GW.

About EnBW

EnBW Energie Baden-Württemberg AG is one of the largest energy supply companies in Germany and Europe, with a workforce of 27,000 employees supplying energy to around 5.5 million customers. Installed renewable energy capacity will account for 50 percent of EnBW's generating portfolio by the end of 2025.

EnBW was among the pioneers in offshore wind power with its Baltic 1 wind farm in the Baltic Sea. EnBW has developed, constructed and operates four offshore wind farms in Germany with a total installed capacity of 945MW.

Another 960MW from the offshore wind farm He Dreiht are currently under development; the final investment decision in March 2023 cleared the way for the start of construction.

Morecambe Offshore Windfarm Limited, a joint venture between Cobra and Flotation Energy Limited, is developing the Morecambe Offshore Windfarm.

About Cobra

Cobra is a world leader in the development, construction and management of industrial infrastructure and energy projects, with 80 years of experience.

Cobra is a worldwide reference with the capacity and determination to develop, create and operate industrial and energy infrastructures that require a high level of service, based on excellence in integration, technological innovation and financial strength.

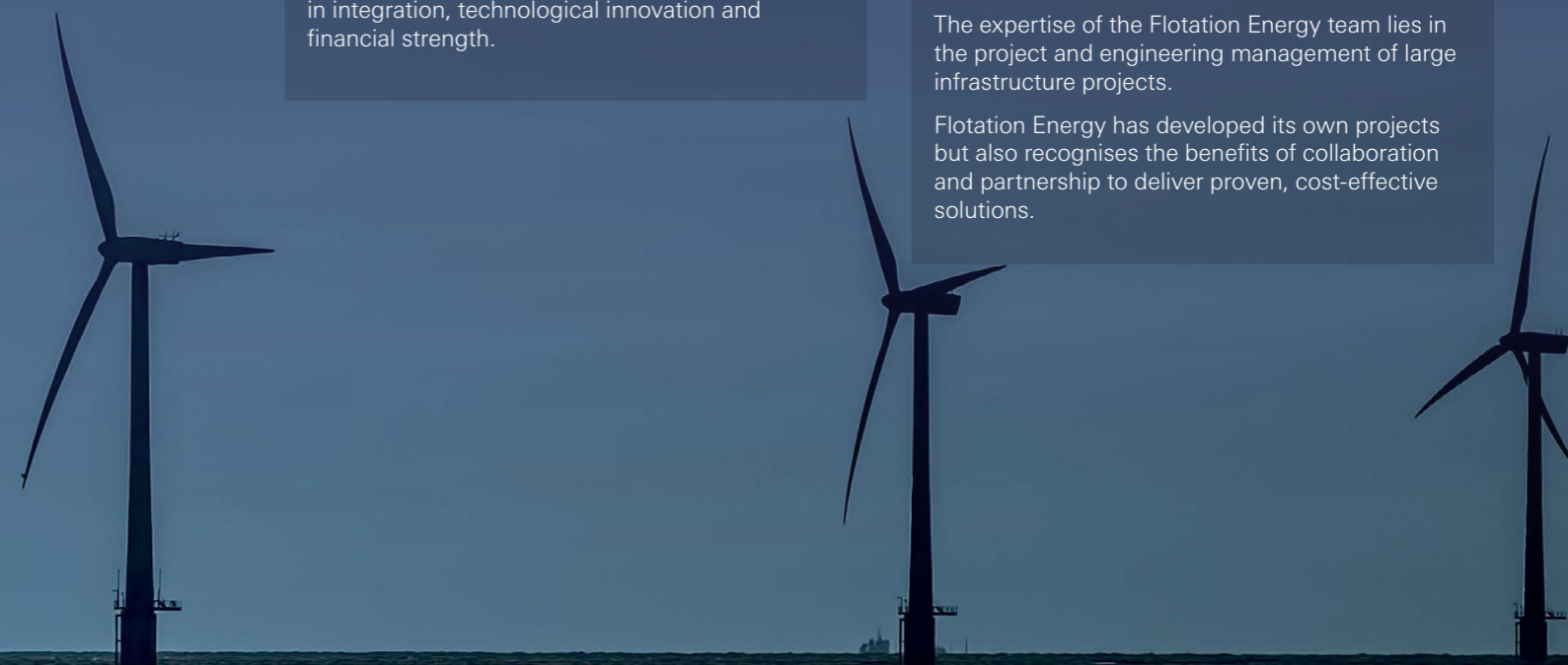
About Flotation Energy

Flotation Energy is based in Edinburgh, Scotland, and has been a significant contributor to building a strong offshore wind industry in the UK and beyond.

Flotation Energy has a growing project pipeline, managing 13GW of offshore wind projects in the UK, Ireland, Taiwan, Japan and Australia; and plans to expand into many more key markets.

The expertise of the Flotation Energy team lies in the project and engineering management of large infrastructure projects.

Flotation Energy has developed its own projects but also recognises the benefits of collaboration and partnership to deliver proven, cost-effective solutions.



Introduction to the Transmission Assets project

The Morgan Offshore Wind Project and the Morecambe Offshore Windfarm are two proposed offshore wind farms being developed in the Irish Sea.

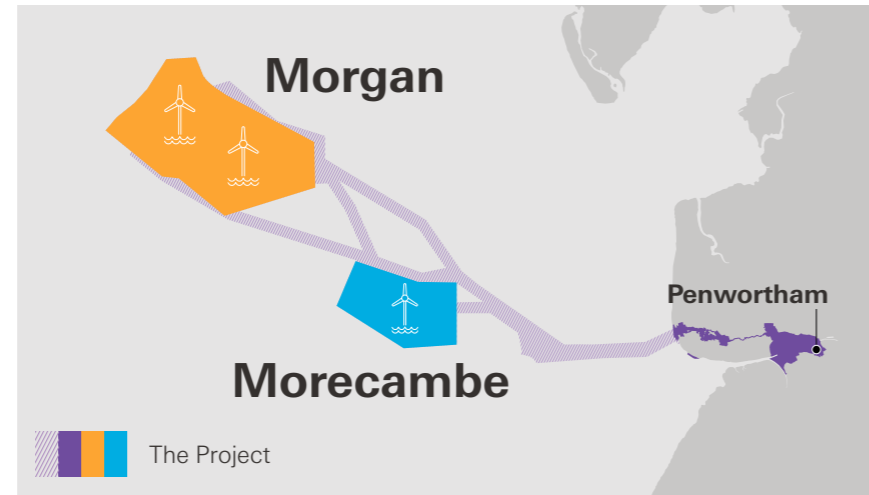
The offshore wind farms are collaborating to connect to the national grid via the Morgan and Morecambe Offshore Wind Farms: Transmission Assets project (referred to as "the Project").

The Project will comprise both permanent and temporary infrastructure including, but not limited to:

- Offshore infrastructure including offshore export cables, offshore substation platform(s), interconnector cables and a Morgan offshore booster station.
- Landfall works (where the offshore cables reach the shore) between Mean Low Water Springs and the transition joint bays including the offshore and onshore cables, intertidal working area and landfall construction compound(s), and temporary and permanent access.
- Onshore infrastructure from the transition joint bays to the electricity transmission network connection. This includes onshore export cables to the two new substations, temporary construction compounds, temporary and permanent access, and onward connections to the existing National Grid substation at Penwortham, Lancashire.

- Areas for biodiversity net gain, enhancement and / or mitigation, including permanent access for operation and maintenance of those areas.

The two offshore wind farms are expected to make a key contribution to the UK's target of generating 50GW of power from offshore wind by 2030. Combined they have the potential to generate almost 2GW of electricity – enough to power the equivalent of around two million homes.



Generation and Transmission Assets explained

'Generation Assets' refers to the parts of the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm that generate the electricity. This includes the proposed offshore wind turbines and associated infrastructure, such as the cabling that connects the turbines to the offshore export cables.

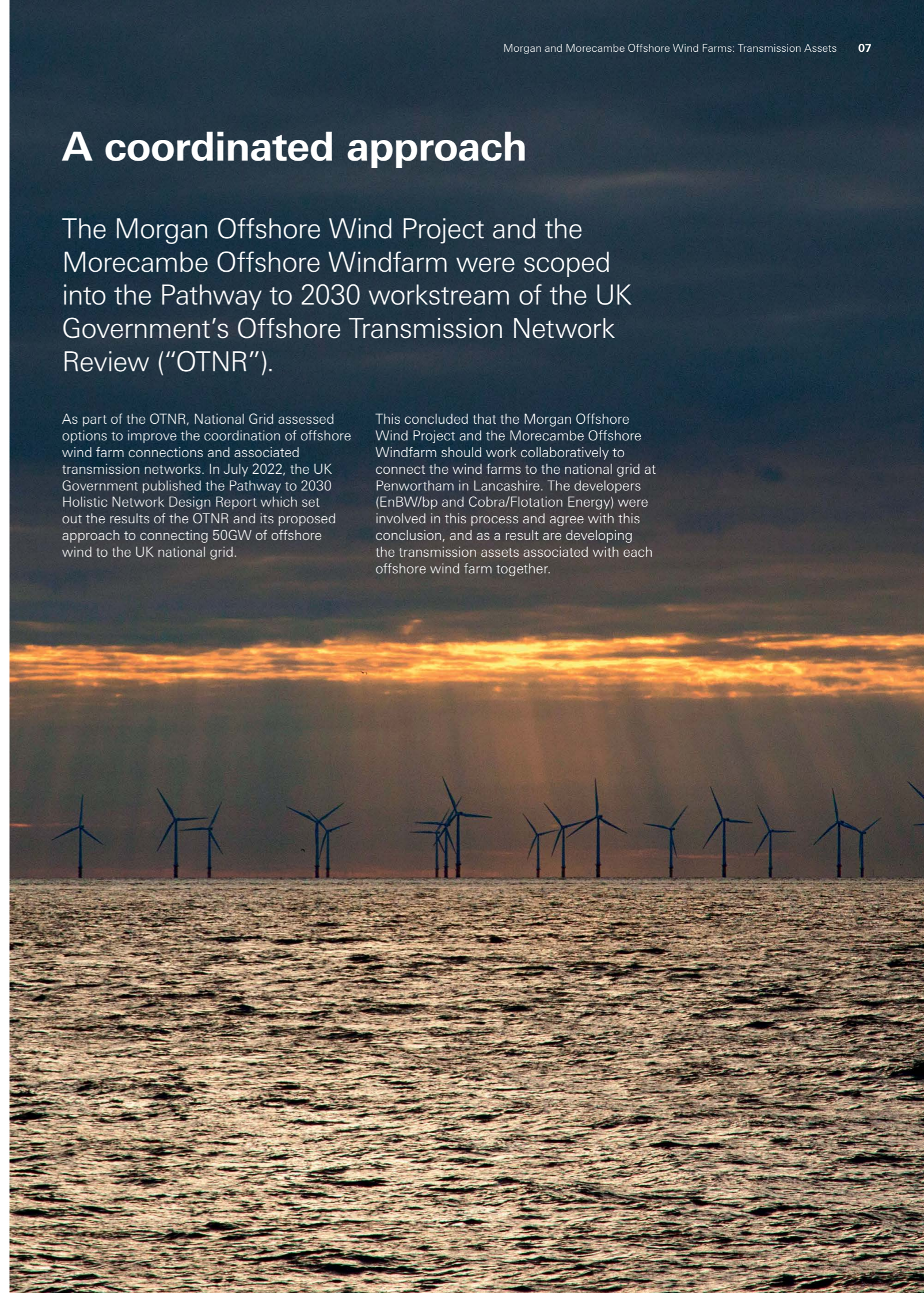
'Transmission Assets' refers to the elements that are responsible for connecting the 'Generation Assets' to the national grid, such as the offshore and onshore export cables, Offshore Substation Platforms ("OSPs"), onshore substations, and associated infrastructure.

