1. Executive Summary

1.1 Purpose of the report and assessment

This report was commissioned in March 2026 by Lancashire County Council and its Fylde Coast local authority partners to investigate the economic merits of an alternative infrastructure route for the Morgan, Morecambe, and Mooir Vannin offshore windfarms.

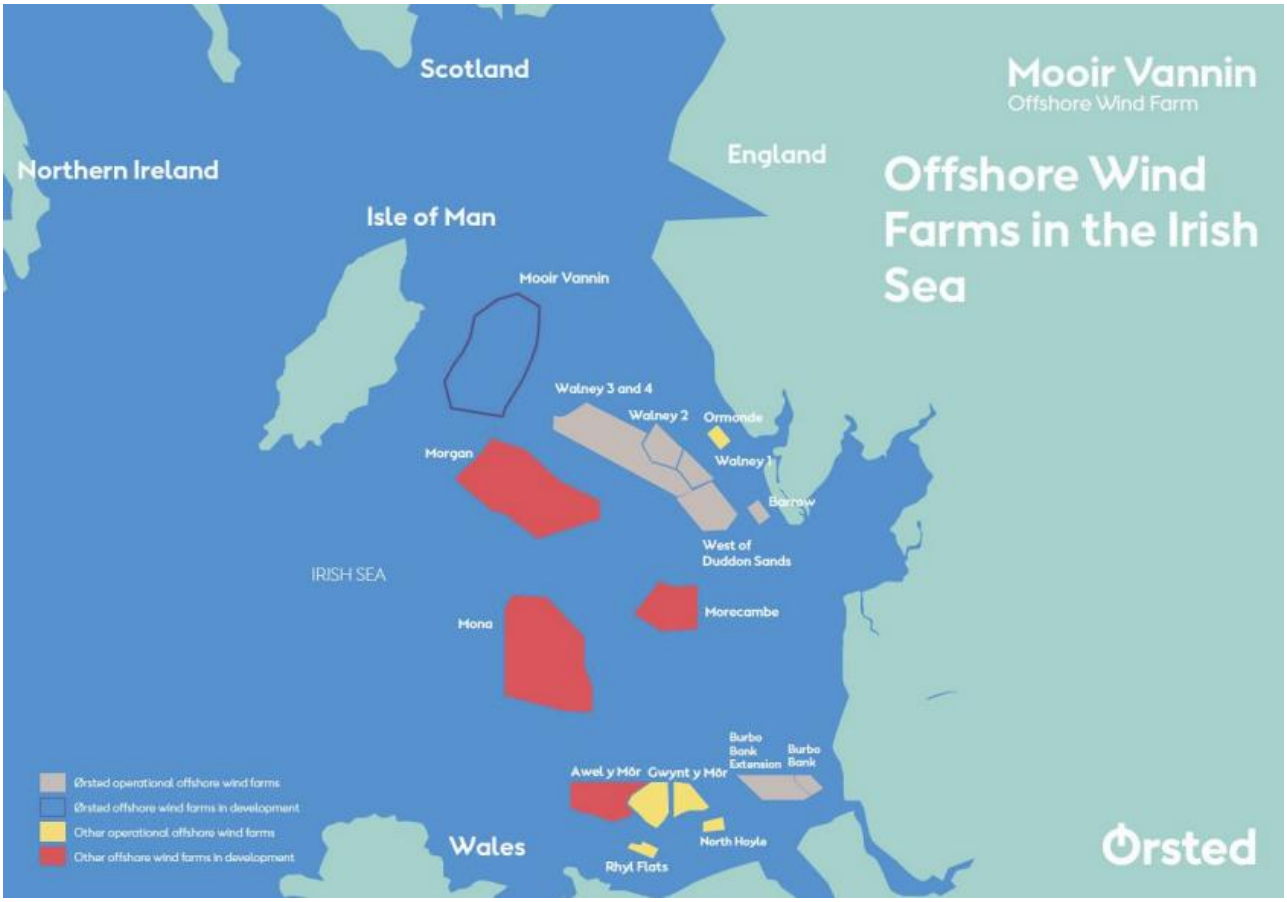


Figure 1: Location of Wind Farms in the Irish Sea

The study examines whether variations to the current proposed route (as per the Development Consent Order), involving a buried cable of approximately 30km to Penwortham, could better maximise local economic benefits and improve project viability.

