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Floating offshore wind and the Strategic Spatial Energy Plan

August 2026

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Image: Port of Cromarty Firth

1 Summary

Why is the success of Floating Offshore Wind essential for the UK's energy system and economy?

Floating offshore wind (FLOW) is on the cusp of commercial-scale deployment. In the next five years, the construction of the first large-scale FLOW sites in Scotland and the Celtic Sea will demonstrate the deliverability of FLOW at scale, enabling major steps towards cost reduction and establishing the industrial capability needed to compete in a growing global market.

Building on the success of fixed offshore wind, FLOW offers unique benefits:

- **A more resilient energy system** by unlocking deeper waters with enhanced and diversified wind resources, adding to the UK's energy system balance and strengthening energy resilience
- **Regional economic growth** by attracting investment into ports, industrial areas and coastal communities in regions of the UK that will benefit from the energy transition, including areas in north and east of Scotland, Wales and south-west England
- **A just transition** by building on the heritage and capability of North Sea industries and their deep water deployment capability, enabling a genuine transition of skills and people from the oil and gas sector
- **A globally competitive industry** by establishing the supply chains, infrastructure and expertise needed to secure high-value jobs and export opportunities.

The opportunity is clear, but success is not guaranteed.

OUR RECOMMENDATIONS

The UK, Scottish and Welsh governments must work together to provide the long-term certainty needed to unlock investment, reduce costs and build industrial capability. This requires:

- **Providing a clear long-term market signal to developers and supply chain through the upcoming Strategic Spatial Energy Plan (SSEP)**, giving FLOW technology and project investors a credible deployment pathway to boost confidence and invest
- **Recognising the system value of FLOW in the SSEP** by considering the benefits of a more geographically diverse offshore wind portfolio - including improved energy resilience and reduced balancing costs - alongside the levelised cost of energy (LCOE)
- **Reaffirming the FLOW opportunity in SSEP commentary** and reinforcing shared government commitments for its development across strategic plans, supported by coordinated action on skills, ports and supply chains
- **Aligning the SSEP with existing policy and market frameworks** – seabed leases, network reinforcement, planning reform and Contracts for Difference (CfD) support – to provide investment signals to ports, offshore industries, manufacturers and the wider supply chain
- **Officials and industry to continue working together on cost reduction,** including through the Floating Wind Executive (FLOWEX), to create a framework that identifies key cost drivers and levers for action, with costs falling through innovation, deployment learning and scale.

2 The UK’s FLOW opportunity

FLOW is at a critical stage, with commercial markets and international supply chains developing. Policy support is needed to build on the progress made over the past decade, secure investor confidence and cement the UK’s leadership position in the global FLOW market.

The UK already accounts for 14% of the global FLOW portfolio and is expected to be one of the two largest operational markets by 2030. Scotland is at the heart of this position, hosting two of the world’s first FLOW projects, Hywind Scotland and Kincardine, and approximately 85% of the UK’s existing pipeline.

As offshore wind becomes the backbone of the UK’s future electricity system, FLOW can unlock deeper waters to complement other low-carbon generation and strengthen energy security and resilience, all while supporting continued growth in clean energy. This positions Scotland and other UK maritime regions, such as the Celtic Sea, at the forefront of an emerging global energy industry.

As of July 2026, France overtook the UK in operational capacity, illustrating how quickly commercial deployment is gathering pace across Europe. Long-term leadership will ultimately be determined by countries that can sustain deployment, build competitive supply chains and develop export capability.

Rank	Country	Operational capacity
1	Norway	93.9 MW
2	France	87.2 MW
3	United Kingdom	78 MW

Floating offshore wind in the UK

The UK's FLOW portfolio already reflects significant investment and project development since Scotland's ScotWind and INTOG, and the Celtic Sea's T&D projects and Leasing Round 5.

The industry recognises the need to demonstrate a cost-reduction pathway, with deployment providing the learning and scale required to reduce costs. Maintaining momentum as projects progress towards delivery will be critical to capturing this value and sustaining investor confidence.