A coordinated approach

The Morgan Offshore Wind Project and the Morecambe Offshore Windfarm were scoped into the Pathway to 2030 workstream of the UK Government's Offshore Transmission Network Review ("OTNR").

As part of the OTNR, National Grid assessed options to improve the coordination of offshore wind farm connections and associated transmission networks. In July 2022, the UK Government published the Pathway to 2030 Holistic Network Design Report which set out the results of the OTNR and its proposed approach to connecting 50GW of offshore wind to the UK national grid.

This concluded that the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm should work collaboratively to connect the wind farms to the national grid at Penwortham in Lancashire. The developers (EnBW/bp and Cobra/Flotation Energy) were involved in this process and agree with this conclusion, and as a result are developing the transmission assets associated with each offshore wind farm together.



Why we need offshore wind

When operational, the Morgan and Morecambe offshore wind farms are expected to play a role in the energy transition by delivering a significant volume of offshore wind. This can support the UK Government's Net Zero by 2050 target to deliver up to 50GW of offshore wind by 2030.

The UK is a world leader in offshore wind and the surrounding seas are ideal for harnessing wind power. We are aiming for our projects to be operational by 2028/29 at the earliest, helping to decarbonise the UK.

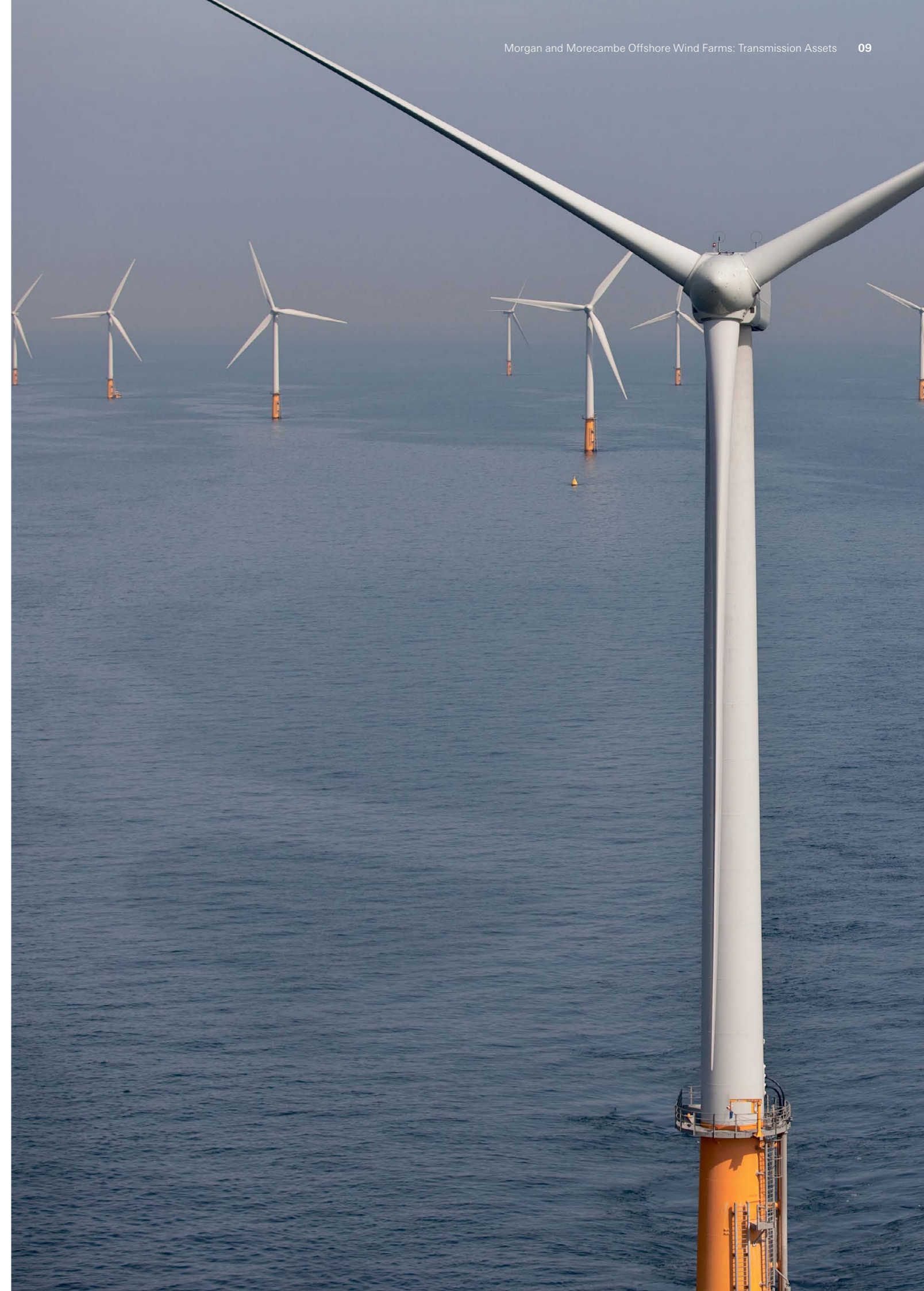
The projects will also play a key role in the energy transition by:

- Generating low carbon electricity from offshore wind farms in support of the decarbonisation of the UK electricity supply
- Optimising generation capacity within the constraints of available sites and grid infrastructure
- Contributing to achieving the aims of the UK's Energy Security Strategy.

The projects also aim to:

- Co-exist and collaborate with the other offshore activities, developers and operators to enable the balance of different users
- Contribute to the local, regional and national economy by providing substantial investment, as well as employment and new infrastructure during all phases of the projects
- Align with the key drivers in current and planned updates to national policy.

The UK currently generates around 13GW of its power from offshore wind, meaning it plays an increasingly important role in our energy mix. But we need to go a lot further. For the UK to achieve its climate goals, we need to quadruple our offshore wind generation, to reach the UK's target of deploying 50GW of offshore wind by 2030.



Our consultation

Our statutory consultation will be open from Thursday 12 October to Thursday 23 November 2023. We are committed to an open and transparent consultation and would like to hear your views about the Project.

This brochure provides an overview of the work we have carried out following the feedback we received during our previous non-statutory consultations in 2022 and earlier in 2023, alongside the gathering of baseline information and the development of our Preliminary Environmental Information Report ("PEIR"), and consultation with statutory stakeholders.

We are asking for feedback on our PEIR for the Project, which includes detailed information about the Project, and the assessments undertaken to date. We are encouraging feedback on our proposals and the work we've undertaken so far, including our proposals for biodiversity mitigation and enhancement areas.

See pages 32-33 for more information about how to provide your feedback. Please note that your feedback does not need to be limited to the areas covered in this brochure. We would like to hear any feedback you may have related to the Project.

You can find more information and consultation materials on our website: www.morecambeandmorgan.com/transmission. This includes our PEIR, which is an important document for this consultation.

We also encourage you to come along to one of our in-person or online public consultation events. See pages 12-13 or visit www.morecambeandmorgan.com/transmission for more information about our events.

Help us refine our proposals

Through this consultation, we are seeking feedback on the work we have undertaken on the Project to date, as set out in detail in our PEIR and more succinctly summarised in our PEIR Non-Technical Summary ("NTS"). These are both available to read in full at www.morecambeandmorgan.com/transmission.

The PEIR covers a range of environmental topics for which potential environmental impacts have been assessed. We would like your feedback on our work to date, with particular focus on the areas summarised in this brochure. Next to the topic summaries, we have included the corresponding chapter in our PEIR where you can find more detail.

What does statutory consultation mean?

In October 2022, the Secretary of State for Business, Energy and Industrial Strategy issued a direction under section 35 of the Planning Act 2008 that the Project should be treated as a development for which development consent is required.

This means that consent to construct, operate, maintain, and decommission the Project will be sought via the UK government's planning process under the Development Consent Order ("DCO") process.

A statutory consultation is a required part of this process, in accordance with the Planning Act 2008. For more on the DCO process, see pages 28-29.

Alternative formats

Should you require any of our materials in an alternative format, please get in touch with the Project team by email (info@morecambeandmorgan.com) or phone (0800 915 2493, option 3).

Costs starting from £0.28p per page may be associated with larger requests to cover printing and postage.

Take part and provide feedback



Feedback map – available on the Project website feedback.morecambeandmorgan.com. This interactive map of the proposals allows people to drop a pin and leave comments online and / or attach files (such as document or images) to their feedback.



Feedback form – available on the Project website www.morecambeandmorgan.com/transmission, at consultation events, deposit locations or by request from the team.



By email – to info@morecambeandmorgan.com



In writing – **FREEPOST MORECAMBE AND MORGAN** (please be advised it is not possible to send registered post to a freepost address).

The consultation materials

For the purposes of this statutory consultation, the following consultation materials have been published:

- Consultation Brochure, which outlines the Project's proposals, consultation activities and summarises the Preliminary Environmental Information Report
- Consultation Feedback Form, which provides a structured method for consultees to provide their feedback.

As well as this brochure there are other consultation documents available to help you understand our Project in more detail. These are referenced throughout this brochure and are available to view via the Project website: www.morecambeandmorgan.com/transmission. Alternatively, please scan the QR code below. You can also visit one of our deposit locations (see page 13) or pick up these materials at one of our in-person events (see page 12-13):



Project website consultation hub

Our website provides more information and context relating to the Project. This includes:

Preliminary Environmental Information Report ("PEIR")

Consists of a suite of documents that describe the Project and the environmental assessment work undertaken to date. These documents form the basis of this consultation, and we are seeking feedback on their content. The PEIR sets out potential environmental, social and economic impacts, including the benefits of the Project, as well as any initial measures proposed to mitigate potential impacts.

PEIR Non-Technical Summary ("NTS")

This is a shorter and more accessible summary of the PEIR's key points. Printed copies of the consultation brochure and PEIR Non-Technical Summary are available at deposit locations across the Project area, accompanied by printed feedback forms. A full list of the locations is available on our Project website, or on page 13 of this brochure.

Draft Development Consent Order

A draft of the Development Consent Order ("dDCO") is also included in the consultation hub. The dDCO will be updated following consultation and a further draft will be submitted to the Planning Inspectorate as part of the final application.

Consultation events

You can find out more about the Project at one of our consultation events. These events are a great way to learn more about our Project, meet the Project team and ask any questions you may have.