1.2 Context

The UK Government's ambition around offshore wind capacity reflects a drive to decarbonise electricity, enhance energy security, and stimulate economic growth. To achieve these existing targets of up to 50GW by 2030, requires rapid deployment, grid upgrades, and investment, positioning offshore wind as the backbone of a clean power system.

The UK current capacity is just 16GW of offshore wind in operation, showing a clear need to ramp up investment.

The Morgan and Morecambe Offshore Windfarms are two large scale renewable energy projects located in the Irish Sea, designed to generate up to around 2GW of electricity - enough to power approximately two million homes. Together, they form part of the UK's offshore wind expansion and are seeking consent through the proposed Development Consent Orders (DCOs), with separate applications for generation assets (turbines, offshore substations, and inter-array cables) and transmission assets. The transmission DCO covers the export of electricity to shore. The proposed DCO runs offshore export cables from the windfarms to a landfall point on the Lancashire coast, likely between Blackpool and Lytham St Annes. From there, onshore underground cables pass through the Fylde area to two new substations near Kirkham, Newton and Freckleton, before continuing to the existing National Grid substation at Penwortham on the outskirts of Preston, which is the connection point.

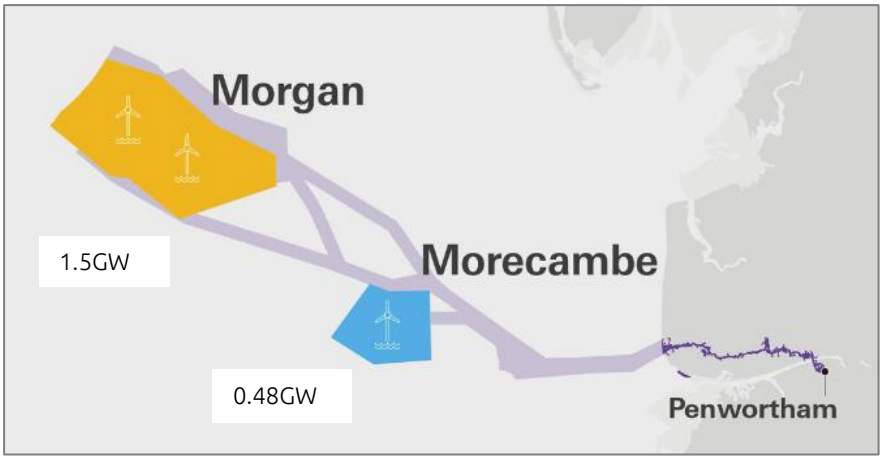
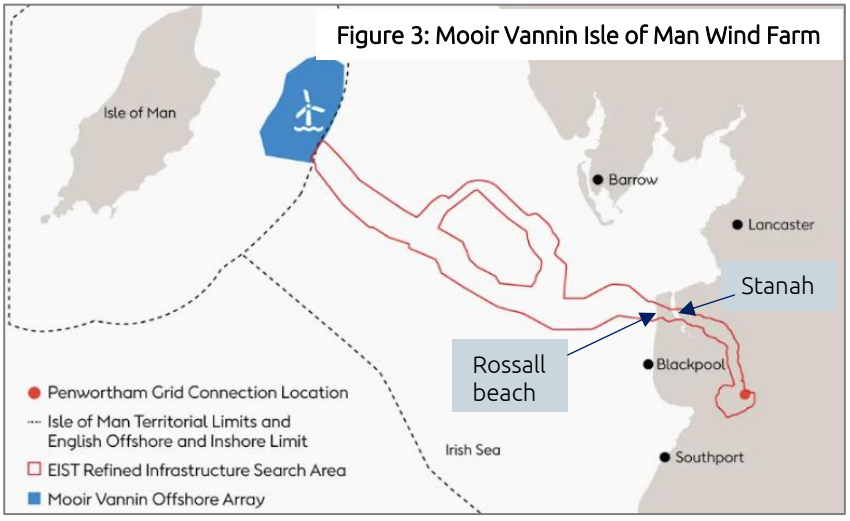


Figure 2: Morgan and Morecambe Proposed DCO route to Penwortham

Figure 3: Mooir Vannin Isle of Man Wind Farm



Part of the overall context is a third wind farm in the Irish sea. The Mooir Vannin Offshore Wind Farm, being proposed and developed by Ørsted (in partnership with the Isle of Man Government), is a proposed 1.4 GW offshore windfarm project in the Irish Sea, capable of powering over 1 million homes.