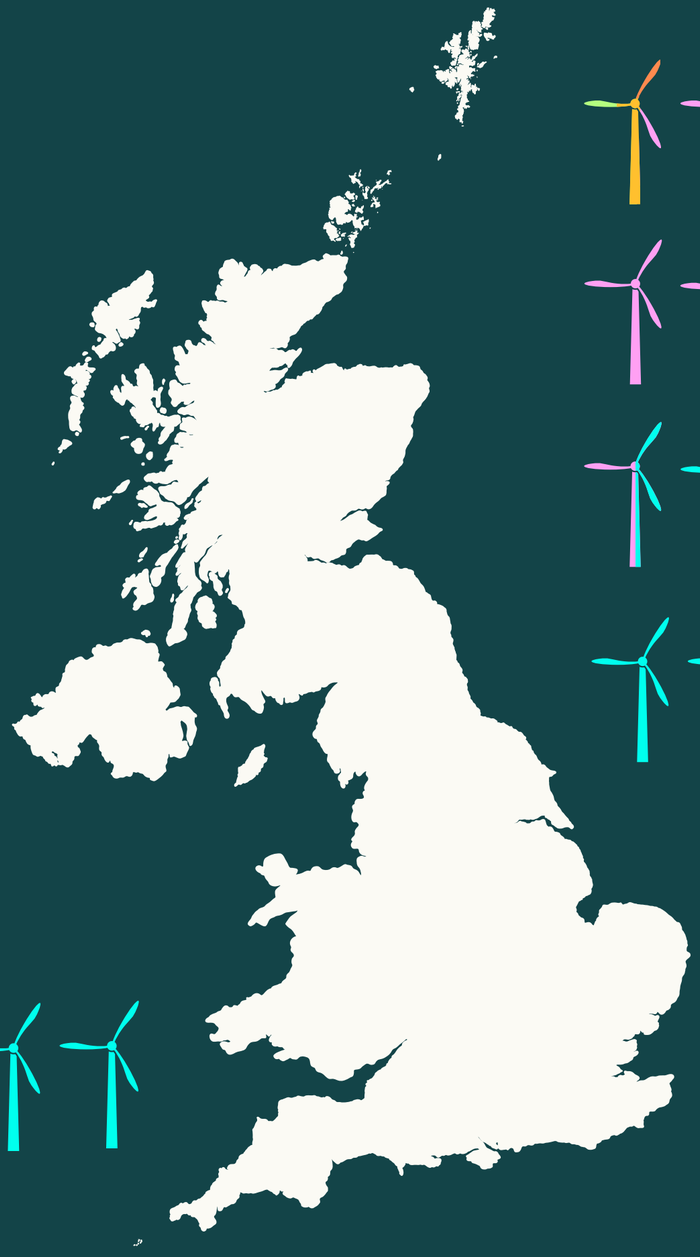
78 MW
operational

760 MW
consented with a CfD

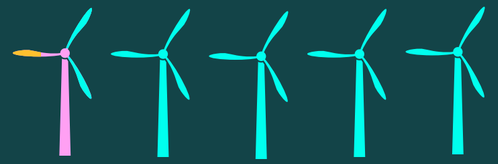
200 MW
consented

13.8 GW
in planning

13.7 GW
in development



23.6 GW
in Scotland



4.9 GW
in the Celtic Sea

32%
of the total UK offshore wind portfolio

3 The first SSEP

The first iteration of the SSEP will send a clear signal to industry, investors and the supply chain about the priorities for the future energy pathway and the UK and devolved governments' commitment to FLOW.

For investors, technology developers and their supply chains, the SSEP will be seen as a key statement of the UK's support for the clean power mission and the technologies to deliver it. This is particularly important for FLOW.

With much of the committed deployment expected in the next five years and delivery dependent on projects meeting milestones, the SSEP will reinforce confidence in the UK's longer-term commitment to FLOW, reducing investment risk and supporting the sustained deployment needed to achieve cost reductions as projects mature and increase in scale.

Investors are expecting strong positive signals that the UK's leadership in FLOW technology will be maintained:

- The scale, regional distribution and timeline of FLOW are aligned with the UK government's ambition to deploy this technology at scale and provide a strong investment signal for the pipeline of projects
- The commentary accompanying the plan highlights the FLOW opportunity and recommits to provide support through technology and project development, supply chain and infrastructure

A first SSEP that deprioritises FLOW – or pushes development beyond investment horizons – would send a negative investment signal for the industry.

- An SSEP that is reinforced by other locational signals for FLOW, including future leases, network charges, planning and revenue support.

By contrast, an SSEP that pushes the deployment timeline beyond the investment horizon would send a negative signal and risk stalling projects' progress from consent to FID and construction. It would be a mistake to think that by leaving FLOW off the SSEP table, it may come back later at a lower cost. A more likely outcome is that FLOW technology will be developed in Europe and Asia, meaning the UK would not realise the associated industrial benefits.