In-person consultation events are drop-in events, meaning you can stop by at any point to learn more and speak to the team. Pop-up events are being held in areas of high footfall. These events are smaller in scale but still a great opportunity to speak to a member of the team and learn more.

Our online event will be held on Zoom and will include a presentation from the Project team, followed by a question-and-answer session.

Please scan the QR code or visit www.morecambeandmorgan.com/transmission to register for our online event and find out more information about all of our planned consultation events. Please also check the website before attending an event in case it has been unexpectedly cancelled.

Consultation events			
These are in person drop-in events, meaning you can come along at any time between the hours below. There will be printed materials on display and members of the Project team for you to talk to and find out more.			
Please check www.morecambeandmorgan.com/transmission before attending a consultation event in case of any unforeseen changes.			
Location	Date	Time	
Newton, Salwick & Clifton Village Hall, Vicarage Lane, Newton-with-Scales, PR4 3RU	Thu 26 Oct	3pm to 7pm	
St Annes Cricket Club, Vernon Road, Lytham St Annes, FY8 2RQ	Fri 3 Nov	3pm to 7pm	
Fylde Rugby Club, Woodlands Memorial Ground, Blackpool Road, Ansdell, Lytham St Annes, FY8 4EL	Fri 10 Nov	3pm to 7pm	
William Segar Hodgson Pavilion, Coronation Road, Kirkham, Preston, PR4 2HE	Sat 11 Nov	10am to 1pm	
Douglas Borough Council, Town Hall, Ridgeway Street, Douglas, Isle of Man, IM99 1AD	Thu 16 Nov	3pm to 7pm	

Online event			
If you can't make it along to an in-person event or would prefer to engage with the Project online, you can attend our webinar. Our live event will be held on Zoom. You can register to attend by scanning the QR code left, or visiting www.morecambeandmorgan.com/transmission .			
This event will include a presentation by the Project team and a question-and-answer session.			
Once you have registered to attend, you will receive an email confirmation with information about how to join this online event.	Mon 6 Nov	6pm to 7pm	



www.morecambeandmorgan.com/transmission

Pop-up events			
These are smaller-scale events in public areas with high footfall, but still a great way to meet the Project team and ask any questions you may have.			
Location	Date	Time	
St Annes Farmers Market, St Annes Road West, Lytham St Annes, FY8 1SB	Thu 2 Nov	9am to 1pm	
Penwortham Farmers Market, behind St Teresa's Church, Queensway, Penwortham, Preston, PR1 0DS	Sat 4 Nov	9am to 1pm	

Deposit locations	
There will be printed materials on display at a number of public locations in the local community.	
Freckleton Library, Preston Old Road, Freckleton, PR4 1PB	
Kirkham Library, Station Road, Kirkham, PR4 2HD	
St Annes Library, 254 Clifton Drive South, Lytham St Annes, FY8 1NR	
Lytham Library, Dicconson Terrace, Lytham St Annes, FY8 5JY	
Ansdell Library, 59 Commonsides, Ansdell, Lytham St Annes, FY8 4DJ	
Penwortham Town Council and Community Centre, Kingsfold Drive, Penwortham, Preston, PR1 9EQ	
Henry Bloom Noble Library, 8 Duke Street, Douglas, Isle of Man, IM1 2AY	

Our events will have representatives present from **the Morgan Offshore Wind Project Generation Assets and Morecambe Offshore Windfarm Generation Assets** projects.

Should you experience any issues while trying to register to attend our online consultation event, then please contact the Project team by emailing info@morecambeandmorgan.com or calling **0800 915 2493 (option 3)**.

Connecting the Morgan and Morecambe projects to the national grid

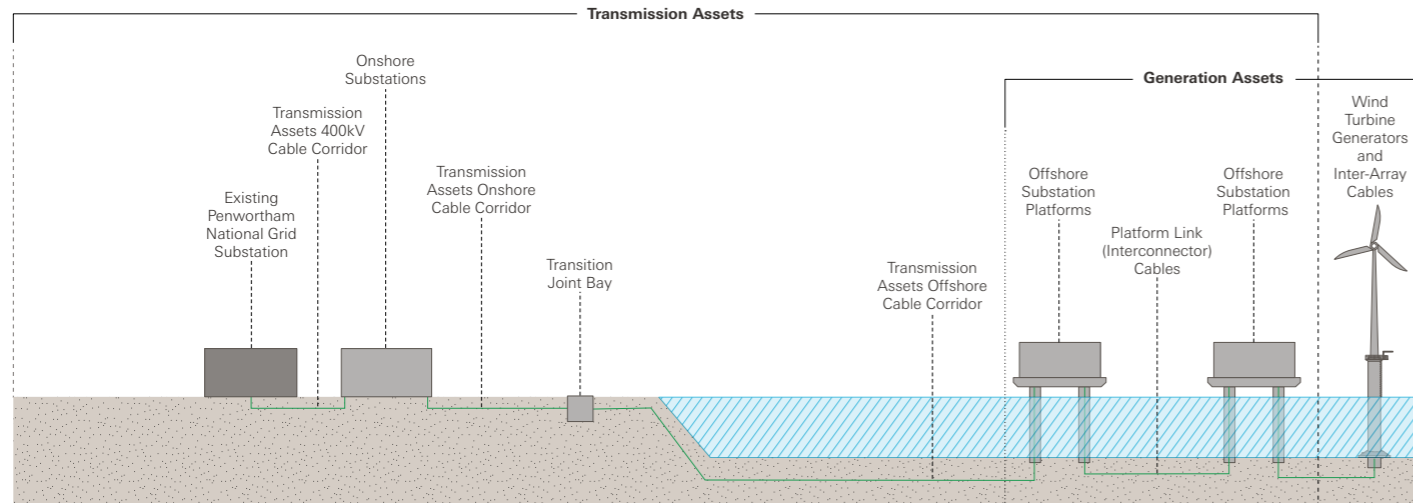
Electricity generated by the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm (Generation Assets) will be transported to the existing national electricity transmission network – which is usually called the national grid – using export cables.

When offshore, these export cables typically run under the seabed wherever possible and once onshore they are usually buried underground.

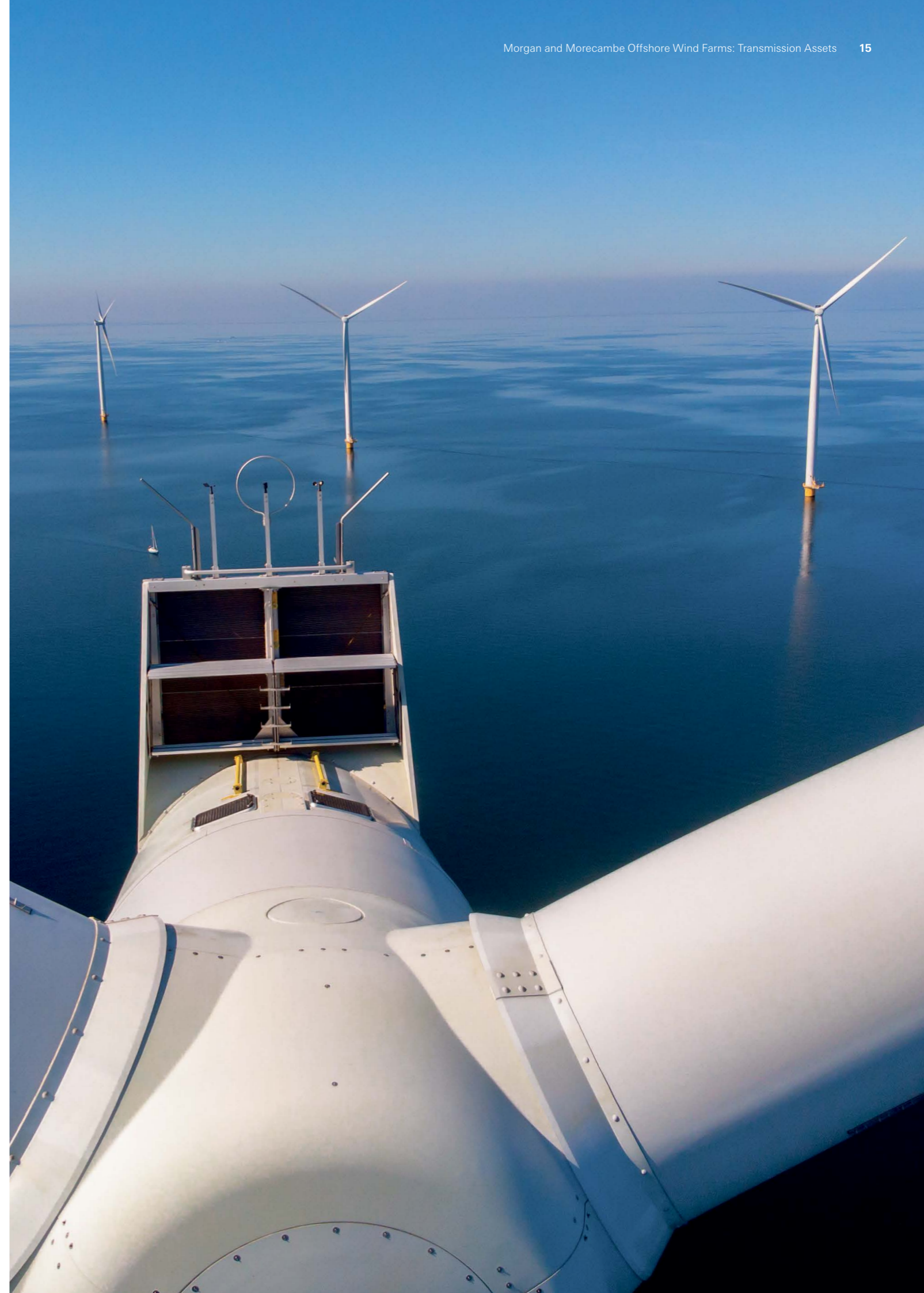
The point where the offshore cables come ashore is called the landfall. Within this area, the offshore export cables will be connected to the onshore export cables at transition joint bays, which will be located on land above mean high water.

Onshore export cables are also required to transport the electricity from the transition joint bays to the onshore substations, and then on to the national grid.

The power can then go directly into the national grid; the large 'pot' of energy is then distributed to our homes and businesses across the UK.