Electricity generated offshore would be gathered via subsea cables and exported to the UK through the East Irish Sea Transmission Project. The preferred route brings cables ashore near Fleetwood at the northern end of the Fylde peninsula (coming on shore at Rossall close to the existing Stanah substation) and to the north of the Morecambe and Morgan proposed landing point at Blackpool. From there, current proposals are to run cables underground across Wyre, crossing key rivers before connecting into the National Grid also at Penwortham Substation, ensuring integration into the UK transmission network.

Current DCO proposals do not appear to have considered the potential to bring these three wind farm projects together. This report has explored this as an option.

1.3 Scope of the Assessment

In January 2026, the developer behind Morgan pulled out after failing to secure UK Government support (specifically Contracts for Difference funding). The reason given was that the project was no longer economically viable in the current investment climate. The Morgan Offshore Wind Project was being developed as a joint venture between BP and EnBW. EnBW is a German owned electric utility company (Energie Baden-Wuerttemberg AG). In May 2025, EnBW announced plans to invest up to EUR 50 billion by 2030. With the failure of the CfD application, EnBW indicated it would switch its investment back to Germany.

Given this background, local partners believe there is an opportunity to review the DCO routing and explore whether there is a more economically advantageous route, bringing all three wind farm opportunities together. Given that timescales have moved out on the delivery of Morgan and Morecambe and that the developer for Morgan has withdrawn their investment given failure to secure an acceptable CfD with the Government, this does suggest the need to explore alternative, more economic route options that would then offer the opportunity for a more economic CfD agreement with Government.

The assessment has been conducted by a multi-disciplinary team led by Genecon (economics), including key inputs from Blake Clough Consulting (electrical and grid), and DWD (planning). The scope has included:

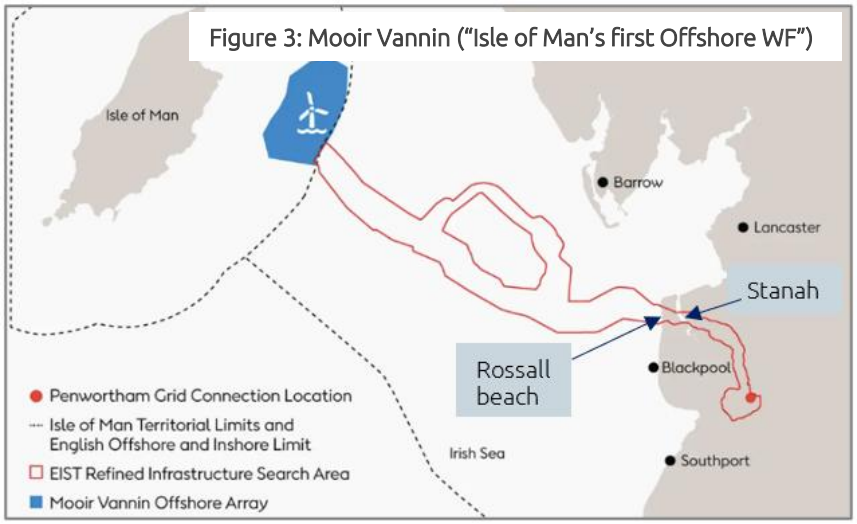
- An electrical and grid engineering assessment: Reviewing transmission network capacities at 400kV and 275kV levels, identifying bottlenecks at the Stanah substation, and evaluating reinforcement requirements for various connection strategies, and ultimately cost estimates for alternative infrastructure solutions.
- An environmental and ecological assessment: A desk-based review of landfall suitability at Rossall Beach and potential impacts on the Morecambe Bay Special Protection Area (SPA).
- An economic assessment of any benefits that could be realised through variations to the route, focusing on development opportunities on the Fylde Coast at Blackpool Airport Enterprise Zone, or Hillhouse Technology Enterprise Zone.

1.4 The Alternative Northern Route

Partners have assembled an alternative proposal whereby both Morgan and Morecambe land at an alternative beach at Rossall further north on the Fylde Coast, and proceed inland approximately 5km to the Hillhouse Technology Enterprise Zone, to terminate at either a new substation or at Stanah (which is adjacent to Hillhouse Technology Enterprise Zone). From the electrical and grid engineering assessment, a new substation at Hillhouse is a more viable proposition.