4 Deliverability

Building on decades of North Sea deep-water expertise, large-scale fabrication, port infrastructure, a vibrant marine-tech sector and proven technology innovations, FLOW is a credible, deliverable technology ready for scale-up.

Hywind Scotland and Kincardine have demonstrated that FLOW can operate successfully in UK waters. Larger demonstration projects - Pentland, Erebus and Green Volt – mark the transition to commercial deployment and will be part of a credible pipeline of at least 1 GW expected to be delivered within the next five years, with a further 27 GW of longer-term development.

While floating foundations and mooring systems present new engineering challenges, Scotland has the industrial capability to deliver commercial-scale FLOW, creating a clear pathway for the North Sea transition and high-value job opportunities for coastal and island communities. The Inverness & Cromarty Firth Green and Celtic Freeports provide established platforms for investment, trade and supply-chain development.

FLOW is also positioned to leverage and enhance the UK's 'blue-tech' sector, including the use of autonomous vessels, subsea robotics and AI systems for survey work, deployment and maintenance. With hotspots for blue tech in marine clusters like Aberdeen's Energy Transition Zone and Plymouth's National Centre for Marine Autonomy, there is strong overlap with defence and other maritime industries. Scotland also has a strong track record of network delivery, with major reinforcements, including the Eastern Green Links and Beauly-Peterhead upgrades already progressing to increase network capacity.

As the SSEP feeds directly into NESO's Centralised Strategic Network plan, sending the right signals will help ensure necessary infrastructure is delivered on time.

Much of the capability required for commercial-scale FLOW – including deepwater engineering, subsea systems, moorings, port logistics and offshore installation techniques – already exists through decades of North Sea oil and gas activity and delivery in fixed-bottom offshore wind.

Image: Port of Cromarty Firth/Eliott Day

Investment in infrastructure needed for commercial deployment is already under way, including a major investment in the Port of Cromarty Firth and £500m of supply chain commitments from the Scottish Government.

Image: Port of Cromarty Firth

5 Socio-economic opportunity

FLOW presents an opportunity to do more than just generate clean electricity. New technology and a new industry can unlock billions of pounds in investment and support high-value employment across Scotland and other UK maritime regions, including Northern Ireland, south Wales and south-west England.

The socio-economic case for FLOW scales with deployment. Commercial deployment can anchor a new wave of industrial activity across Scotland and the wider UK. The nature of FLOW, with its need for deep-water deployment, large-scale fabrication and mooring systems, means that floating projects are expected to capture an even greater share of UK and regional content than their fixed-bottom counterparts.

Over the past five years, socio-economic benefits have increasingly been embedded in FLOW development. Scotwind's Supply Chain Development Statements, the Celtic Sea Leasing Round 5 process and the Clean Industry Bonus support the objective of enhancing the wider benefit of energy infrastructure projects for maritime communities, the UK supply chain and wider economy.

The Scottish Government's update to the 2020 Offshore Wind Policy Statement highlights the wider socio-economic benefits of offshore wind, including sustainably growing local, regional and national economies, creating high-quality green jobs, supporting a just transition, reinvigorating coastal towns and delivering lasting benefits for communities.

Public finance is also becoming more coordinated to accelerate offshore wind deployment. Great British Energy, the National Wealth Fund, the Scottish National Investment Bank, The Crown Estate, Crown Estate Scotland and the Development Bank of Wales have committed to a unified investment approach to strengthen UK offshore wind supply chains.

The scale of investment

The Floating Offshore Wind Taskforce estimates that the FLOW supply chain – platforms, moorings, cables, ports, installation and O&M – could generate £38bn of UK GVA to 2050, sustaining 27,000 jobs a year between 2030 and 2050. Continued collaboration across industrial sectors will be key.

*Estimated using a Guide to a Floating Offshore Wind Farm as a primary cost assumption, cross-checked against DESNZ.