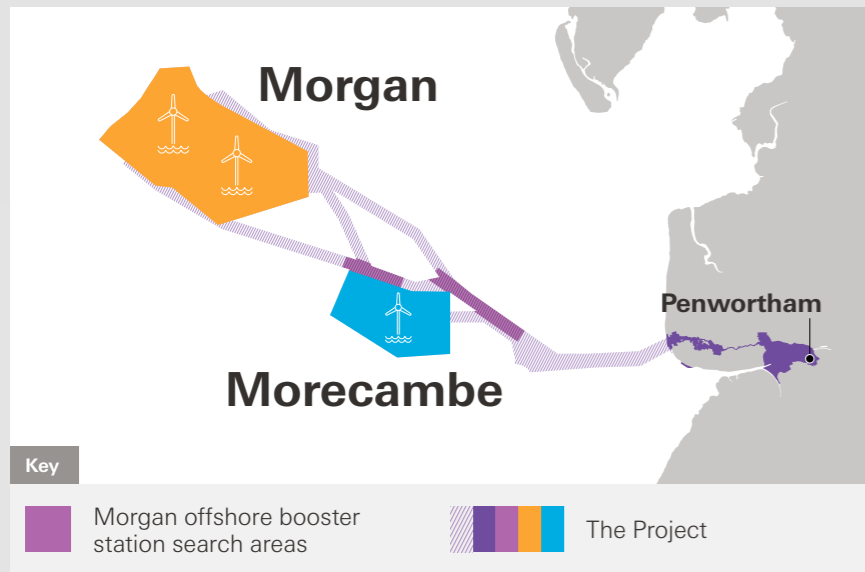
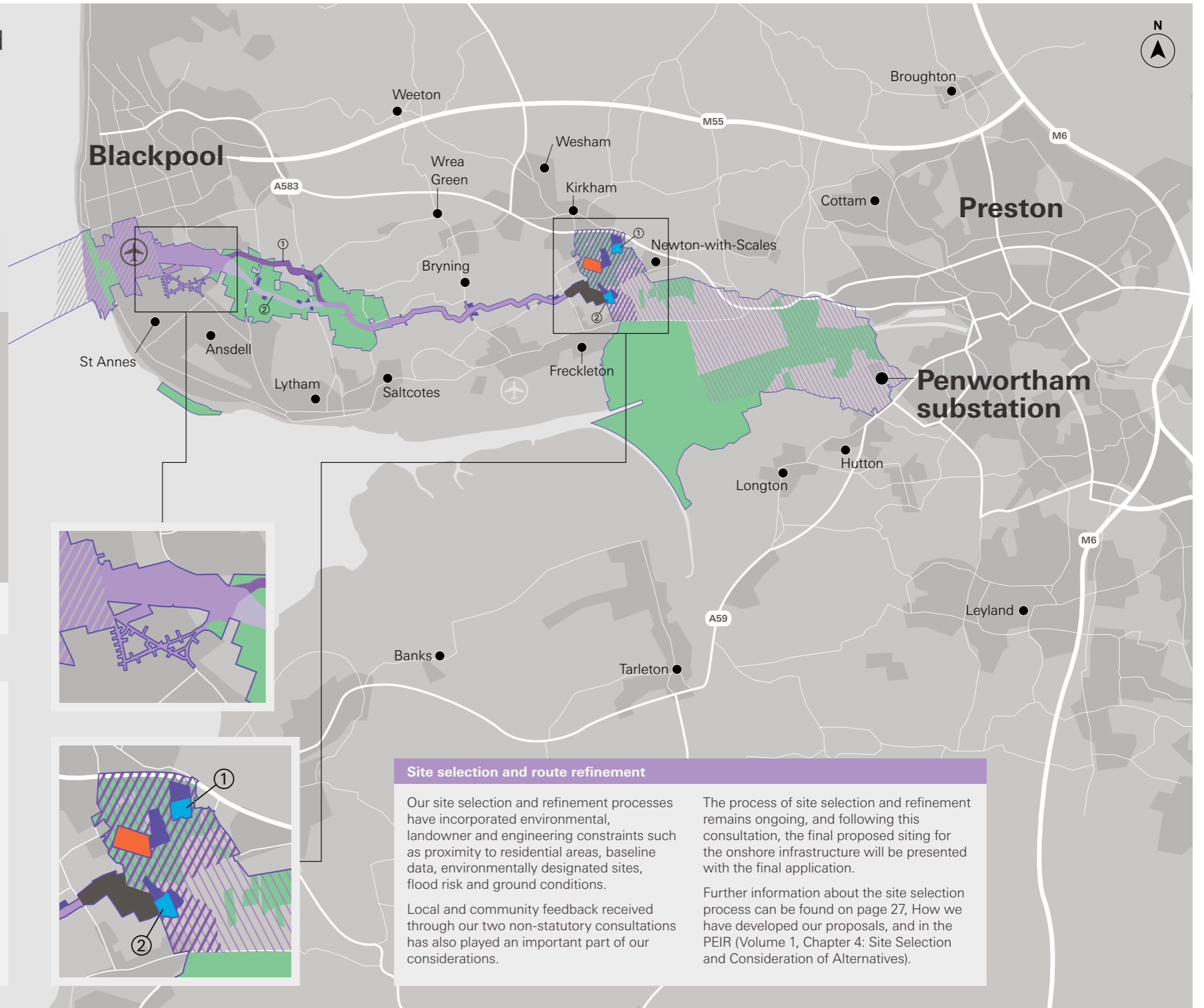


This indicative diagram illustrates which part of the projects are classified as Generation Assets (Morecambe Offshore Windfarm and Morgan Offshore Wind Project) and which parts are classified as Transmission Assets (Morgan and Morecambe Offshore Wind Farms: Transmission Assets).



About the Project

The Project includes a range of proposed offshore and onshore infrastructure that will be used to transport electricity from the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm (Generation Assets) to the National Grid substation at Penwortham.



- Key**
- Morgan offshore booster station search areas
 - The Project
 - Morgan preferred onshore substation site
 - Morecambe proposed onshore substation site option 1 (north)
 - Morecambe proposed onshore substation site option 2 (south)
 - Indicative onshore export cable corridor option 1 (north)
 - Indicative onshore export cable corridor option 2 (south)
 - 400 kV grid connection cable corridor search area
 - Landfall and intertidal area
 - Indicative onshore temporary construction compounds
 - Freckleton Hall Cross onshore export cable search area
 - Potential biodiversity net gain, enhancement and / or mitigation areas
 - Onshore substations statutory consultation area
 - Blackpool Airport

Site selection and route refinement

Our site selection and refinement processes have incorporated environmental, landowner and engineering constraints such as proximity to residential areas, baseline data, environmentally designated sites, flood risk and ground conditions.

The process of site selection and refinement remains ongoing, and following this consultation, the final proposed siting for the onshore infrastructure will be presented with the final application.

Local and community feedback received through our two non-statutory consultations has also played an important part of our considerations.

Further information about the site selection process can be found on page 27, How we have developed our proposals, and in the PEIR (Volume 1, Chapter 4: Site Selection and Consideration of Alternatives).

The Project will comprise both permanent and temporary infrastructure including, but not limited to:

- **Offshore infrastructure** including offshore export cables, offshore substation platform(s), interconnector cables and a Morgan offshore booster station.
- **Landfall works** (where the offshore cables reach the shore) between Mean Low Water Springs and the transition joint bays including the offshore and onshore cables, intertidal working area and landfall construction compound(s), and temporary and permanent access.
- **Onshore infrastructure** from the transition joint bays to the electricity transmission network connection. This includes onshore export cables to the two new substations, temporary construction compounds, temporary and permanent access, and onward connections to the existing National Grid substation at Penwortham, Lancashire.
- **Areas for biodiversity net gain, enhancement and / or mitigation** including permanent access for operation and maintenance of those areas.

Key elements of this infrastructure on which we are seeking your feedback, located within the Transmission Assets PEIR Red Line Boundary, include:

Offshore substation platforms and booster station

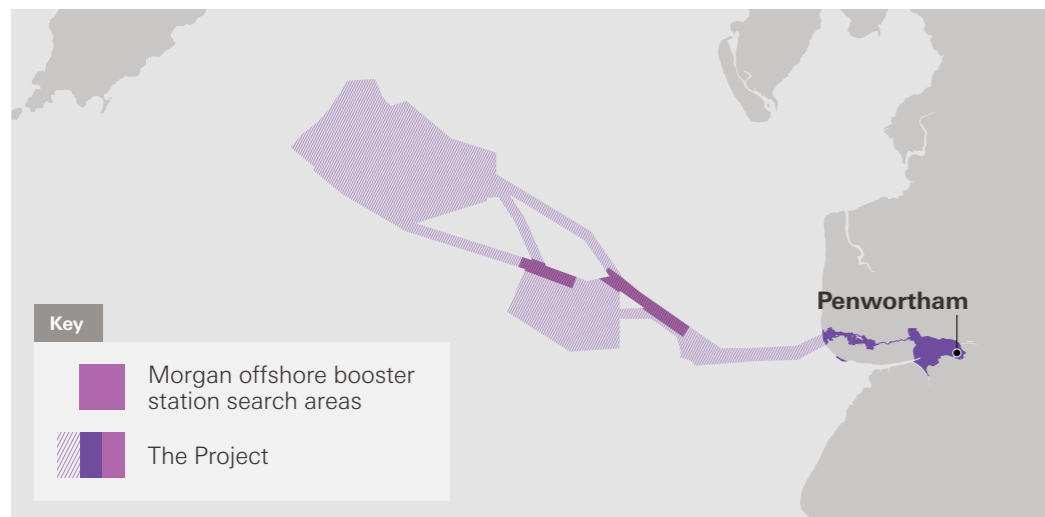
The Project may require up to six offshore substation platforms (“OSPs”). This includes up to four for the Morgan Offshore Wind Project and up to two for the Morecambe Offshore Windfarm.

The OSPs will transform electricity generated by the Wind Turbine Generators to a higher voltage, allowing the power to be efficiently transmitted to shore. They are likely to have one or more decks, a helicopter platform, cranes and communication antenna.

One offshore booster station may also be required for the Morgan Offshore Wind Project.

The exact location of the Morgan offshore booster station is subject to further onshore design refinement. This will take into account factors, such as seabed conditions but is anticipated to be located within the search areas shown on the map.

No booster stations are proposed as part of the Morecambe Offshore Windfarm.



FAST FACTS

OSPs and Morgan booster station

Maximum indicative height of top of OSP antenna structures above Lowest Astronomical Tide (“LAT”) – **95m** (Morgan) and **100m** (Morecambe)

Maximum indicative height of Morgan booster station main structure (above LAT) – **70m**

Maximum indicative height of OSP main structure (above LA, no antenna) – **70m** (Morgan) and **75m** (Morecambe)

Landfall area

The landfall area is where the offshore export cables come onshore, and the transitional area between the offshore cabling and the onshore cabling.

The transition joint bays would house the area where the offshore cables are connected to the onshore cables.

The landfall area for the Project is proposed to be located between Blackpool and Lytham St Annes.

What is HDD (or other trenchless methodologies)?

Horizontal Directional Drilling (“HDD”) (or other trenchless methodologies) are used to install export cables below obstacles (e.g. sensitive habitats, roads and railways), to avoid potential direct impacts, as opposed to using open cut trenching techniques.

FAST FACTS

Landfall

Number of Morgan transition joint bays – **4**

Number of Morecambe transition joint bays – **2**

Indicative maximum landfall compound area – **400m x 150m**

Indicative maximum duration of landfall construction – **36 months** (Morgan) and **36 months** (Morecambe)

Indicative onshore export cable corridor route

The onshore export cables will provide a cable connection between the landfall area and the proposed onshore substations.

From the landfall, the onshore export cable corridor routes head east away from the coast. Beyond Blackpool Airport and Queensway (B5261), the route corridor narrows and heads south east towards North Houses Lane.