This route traces most of the route inland that has been suggested at pre-application stage by Mooir Vannin promoter Ørsted, but instead of continuing underground to Penwortham, terminating instead at a new substation at Hillhouse, before accessing the existing overhead lines from Stanah-Hambleton-Penwortham.

Figure 3: Mooir Vannin ("Isle of Man's first Offshore WF")



1.5 Addressing Constraints at Hillhouse Technology Enterprise Zone

The study specifically focused on the Hillhouse Technology Enterprise Zone, a 138-hectare brownfield site with a legacy of chemical manufacturing. Despite its Enterprise Zone status, and advantageous local development orders, the site faces severe, multi-faceted constraints that have limited job growth to just 75 additional roles since 2016.

Key barriers identified include:

- Energy Export Constraints: While the site has energy demand headroom, it is severely limited by the poor export capacity at the Stanah substation. This has acted as a "drag" on financial viability, preventing any meaningful energy-generating uses from materialising, despite proposals for Energy from Waste and Hydrogen storage.
- Transport Accessibility: The site is currently accessed through a predominantly residential area, which causes accessibility challenges for different types of industrial uses, thus hurting job growth at the site. The absence of a bridge or at-grade crossing over the disused railway line remains a core barrier to plots being absorbed for employment use, proposals are being developed to mitigate this, but the job growth trajectory means there is a lack of strategic imperative to act.
- Contamination and Assembly: As a former ICI site, it faces challenges related to land contamination and complex land ownership, which coupled with energy export and transport constraints means the site is quite unappetising for bringing forward private development.

1.6 Consideration of Blackpool Airport Enterprise Zone

The assessment also considered a southern route variation terminating at a new substation within the Blackpool Airport Enterprise Zone. The site has been quite successful locally and is largely built out with the exception of the former Wellington Bomber Factory, and any other plots which are as yet undeveloped have agreements or developed proposals. While this option does offer some cost savings and could accelerate the "Silicon Sands" data centre campus by approximately five years, it was found that stakeholders are already confident that power for this site will be delivered through other planned investments by 2035. Furthermore, this variation does not mitigate the environmental and community disruption associated with the long and buried cable route through the Fylde Coast.

1.7 Key Findings: Cost Savings and Project Viability

The findings of the study support assertions that there are significant financial cost savings through alterations to the infrastructure route that is proposed in the DCO -replacing the route with a Northern Route via Rossall and terminating to a new substation at Hillhouse Technology Enterprise Zone. This route would benefit from reduced underground cabling costs, lower disruption to communities, and would make use of the existing overhead infrastructure that exists between Stanah, Hambleton and Penwortham. The cost savings are estimated at between £250m and £287m for the Morgan and Morecambe wind farms, rising to over £500 million if coordinated with the forthcoming Mooir Vannin project.

Option	Cost	Versus BAU
Option A: Business as Usual, DCO Route		
Option A1: Morgan and Morecambe Only	£443.2m	-
Option A2: Morgan and Morecambe and Mooir Vannin	£845.4m	-
Option B: Connection to Hillhouse/Stanah		
Option B1: Morgan and Morecambe only	£156.1m - £193.0m	£250.2m - £287.1m
Option B2: Morgan and Morecambe and Mooir Vannin	£271.2 - £326.5m	£518.9m - £574.2m
Option C: Connection to Blackpool Airport EZ		
Option C1: Morgan and Morecambe only	£382.6m	£60.6m
Option C2: Morgan and Morecambe and Mooir Vannin	£638.7m	£206.7m

Note: Options B1 and B2 ranges reflect either Stanah upgrade or new substation at Hillhouse (higher cost).

These savings materialise via:

- **Infrastructure Efficiency:** By landing cables at Rossall and utilising existing overhead transmission lines, the project can drastically reduce the volume of expensive underground cabling, reducing from circa 30km to 5km.
- **Improved Viability:** These savings are critical given the current investment climate. The report notes that developers EnBW have already withdrawn from the Morgan project due to lack of financial viability from failing to secure Contracts for Difference (CfDs) from the UK government, and from construction cost inflation. Reducing capital expenditure by half a billion pounds could significantly improve the overall viability and deliverability of the Morgan wind farm. This could potentially allow it to secure a CfD at a lower strike price than was previously required to make the project viable. EnBW are well capitalised, and have an estimated 50bn EUR to invest, without intervention it appears they are looking to deploy capital elsewhere in Europe where they are able to make the required viable return. This loss of this foreign direct investment could be a real missed opportunity for the UK given the Government's ambition for the UK to reach up to 50 GW of clean energy from offshore wind by 2030. At the end of 2024, the UK had an offshore wind capacity of just16 GW.