Spent to date

Hywind Scotland & Kincardine
c. £500m
investment/ financing

R&D and innovation centres
£40m
FOW demo + FLOWIC

The UK's 28.5 GW portfolio
c. £1bn*
DEVEX

Committed

ScotWind FLOW supply chain
£25.9bn
into UK

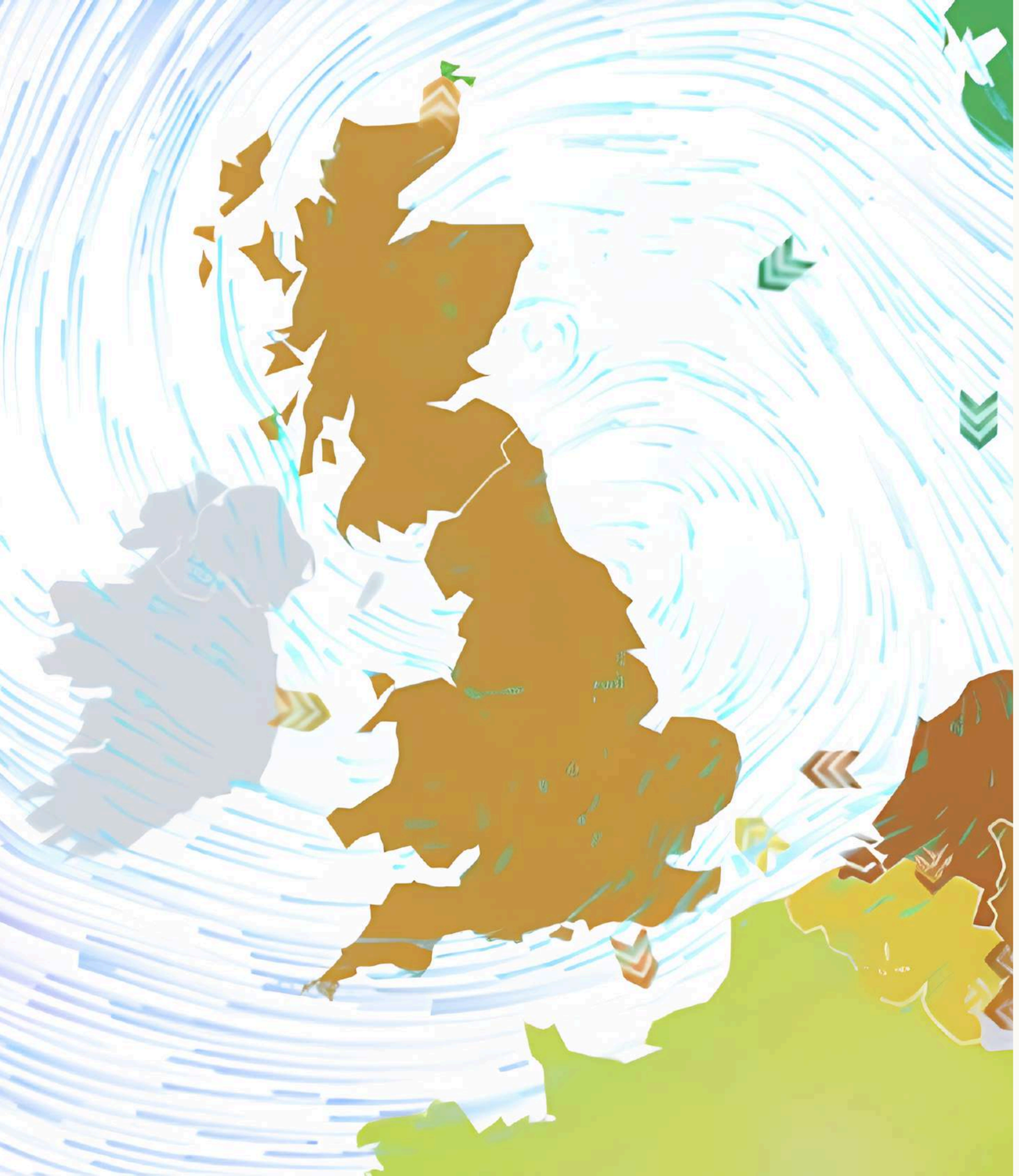
Clean Industry Bonus (AR7)
£3.4bn
supporting 7,000 jobs

FLOWMIS
£119.7m
to Port of Cromarty Firth and Port Talbot

Public-private deal
£1bn
into manufacturing and jobs

Pentland FLOW project
£150m
from GBE, NWF and SNIB

Scottish Government
£500m
over five years



6 Whole-system benefits

FLOW will allow the UK to expand offshore wind into new seabed areas, taking advantage of higher and more diversified wind resources and helping to balance generation and increase system resilience.