In the Lytham Moss and Higher Ballam area, there are two route options at present:

- **Option 1 (north)**, which passes to the north of Higher Ballam and avoids a farmland conservation area; or
- **Option 2 (south)**, which passes to the south of Higher Ballam.

Option 2 (south) is the route we presented at our previous non-statutory consultation. Option 1 (north) is an alternate onshore export cable corridor route option proposed to mitigate potential environmental impacts. More information on this is available in the PEIR (Volume 1, Chapter 4: Site Selection and Consideration of Alternatives).

The two options come together east of Ballam Road and the onshore export cable corridor then turns south to cross Pegs Lane and passes to the north of Lytham Green Drive Golf Club.

The onshore export cable corridor then continues north east towards Hall Cross, north of Freckleton, and crosses the Freckleton / Hall Cross onshore export cable search area. Within the onshore substations statutory consultation area and the Freckleton / Hall Cross onshore export cable search area, the final location of the cable corridor will be determined by the location of the onshore substations, as a result of this statutory consultation.

FAST FACTS

Onshore export cable route

Total number of onshore export cables anticipated to be required – **up to 18** (up to 12 for Morgan and up to 6 for Morecambe)

Indicative permanent onshore export cable corridor width – **70m**

Indicative target trench depth – **1.8m**

Indicative target trench depth (to top of duct) – **1.2m**

Indicative length of onshore export cable corridor – **25 kilometres (km)**

Onshore substations statutory consultation area

To connect to the national grid, we will need to construct two new onshore substations, one for the Morgan Offshore Wind Project and one for the Morecambe Offshore Windfarm.

The onshore substations statutory consultation area is the area identified during the site selection process within which the preferred onshore substations (and associated temporary and permanent infrastructure) for the Project may be located. We are asking for your feedback on this area, alongside your feedback on the proposed onshore substation site for the Morgan Offshore Wind Project and the two onshore substation site options for the Morecambe Offshore Windfarm.

These are:

Morgan preferred onshore substation site

The Morgan preferred onshore substation site is located between Kirkham and Freckleton, to the south of the A583 Kirkham Bypass and east of Hall Cross. Lower Lane lies to the north west of the site. Dow Brook lies to the east of the site. A temporary construction compound will be required, which is proposed to be located to the east.

Morecambe onshore substation site option 1 (north)

Morecambe onshore substation site option 1 is located to the north east of the Morgan substation site, to the south of the A583 Kirkham Bypass and west of Parrox Lane and Newton with Scales. Dow Brook lies to the west of the site. A temporary construction compound will be required, which is proposed to be located to the north of the proposed substation site.

Morecambe onshore substation site option 2 (south)

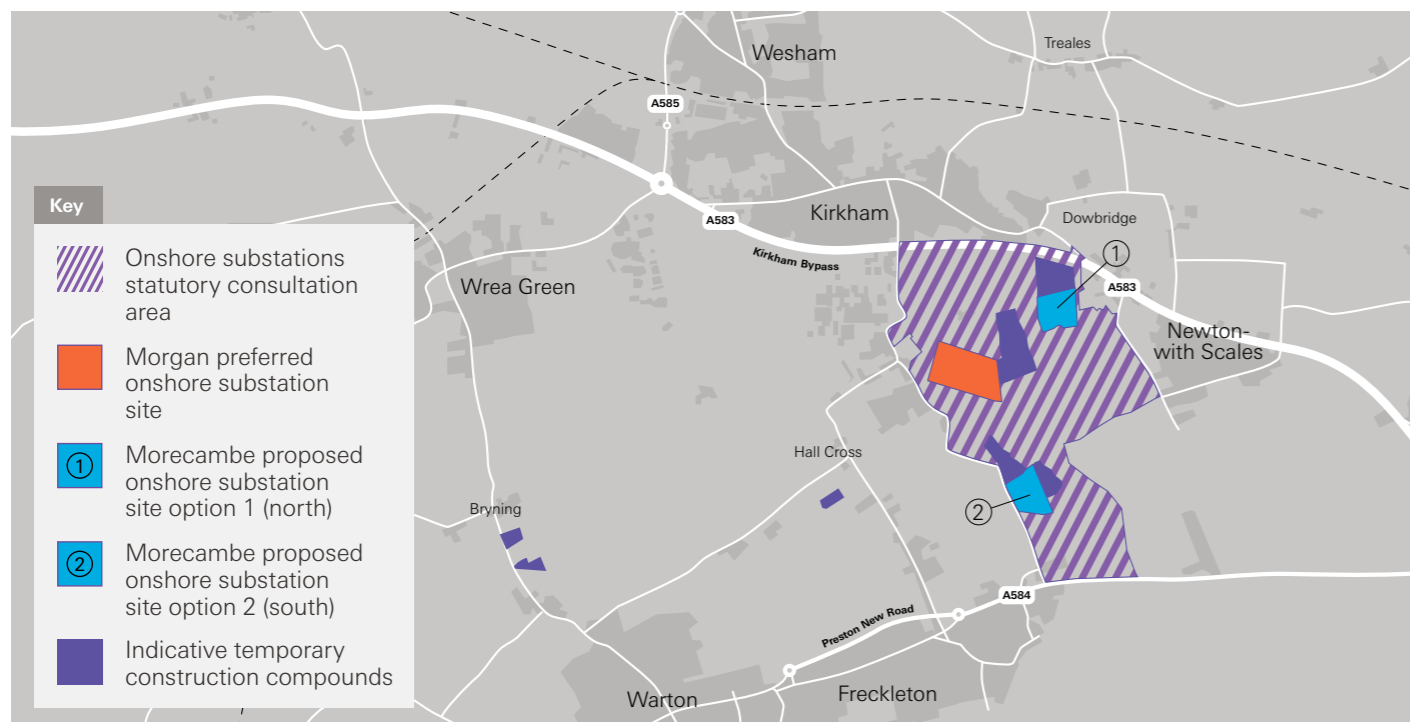
Morecambe onshore substation site option 2 is located to the south of the Morgan substation site, east of Lower Lane and to the north of Freckleton. Temporary construction compounds will be required, which are proposed to be located to the north and east of the substation site. A footpath also runs to the east of the site and temporary construction compound, with Dow Brook beyond.

Ahead of the submission of the DCO application, we will announce our preferred site for the Morecambe onshore substation. This will be based on ongoing assessments and feedback received from this consultation.

What is a temporary construction compound?

Temporary construction compounds will be required to support construction works in a particular location.

These may include central offices, welfare facilities, secure storage for equipment and component deliveries, as well as storage of materials and plant.



Why do we need substations?

The onshore substations will contain the electrical components for transforming the power supplied from the offshore wind farms to 400 kilovolt (kV) as required to meet the UK Grid Code for supply to the National Grid. The onshore substations will also house equipment and infrastructure for operating, maintaining and monitoring the onshore substations.

What equipment is located within the substation?

The onshore substation compounds would contain electrical equipment such as power transformers, cables, lightning protection masts, control buildings, communication masts, backup generators, access, fencing and other associated equipment, structures or buildings.

How will the substations be accessed?

A new temporary and / or permanent access route from the highway will be required for the onshore substations.

Suitable road access is essential for delivery of materials, and storage of equipment and plant during the construction phase of the Project.

A number of potential temporary and / or permanent access points from the highway are under consideration. More information is available in the PEIR (Volume 3, Annex 7.2: Potential accesses). The access point(s) will depend on the final location of the selected substation sites.

What will our substations look like?

The size and positioning of the proposed substations is still being developed. But at this early stage we've created indicative wirelines to show potential views for each of the substations which are based on information presented in the PEIR. Visit www.morecambeandmorgan.com/transmission to view these wirelines in more detail.

We are committed to sharing further information on the design of the substations as the Project progresses.

The permanent onshore substation sites will be clearly marked and secured with appropriate fencing. Screening for substations will be provided through landscaping and planting areas. The onshore substation sites are anticipated to benefit from existing hedgerows and woodland blocks within the local area. However, we are committed to additional planting to further screen the selected onshore substation locations and to providing additional biodiversity benefits. Planting to screen substations will be established as early as reasonably practicable in the construction phase. For more information see pages 24-25.

Why is Morgan consulting on a single site, while Morecambe is consulting on two options?

The different generating capacities of the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm means that a larger onshore substation is required for the Morgan Offshore Wind Project.

As such, and in addition, the constraints within the onshore substations consultation area, such as topography, watercourses and proximity to residential receptors, have resulted in the identification of one potential preferred site for the Morgan Offshore Wind Project, and two potential preferred sites for the Morecambe Offshore Windfarm.

FAST FACTS

Proposed Morgan onshore substation sites

- Number of proposed onshore substations – **1**
- Maximum indicative permanent footprint of Morgan onshore substation – **125,000m²**
- Maximum indicative height of main structure / building – **20m**
- Maximum indicative width of main structure / building – **80m**
- Maximum indicative length of main structure / building – **140m**
- Maximum indicative height of lightning protection mast – **30m**

FAST FACTS

Proposed Morecambe onshore substation sites

- Number of proposed onshore substations – **1**
- Maximum indicative permanent footprint of Morecambe onshore substation – **60,000m²**
- Maximum indicative height of main structures / buildings – **20m**
- Maximum indicative width of main structures / buildings – **80m**
- Maximum indicative length of main structures / buildings – **140m**
- Maximum indicative height of lightning protection mast – **30m**

400 kV grid connection cable corridor search area

The connection between the proposed onshore substations and the existing National Grid Penwortham substation will be achieved by the 400 kV grid connection cables.

The route of the grid connection cables will cross existing infrastructure such as roads, railways and rivers. Where possible, all major crossings, such as major roads, rail crossings and the River Ribble will be undertaken using HDD or other trenchless technologies.

The 400 kV grid connection cables will be located within the 400 kV grid connection cable corridor search area. Where practical, the grid connection cable corridors / areas will be shared. However this is dependent on the final location of the two onshore substations and the final point of connection to the grid at the existing Penwortham substation, as well as ongoing route refinement related to the crossing of the River Ribble.

The River Ribble

The route refinement process for our onshore export cable route considered a wide range of environmental constraints as well as technical and engineering factors.

The River Ribble is heavily protected by various national and international environmental designations and we are taking these into consideration as we refine our grid connection onshore export cable corridor route.

It is as a result of these protections, and because refinement of the substations siting is also ongoing (and the subject of this consultation), our grid connection area still remains relatively large.

At this stage, cable installation methodologies remain under consideration, including potential installation of cables beneath the riverbed of the Ribble, using HDD or other trenchless methodologies.