1.8 Unlocking Economic Growth

Establishing a new substation at Hillhouse has the potential to unlock considerable additional jobs and Gross Value Added (GVA) by transforming the site's underlying economic fundamentals, and improving the business case for transport investment to facilitate improved access to the site.

There are also benefits to an alternative solution with a substation at Blackpool Airport EZ, but there are potential technical constraints, lower (though significant) costs savings, and an economic benefit that is about acceleration rather than a change of trajectory.

For Hillhouse Technology Enterprise Zone, a change of infrastructure solution to develop a new substation on the site, with a tee-in to the existing Stanah-Hambleton-Penwortham overhead lines and associated upgrades is expected to yield the following benefits:

- Employment: The transition is expected to support 1,100 additional jobs compared to the current trajectory, driven by the arrival of energy-generating uses and subsequent energy-intensive industrial uses.
- GVA Uplift: The local economic benefit is projected to range between £99 million and £177 million per annum. The upper bound represents an 8.6% uplift in the total GVA of the Wyre borough. Over the 10-year period from 2030 to 2040 (when the wind farms were expected to become operational), this is a gross uplift of £999m to £1.77bn.
- Strategic Catalyst: Infrastructure improvements would strengthen the case for the £8m–£10m transport investment needed for a new site crossing, which would enable the build-out of 63 hectares of available development land, which has otherwise only seen development over the last decade of just 76 more jobs.

1.9 Environmental and Ecological Summary

A high level environmental and ecological assessment has been undertaken for the proposed alternative Northern Route from Rossall to Hillhouse. In correspondence with Council Leaders, NESO noted "onshore cable routeing options to Stanah would still need to pass through existing built development and environmentally sensitive areas, with these routes assessed as high adverse impact".

From the ecological and environmental review undertaken for this report, the findings were more balanced. The review notes that some sections of the route intersect natural habitats and will require ecological consideration, but that "the majority of the route follows main roads consisting of developed land and sealed surfaces with minimal ecological value".

The review recommends further investigation, but has the expectation that best practice construction methods could be followed to mitigate any potential impacts on priority habitats, watercourses and protected species. Standard mitigation methods are suggested to counteract any potential (but as yet unknown) adverse environmental and ecological impacts, but the overall conclusion is certainly not one of "high adverse impact". This suggests that pending further investigation, it is quite feasible that the route can be navigated without undue environmental and ecological harms.

1.10 Conclusion and Recommendation

The evidence gathered indicates that the alternative northern infrastructure route is technically feasible and offers vastly superior economic and financial outcomes compared to the current DCO route proposal. Given the scale of potential savings and the opportunity to revitalise and unlock a major regional industrial asset, it is the conclusion of this report that the findings merit a pause in decision-making.

This would allow local partners and the Secretary of State to assemble further evidence and refine the feasibility of this alternative route to ensure the maximum benefit for both Lancashire and the UK's net-zero transition.

The expected outcomes are improved economic and employment prospects on the Fylde Coast, of the order of an additional £1bn of GVA over the decade to 2040, and an additional 1,100 jobs.

The alternative northern route would entail avoidance of disruptions to residents (in contrast to the proposed DCO route), and significant cost savings which may well be of a quantum to rescue the viability of the 1.5GW Morgan Wind Farm, noting that EnBW have pulled out of the scheme.

Reduced infrastructure costs may reduce the strike price the transmission owner needs to secure in order to make the project viable, which could prevent this capital being deployed overseas by EnBW, supporting the UK's energy security and energy generation, as well as bringing about local economic benefits to residents on the Fylde Coast through additional jobs and economic output.

Given that timescales have effectively moved out on the delivery of Morgan and Morecambe and that EnBW has withdrawn their investment given the failure to secure an acceptable CfD with the Government, this does suggest the need to explore alternative, more economic route options. Combining this with the opportunity to integrate the planning with Mooir Vannin, this would then deliver the £0.5bn of capital cost savings and therefore the opportunity for a more economic CfD agreement with Government.