To date, most of the fixed-bottom offshore wind in the UK and its EU neighbours has been concentrated in the shallow waters of the southern North Sea. With four of the world's five largest offshore wind farms located there, this concentration of capacity in one area of the seabed and one weather pattern increases the variability of power generation and the risk of prolonged periods of high or low output. In the case of low generation, this includes the 'dunkelflaute' caused by a cold winter high-pressure system that can sit over northern Europe for several days.

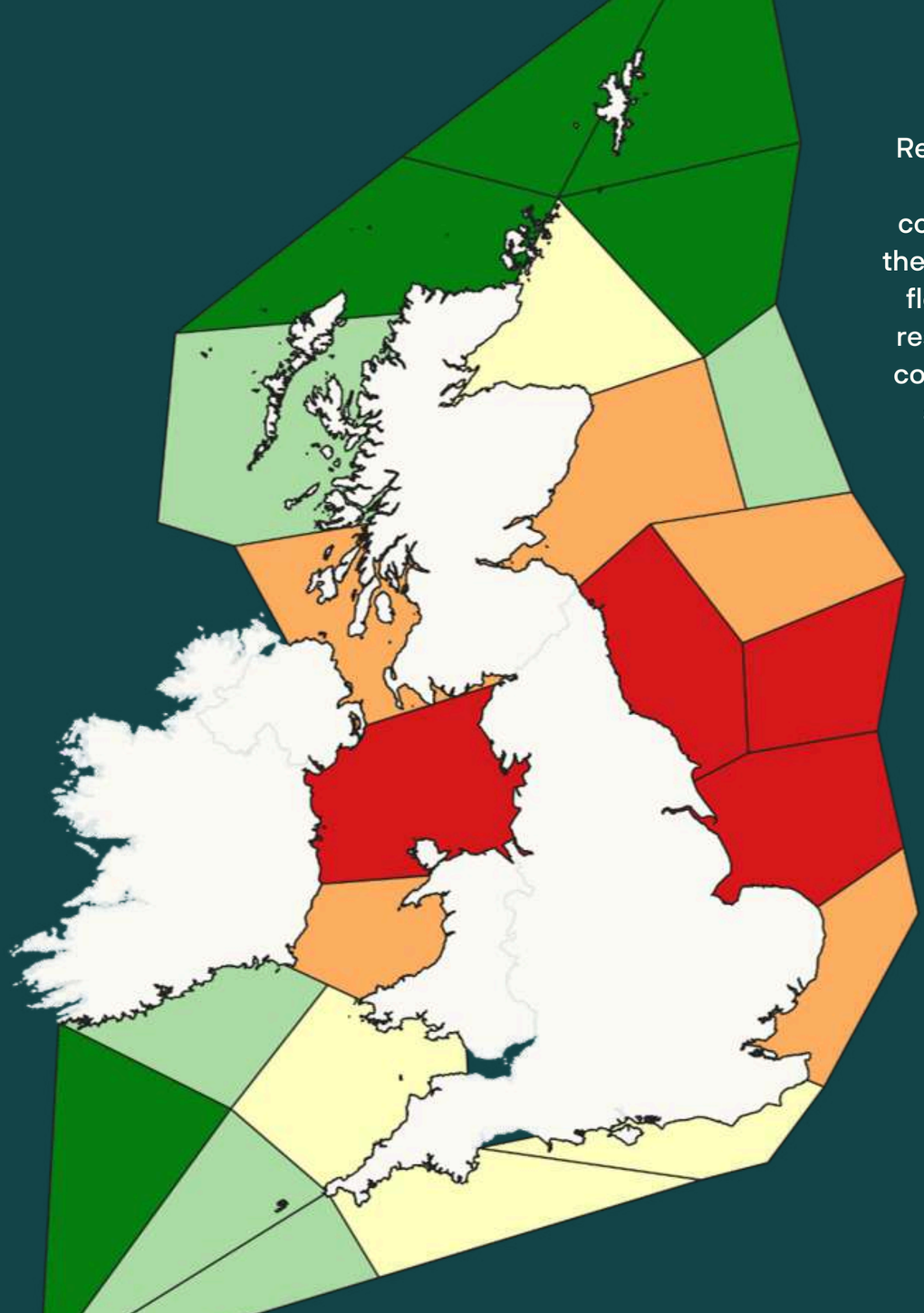
A typical winter dunkelflaute on 17 December 2021, when a high-pressure system suppressed wind generation in the southern North Sea, while stronger anticyclonic winds persisted to the west and north of GB.