FAST FACTS

National grid connection area

Indicative maximum length of 400 kV cable route – **15km** (total for both projects)

Maximum number of 400 kV cables – **12** (6 for Morecambe and 6 for Morgan)

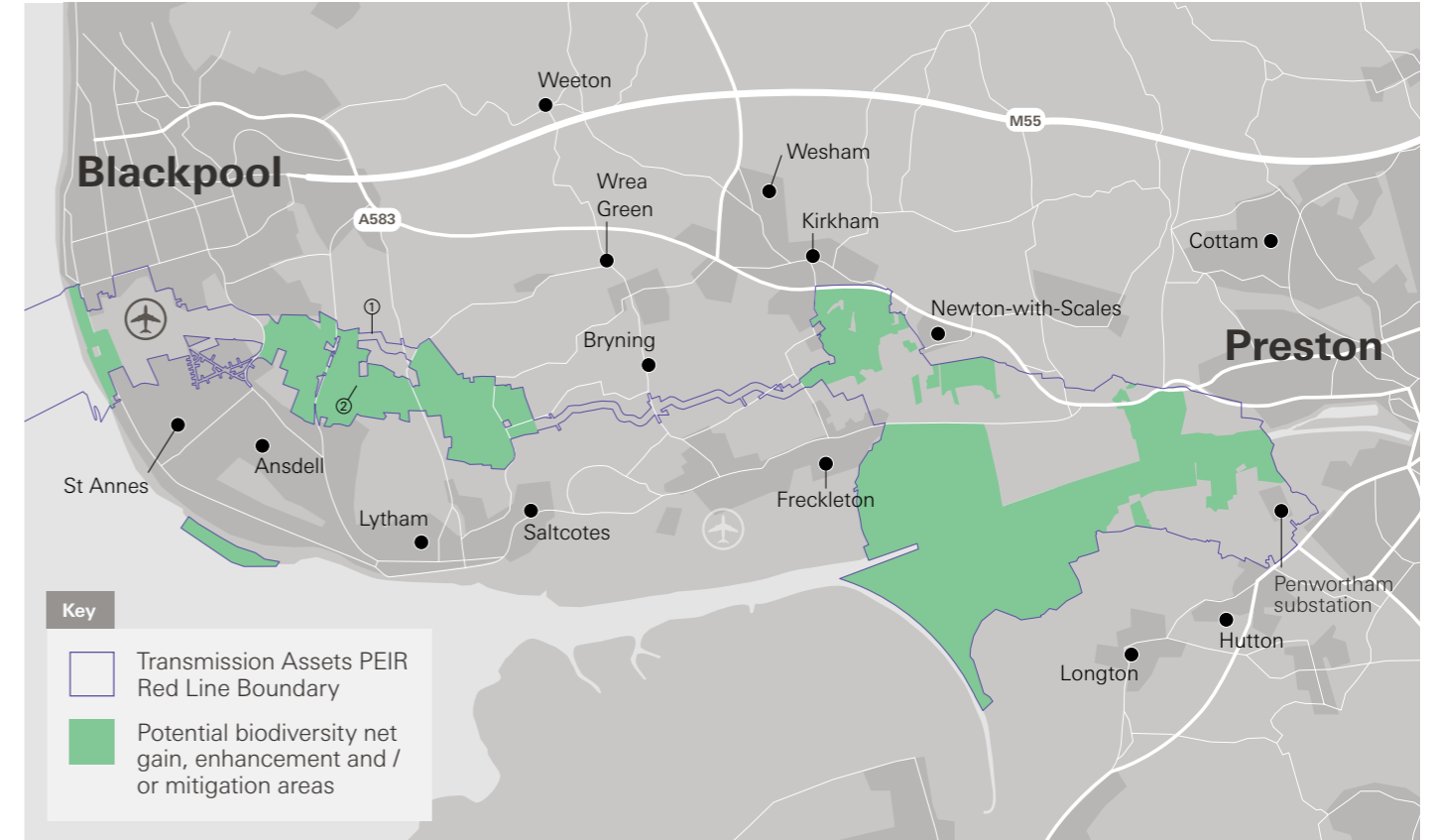
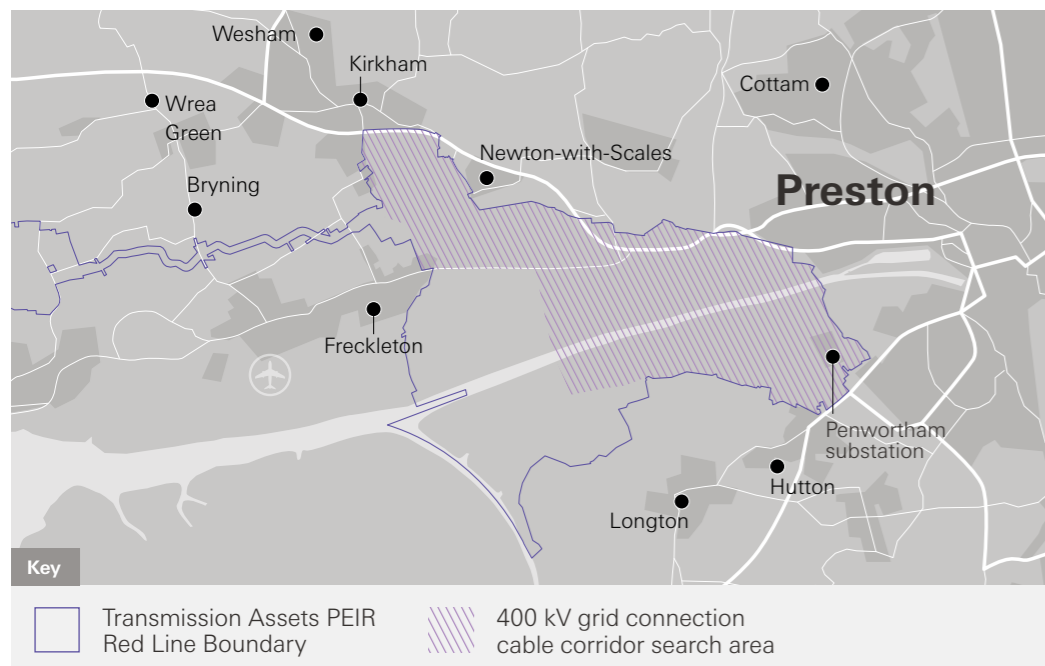
Maximum number of cable circuits – **4** (2 for Morecambe, 2 for Morgan)

Indicative permanent width of Morecambe 400 kV cable corridor – **23m**

Indicative permanent width of Morgan 400 kV cable corridor – **23m**

Indicative target trench depth (to the bottom of the trench) – **1.8m**

Indicative target trench depth to top of protective tile – **1.2m**



Potential biodiversity net gain, enhancement and / or mitigation areas

The Project aims to mitigate potential environmental effects on habitats by improving biodiversity, and where possible, delivering a net gain. We have identified potentially suitable areas for mitigation, enhancement and / or net gain, and these are illustrated on the map above.

We want to work with landowners and statutory bodies to deliver these potential opportunities which are being explored. We are keen to hear more from, and to collaborate with existing biodiversity schemes in the area to identify where the Project can potentially make a positive contribution towards ongoing conservation.

The identification of suitable mitigation and net gain opportunities will be refined as the design evolves and as surveys are completed. These surveys will continue to build a more detailed understanding of the current condition, linkages and opportunities presented within the Transmission Assets PEIR Red Line Boundary.

Constructing the Project

Code of Construction Practice ("CoCP")

The purpose of the CoCP is to provide effective planning, management and control during construction to control potential impacts upon people, and the environment. All construction will be undertaken in accordance with the CoCP. It will set out the key management measures that we will require our contractors to adopt and implement for all relevant construction activities for the onshore and intertidal elements of the Project.

The CoCP will include plans and control measures for managing the potential environmental effects of construction and limiting disturbance from construction activities as far as reasonably practicable.

For example, these may be related to surface water, pollution prevention, noise and vibration, air quality, and dust management.

A draft Outline CoCP is provided at Volume 1, Annex 3.1 of the PEIR.

An Outline CoCP will be prepared and submitted with the application for development consent. Detailed CoCP(s) will be developed in accordance with the Outline CoCP, and will require approval from the relevant Local Planning Authority before any relevant construction activities can take place.

Construction of the Project will involve a range of specialist engineering techniques. The main principles are outlined below.

Onshore export cables

The onshore export cable corridor for the Project will be approximately 25km in length and the cables will be buried underground. In designing the route we will consider where it is required to cross beneath existing assets, such as pipelines, highways or rivers.

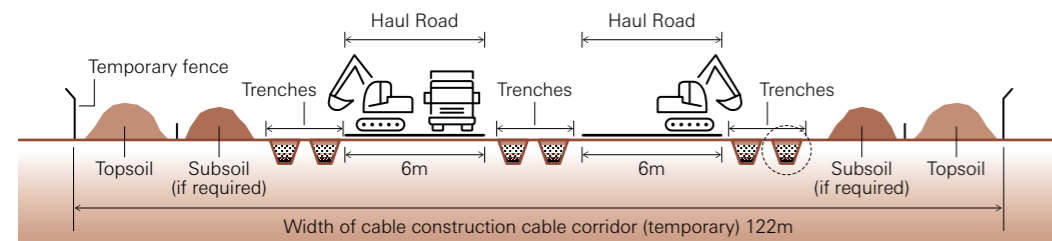
Once installed, the cables will typically occupy a permanent onshore export corridor up to 70m wide, within which up to 18 onshore export cables will be installed in total for both projects. The width of the permanent corridor may change and increase in specific locations, for example where obstacles are present such as the Network Rail Crossings (where the permanent footprint may be extended up to 180m to facilitate crossing beneath the railway line) and at the approach to the landfall.

The cable installation work will be enabled by having temporary haul roads along the cable route.

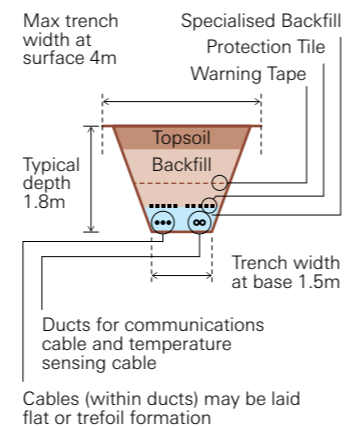
Once the cables are installed, the ground will be carefully reinstated using stored subsoil and topsoil.

All temporary construction compounds and temporary fencing will be removed, field drainage and / or irrigation will be reinstated and the land will be restored to its original condition.

Hedgerows will be replanted using locally sourced native species, where practicable and with landowner agreement. Where appropriate, some enhancement (such as planting of additional suitable species) may be undertaken.



Indicative temporary cable corridor cross section



Temporary construction compounds

Temporary construction compounds will be required to support the construction of the Project, including the onshore substations, the onshore export cable corridor, and the landfall area.

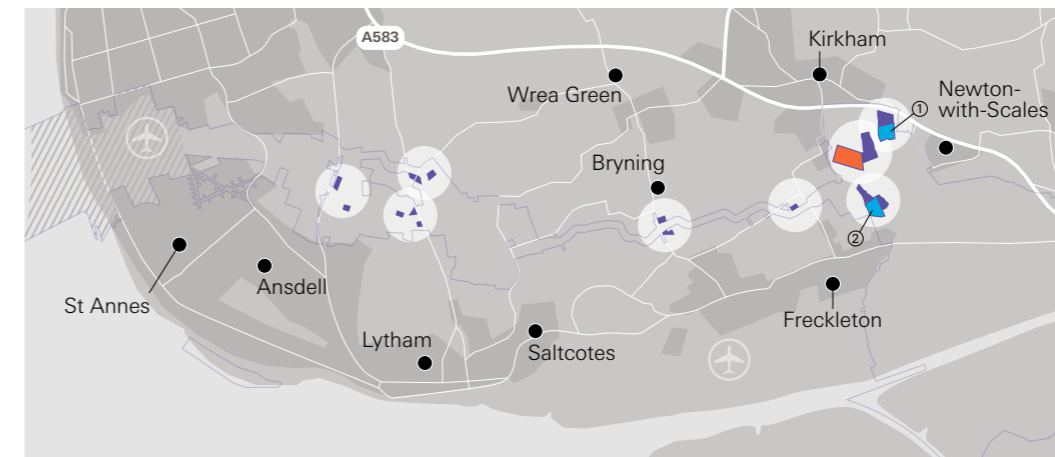
They will be prepared by removing and storing topsoil and subsoil before laying hardstanding areas using clean crushed stone.

Temporary construction compounds have been identified to support the construction of the onshore export cables. Temporary construction compounds will also be required for each of the onshore substation sites.

These compounds will be needed for the duration of construction works in a particular location. These may entail central offices, welfare facilities and stores, secure storage for equipment and component deliveries, as well as storage of materials and plant.

HDD compounds will also be required where trenchless methodologies are used.

During construction, temporary access tracks will also be required, which will need to be installed early in the construction / preconstruction phase. The land will then be reinstated.



Onshore substations

The onshore substation buildings are likely to be composed of steel frames and external sheet cladding materials. We will be developing management plans covering ecological mitigation and biodiversity net gain.

Landfall area

The offshore export cables will be installed by HDD or other trenchless methodologies, from the transition joint bays underneath the railway line, the A584 Clifton Drive North, and the sand dunes at Lytham St Annes Site of Special Scientific Interest ("SSSI"), which is a designated site for its biology.

How we have developed our proposals

Throughout the development of the Project, we've been carrying out assessments across a wide range of environmental topics to better understand the area we could work in and the potential impacts the Project may bring.

This includes work to better understand the proposed design of the Project and how it could be constructed (see page 24-25). Below is an overview of our assessment work to date.

Environmental considerations

The Morecambe Offshore Windfarm and the Morgan Offshore Wind Project are expected to provide positive long-term environmental benefits by providing homes with renewable energy. We realise, however, that any major infrastructure development can create effects and it's important that these potential effects are identified, managed, minimised or, if possible, avoided.

In October 2022 we published a Scoping Report which set out what we understood, at the time, to be the Project's likely effects on the environment and how we would assess them.

Our Scoping Report was followed by the Secretary of State's Scoping Opinion, which was provided in December 2022. Our Scoping Report is available to read on www.morecambeandmorgan.com/transmission.

The Secretary of State's Scoping Opinion is available to read on the Planning Inspectorate's website: <https://infrastructure.planninginspectorate.gov.uk>.

Since receipt of the Scoping Opinion, we have been carrying out a range of environmental assessments to better understand the potential impacts of the Project. We have also engaged with statutory bodies to understand in greater detail the area that we're proposing to work in.

Our environmental assessments are undertaken using a wide range of data sources, including Project specific surveys.

Using the wide range of data gathered, we have produced a PEIR. The PEIR provides a summary of the Project, the site selection process, engineering design development and the key findings of the EIA process to date.

The purpose of the EIA is to allow stakeholders to develop an informed view of the development, as required by The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017.

In each topic chapter of our PEIR we have set out how we have addressed comments included in the Scoping Opinion. This is set out in full in Volume 1, Annex 5.1 of the PEIR.

Our PEIR

To support this consultation, we've published a PEIR. This is a statutory requirement of the DCO process and provides the preliminary findings of our environmental assessments, including the likely environmental effects of the Project and how they could be mitigated. We want you to tell us if there are any potential environmental effects that you think we might have missed or anything else we should consider.

Feedback from this consultation, and further technical work, will help us to refine our plans and develop our Environmental Statement, which will form an important part of our DCO application.

Please note that the information provided is by no means exhaustive or fully representative of all the work we've done. More detailed information about all the assessments we've carried out and the subsequent results can be found in our PEIR.

Consultation

Consultation is a crucial part of the Environmental Impact Assessment ("EIA") process and has been carried out to date with both statutory and non-statutory stakeholders through pre-scoping consultation and through the EIA Scoping Report. A summary of the key issues raised during consultation activities undertaken to date, specific to the project description, is presented in Volume 1 Chapter 3 of the PEIR, together with how these issues have been considered in the design of the Project.

Onshore substation site selection

To maintain electrical independence, one substation will be required for the Morgan Offshore Wind Project and one for the Morecambe Offshore Windfarm. Following confirmation from National Grid that the wind farms would connect to the National Grid substation at Penwortham, work began to identify areas in the vicinity of Penwortham as a part of the route planning and site selection process.

Land within 8km of the substation at Penwortham was assessed for its suitability based on a number of factors, including but not limited to:

- Environmental sensitivities e.g. statutory and non-statutory designated sites, such as priority habitats, flood risk and modelling information, and contaminated land
- Ground conditions, such as topography
- Analysis of baseline environmental survey data, including ornithology (breeding bird and wintering bird) surveys
- Proximity to residential properties and receptors
- Accessibility to the existing road network
- Utility infrastructure (mains and high pressure gas and water pipelines, and overhead pylons and lines).

This resulted in the identification of four substation zones, two north and two south of the River Ribble. These were presented at our non-statutory consultation between April and June 2023. Key feedback received at these consultations included proximity to neighbouring communities, visual impact of the substations, flood risk, ornithology, and potential effects on landowners.

Following these non-statutory consultations, further analysis was undertaken of the substation zones to refine and establish the most suitable zones for siting the onshore substations. Zones 3 and 4, south of the River Ribble, are rich in sensitive habitats that support numerous protected species of birds and are constrained by space, topography and access. Zone 2, north of the River Ribble, contains sensitive habitat similar to that found at Newton Marsh and along the Ribble estuary supporting numerous protected bird species. Zone 2 also contains two gas main pipelines, and is generally at higher risk of flooding. Zone 1 is further from designated sites and contains fewer sensitive habitats, as well as having better access to the main highway network. As such the area of Zone 1 has been selected as the basis for the "onshore substations statutory consultation area" (see page 20).

Within the onshore substations consultation area a number of constraints have been identified. As such the siting of the preferred substations are based on the space required and constraints such as proximity to residential receptors, utilities, watercourses, topography and access.

Further detail on the site selection process and the outcome of the work undertaken to date regarding the substation search areas is presented in Volume 1, Chapter 4 of the PEIR.

The process of site selection and refinement remains ongoing, and following this statutory consultation, the final siting for the onshore substations (and associated temporary and permanent infrastructure) will be presented in the final application alongside the Environmental Statement.

Our assessment work to date has been guided and informed by engagement with a number of technical stakeholders. This will continue as the Project develops.

Cumulative effects with other plans and projects are also assessed when considered with the Morecambe Offshore Windfarm and the Morgan Offshore Wind Project (Generation Assets) and the Project.

The Development Consent Order (“DCO”) process

In October 2022, the Secretary of State for Business, Energy and Industrial Strategy issued a direction under section 35 of the Planning Act 2008 that the Project should be treated as a development for which development consent is required.

Consent to construct, operate, maintain, and decommission the Project will therefore be sought under the Planning Act 2008.

The Morgan Offshore Wind Project and the Morecambe Offshore Windfarm (Generation Assets) are each considered to be Nationally Significant Infrastructure Projects (“NSIPs”) and will be the subject of separate applications for development consent.

Our final application for development consent for the Project will include:

- A Consultation Report which will set out consultations undertaken for the Project, and a summary of consultation responses received.
- An Environmental Statement setting out an assessment of the impacts likely to give risk to significant environmental effects and the proposed mitigation.
- A draft Development Consent Order.

The application for development consent will be submitted to the Planning Inspectorate and Secretary of State for Energy Security and Net Zero. The Planning Inspectorate will then follow a number of steps to receive and review the application, seeking further comment from interested bodies and individuals.

If the application is accepted, a pre-examination stage will begin, with opportunities for local community members to register as interested parties on the Planning Inspectorate’s website and request to take part in the examination process.

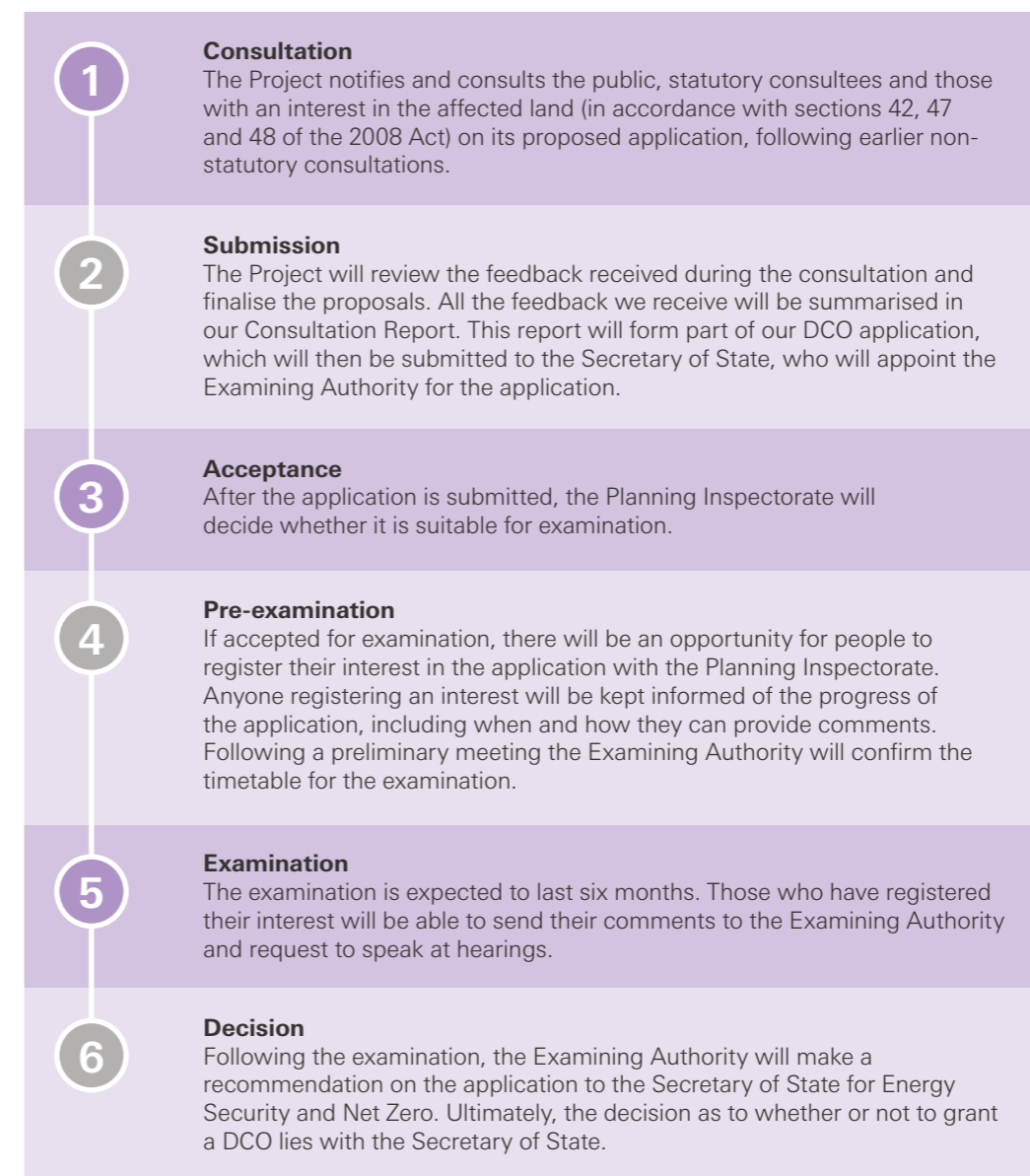
The Planning Inspectorate will then examine the DCO application, with input from interested parties and statutory consultees.