Geographic diversity can strengthen system resilience

As offshore wind becomes a larger part of the UK's energy mix, the location of generation matters as much as how much capacity is built. Regen's Go West! analysis and others consistently show that geographically diverse generation can reduce periods of extremely high and low generation, price volatility and negative-price periods, while potentially reducing the need for additional grid capacity.

The map shows that wind resources in western and northern Scotland, deeper waters east of Scotland and the Celtic Sea have different generation profiles from the existing wind fleet concentrated in the southern North Sea, providing a more complementary source of generation. For FLOW, this highlights the wider system value of developing deeper-water resources: diversifying where offshore wind is generated can help reduce reliance on a single weather pattern and strengthen the resilience of the UK's future electricity system.

These system benefits are not fully captured by current methods for calculating LCOE and allocating CfDs, which focus primarily on the volume and cost of electricity generated rather than on when it is most useful or its wider balancing value. Aurora Energy Research's analysis for RenewableUK highlights this distinction between LCOE and total system cost, which also captures wholesale market, balancing, capacity market and network costs.



Red areas show the highest correlation with the existing wind fleet, with wind resources more complementary as correlation decreases.

7 International export

The UK has a narrow window to turn its early lead in FLOW into a lasting export advantage. Maintaining momentum, including through the upcoming demonstration projects, will help UK companies build the expertise and supply chains needed to compete as the global FLOW market develops.

Unlike fixed-bottom offshore wind, which is largely limited to shallow waters, FLOW can unlock vast areas of deeper-water coastline, opening a much larger global market for offshore wind.

Internationally, markets are already moving from demonstration and pre-commercial projects towards early commercial deployment, with France and Norway advancing projects of several hundred MWs. Emerging pipelines and auction rounds are also developing in Europe (Italy and Spain) and Asian markets (Japan and South Korea). The USA, which would have been both a major market opportunity and a competitor, has been in flux due to the current administration's hostile stance towards new energy technologies.

This creates a narrow opportunity to turn UK deployment into an export advantage. Moving quickly to demonstrate cost reduction and scalable technology in UK waters will give companies the reference projects, supply-chain experience and technical expertise needed to compete as markets across Europe, Asia and beyond develop. The Floating Offshore Wind Taskforce estimates that the UK could generate £38bn in GVA by 2050, £22bn of which would come from exports.

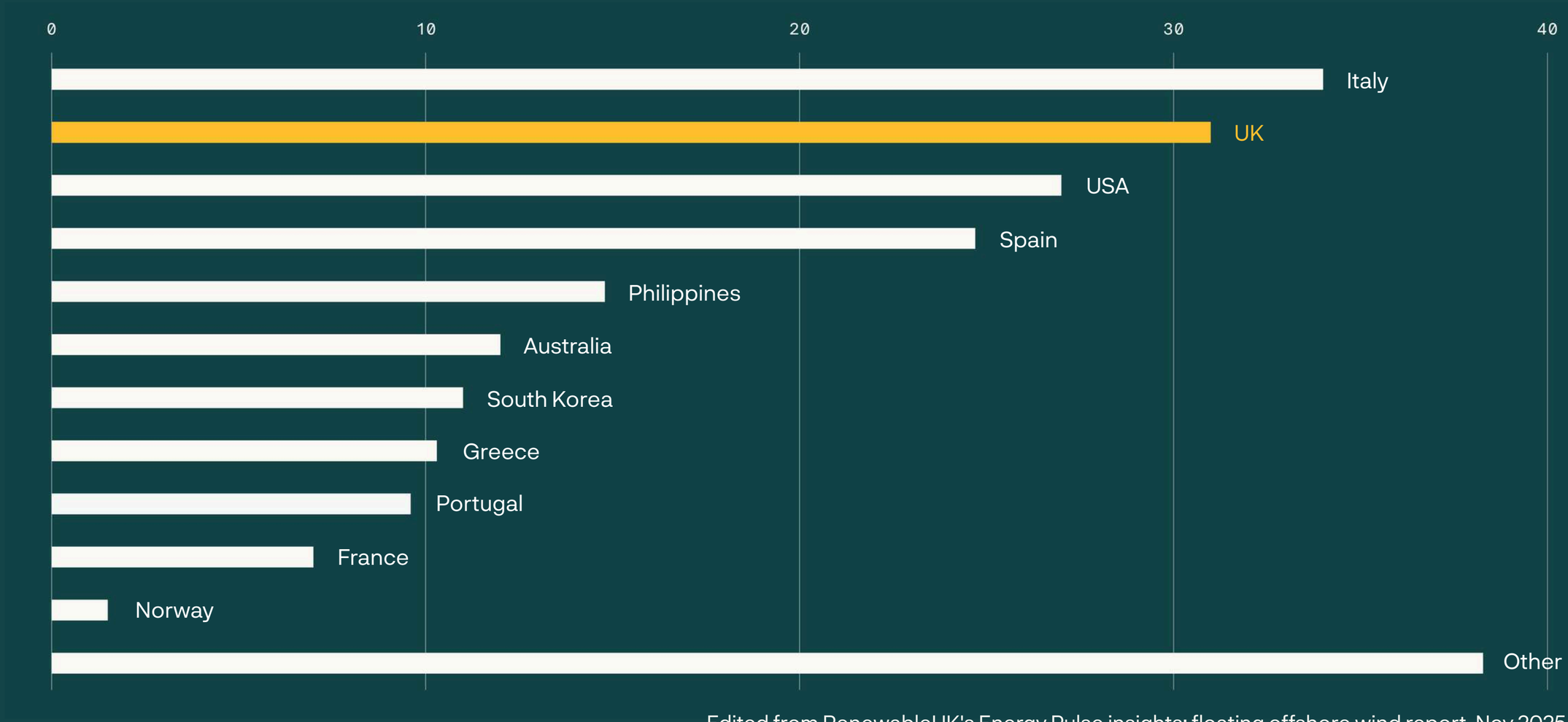
Therefore, the prize is not simply a leading position in the market, but the capability to compete for a much larger international market as floating wind moves towards commercial scale. If UK deployment loses momentum, other countries will build the supply chains and expertise needed to compete internationally first, reducing opportunities for UK companies and risking them competing from behind in a market the UK helped pioneer.