Following the examination, the Planning Inspectorate will present its recommendation to the Secretary of State for Energy Security and Net Zero, who will then make the final decision on whether the DCO should be granted.

If, as a result of the feedback received during this consultation, the Project needs to change to an extent that it is necessary to carry out further statutory consultation, this will be carried out in accordance with the principles set out in our Statement of Community Consultation (“SoCC”) and targeted geographically, or by group, as is appropriate to the change.

To register your interest and follow the Planning Inspectorate’s consultation process, visit www.gov.uk/government/organisations/planning-inspectorate

How the DCO application process works:



More information on the planning process can be found at: infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2013/04/Advice-note-8.0.pdf



Supporting the local, regional and national economy

We believe our proposals for Morgan and Morecambe projects will unlock economic benefits, both in terms of the jobs we will create and the supply chain opportunities.

As we develop our plans in more detail, the scale of this economic boost will become clearer. In the meantime, we will continue to engage with relevant stakeholders, including the local planning authorities, local enterprise partnerships and local communities to identify opportunities related to skills, employment and local content.

We will use this to develop plans spanning the construction and operational phases of the projects.

Supply chain

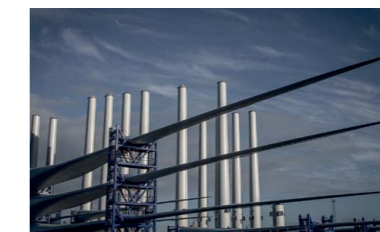
We know that offshore wind projects bring benefits to their local communities and we believe it's incredibly important the local supply chain contributes to this projects too.

Using the information on our project websites, local companies can pair their skills with the projects' needs. The portals provide access for companies of all sizes to register their interest for future work.

These projects encourage UK-based suppliers, particularly those with local connections to register their interest.

We have portals open for Morgan and Morecambe respectively:

- www.enbw-bp.com/suppliers
- www.morecambeoffshorewind.com/#supply



Have your say

Local people, including residents, local elected representatives and other stakeholders, have a really important role to play throughout this consultation. We need your views and knowledge as we work to develop our proposals further in preparation for submitting our DCO application.

This statutory round of consultation will be open from **Thursday 12 October to 23:59pm on Thursday 23 November 2023.**

Printed materials

We want to make sure you have access to all the information you need about the Project. All materials associated with this consultation are available digitally on our Project website: www.morecambeandmorgan.com/transmission

If you don't have online access, you can visit one of the deposit locations (listed on our website and shown on the map opposite, along with locations of our consultation events) pick up paper copies of our brochure and feedback form and return the feedback form to our freepost address. Please note that opening times of deposit locations may vary so please refer to the venues' websites before visiting. Paper copies can also be picked up at our in-person consultation events (see pages 12-13).

However, if you would prefer to view Project materials in an alternative format then please contact the Project team by calling **0800 915 2493 (option 3)** or emailing info@morecambeandmorgan.com

Take part and provide feedback



Feedback map – available on the Project website www.morecambeandmorgan.com. This interactive map of the proposals allows people to drop a pin and leave comments online and / or attach files (such as document or images) to their feedback.



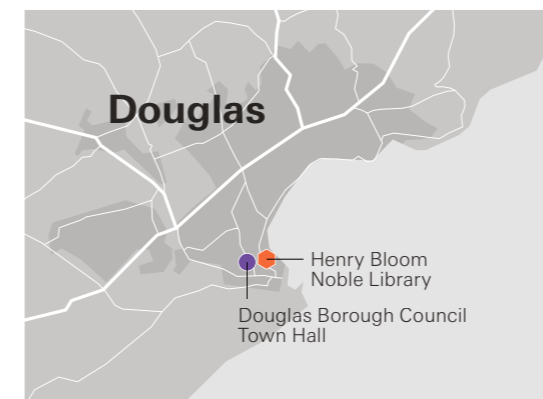
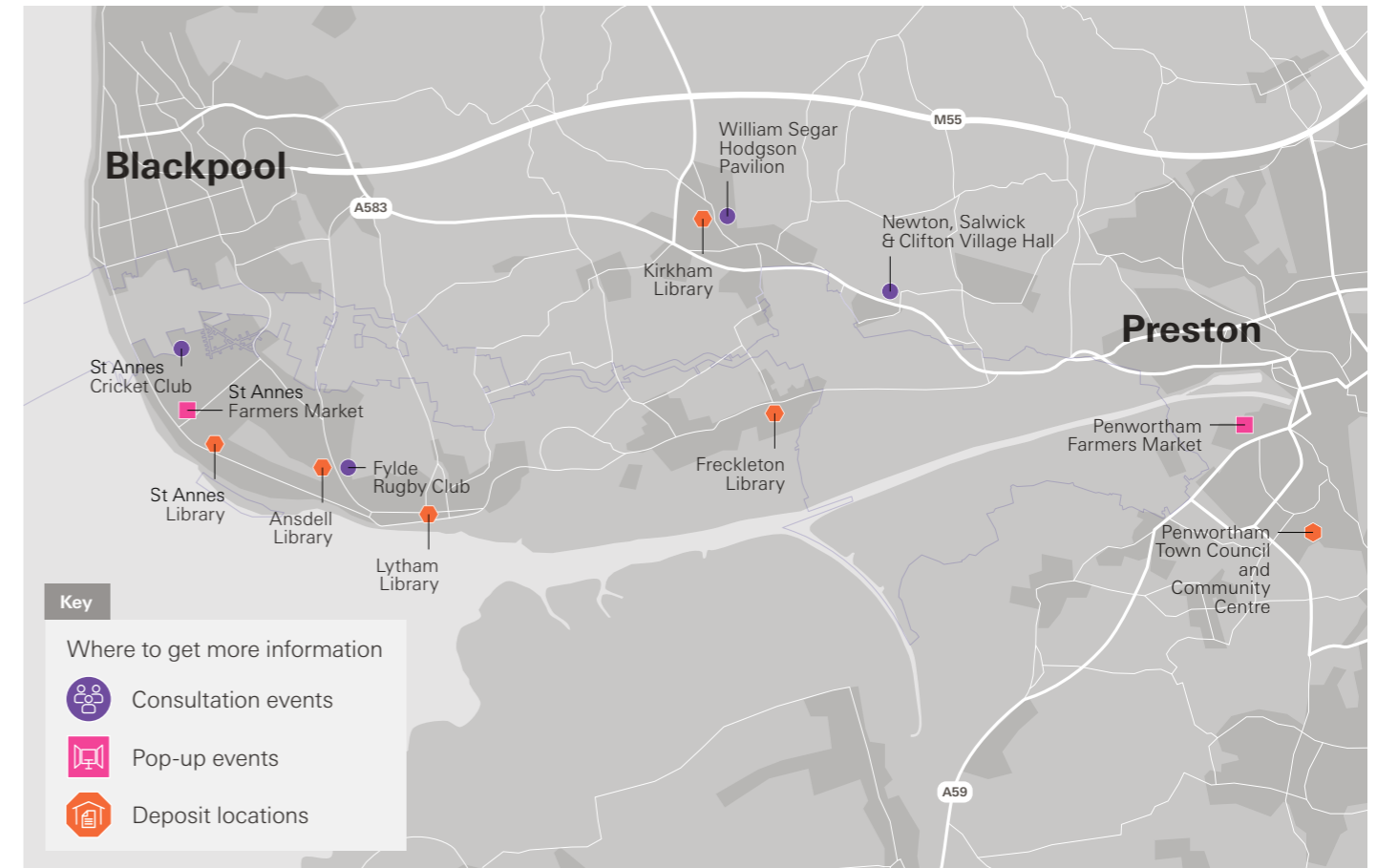
Feedback form – available on the Project website www.morecambeandmorgan.com/transmission, at consultation events, deposit locations or by request from the team.



By email – to info@morecambeandmorgan.com



In writing – **FREEPOST MORECAMBE AND MORGAN** (please be advised it is not possible to send registered post to a freepost address).



Next steps

Once this consultation closes on Thursday 23 November 2023 (23.59pm) we will consider all feedback we have received alongside carrying out further technical, engineering and environmental work.

We will then prepare our DCO application for the Project for submission to the Planning Inspectorate and Secretary of State for the Department of Energy Security and Net Zero. We expect to submit our application for development consent in 2024.

Our application will include:

- A Consultation Report which will set out consultations undertaken for the Project, and a summary of consultation responses received.
- An Environmental Statement setting out an assessment of the impacts likely to give risk to significant environmental effects and the proposed mitigation.
- A draft Development Consent Order.

The Planning Inspectorate will examine our proposals and prepare a report for the Secretary of State for the Department of Energy Security and Net Zero. The Secretary of State will then make the final decision on our application, which we expect to receive before the end of 2025.

The Morgan Offshore Wind Project Generation Assets and the Morecambe Offshore Windfarm Generation Assets are each considered to be NSIPs in their own right and will be the subject of separate applications for development consent.

If our applications are successful, we expect to begin construction in 2026/2027. We anticipate both the Morgan Offshore Wind Project and the Morecambe Offshore Windfarm to be operational in 2028/29 at the earliest.

There will be further opportunities for people to have their say on our proposals post-application via a process led by the Planning Inspectorate. You can find out more about this process and register to receive direct updates by visiting infrastructure.planninginspectorate.gov.uk/application-process/.

Indicative timeline (as of publication 2023)

- **2023**
 - **Spring 2023**
Second stage of consultation (non-statutory)
 - **October - November 2023**
Third stage of consultation (statutory)
- **2024**
 - **Q2/Q3 2024**
Applications submitted for DCO and other licences
- **2025**
 - Expected decision on the DCO by the Secretary of State
- **2026**
 - Expected Final Investment Decision
- **2026/27**
 - Start of construction
- **2028/29**
 - Expected start – Commercial Operation Date

Please note that this is an indicative timeline and could be subject to change.

Contact us

If you'd like any more information or have any questions about the Project, you can contact us:

Find out more on our website www.morecambeandmorgan.com/transmission or use this QR code

Phone: **0800 915 2493 (option 3)**

Email: info@morecambeandmorgan.com

Post: **FREEPOST MORECAMBE AND MORGAN**





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transmission](http://www.morecambeandmorgan.com/transmission) or use this QR code



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