£22bn

Amount in GVA the UK could generate from exports by 2050, according to the Floating Offshore Wind Taskforce

The UK has the second largest FLOW pipeline in the world

At 28.5 GW, the UK's FLOW pipeline is second only to Italy. However, where Italy's pipeline is predominantly in early development, 4.5 years on from Scotwind, UK projects are already moving through consenting. Both INTOG and Celtic Sea demonstrator projects have secured CfDs, making the UK the most credible near-term market for FLOW.



Edited from RenewableUK's Energy Pulse insights: floating offshore wind report, Nov 2025

8 Recommendations 1/2

Use the first SSEP to send a clear, positive signal on the UK's commitment to FLOW

Lead: DESNZ, NESO

The first SSEP should confirm FLOW's strategic role in delivering a resilient, low-carbon energy system and provide investors and the supply chain with confidence that commercial deployment remains a long-term priority, while informing the CSNP.

Align the SSEP with the policy and market levers already supporting FLOW

Lead: DESNZ, NESO, Crown Estate Scotland, The Crown Estate

The SSEP should bring together existing policy and market mechanisms – projects that already have seabed leases, future seabed leasing, CfDs, the CIB, network reinforcement and planning reform – into a coherent deployment pathway, ensuring these measures reinforce rather than undermine each other.

Recognise the whole-system value of FLOW in the SSEP

Lead: DESNZ

The first iteration of the SSEP and subsequent updates should recognise the benefits of the more geographically diversified offshore wind portfolio that FLOW can provide. Improved energy resilience and reduced balancing costs contribute to a more secure, resilient and lower-cost electricity system and should be reflected.

Publish a shared, explicit commitment to FLOW across UK, Scottish and Welsh government strategic plans

Lead: UK, Scottish and Welsh governments, English regions

UK, Scottish and Welsh governments' commentary accompanying the SSEP should recognise the FLOW opportunity and reaffirm a shared commitment to its development across respective strategic plans. Clear and coordinated support for technology development, skills, ports, supply chain and infrastructure build-out will give investors the confidence; fragmentation risks investment and supply chain development moving elsewhere.

8 Recommendations 2/2

Develop a coordinated framework to drive FLOW cost reduction

Lead: DESNZ

DESNZ and industry should use FLOWEX to develop a coordinated cost-reduction framework, identifying the key cost drivers and interventions to accelerate commercialisation. Cost reduction comes through targeted innovation and learning from deployment, supply chain scaling and operational experience; early deployment should therefore accelerate learning and inform future policy and market support.

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