

# Floating Wind: Anchoring the next generation offshore

how the UK's engineering prowess and exceptional natural resources give us a head-start in the race for a £1 trillion global floating wind energy industry



# Foreword

Ed Miliband, Secretary of State for Energy Security and Net Zero



Floating offshore wind is at the heart of the government's mission to make Britain a clean energy superpower. By leading the world in this cutting-edge technology, we can speed up the transition to homegrown clean energy, increasing our energy security, creating good jobs and building a new industry for our country.

Our National Wealth Fund will invest in port infrastructure to support the floating offshore wind rollout. And the government is laser-focused on unblocking the barriers to investment in clean energy, whether its planning, grid, supply chains or skills.

As we build a thriving floating offshore wind industry, we must create good jobs and build supply chains here in Britain. The government is not neutral about where things are made. We want the future to be made and built in Britain. And we are determined to use the skills and experience of our North Sea workforce in these new industries to ensure they are the people who power our clean energy future.

In our first few months in office the government has moved at pace to deliver our mission. We've already lifted the onshore wind ban in England, consented large amounts of solar, launched Great British Energy and delivered the most successful renewables auction in British history.

This report sets out how we can take the next steps to win the global race for floating offshore wind, and the government will consider its recommendations carefully. The Floating Offshore Wind Taskforce shows the power of government and industry working together. We look forward to continuing this partnership as we seize this opportunity for Britain.

From our natural energy resources to our significant engineering expertise, Britain is well-placed to get ahead in this new technology. We have a world-leading floating offshore wind pipeline with 25GW of projects in development in Scotland and up to a further 4.5GW due to be awarded in the Celtic Sea next year. This year's record-breaking renewables auction secured the largest floating wind farm ever to reach market.

However, we need to go further and faster to unlock Britain's potential. That's why we've established Great British Energy, which will work with the private sector to speed up deployment of leading-edge energy technologies like floating offshore wind, including through its partnership with The Crown Estate.

This document draws on analysis carried out by the UK FLOW task force and published in the following reports:



UK 2025 Offshore Wind Deployment Scenarios



Floating Wind Cost Reduction Pathways



Tilt the balance: how the UK can capture opportunities in floating wind

# Executive summary

Offshore wind is already one of the most exciting growth stories of the energy transition and the UK has established itself as a global leader. As projects move further from shore, the deeper waters require a new wave of floating wind technology. Designing, building, installing and operating floating offshore wind projects for the UK and around the world presents a major opportunity for British industry. With enough seabed already leased for up to 24GW of capacity, the UK is the natural home of the global floating offshore wind industry for three reasons:

## Abundant, secure, clean British energy supply

The UK has some of the best offshore wind energy resources on Earth and by 2050 floating turbines could provide:

- ▶ 1/3 of the UK's offshore wind capacity
- ▶ 175TWh/year of clean, homegrown electricity supply, boosting energy security and helping to achieve net zero
- ▶ more electricity to British homes than natural gas provides today

## Built on UK National Strengths

The UK currently has first-mover advantages in the offshore wind sector that make it the natural home for a globally competitive floating offshore wind industry:

- ▶ world-leading track record of offshore wind investment and build-out
- ▶ unrivalled breadth and depth of industrial capabilities drawing from the UK's strengths in offshore oil and gas, defence and fixed offshore wind

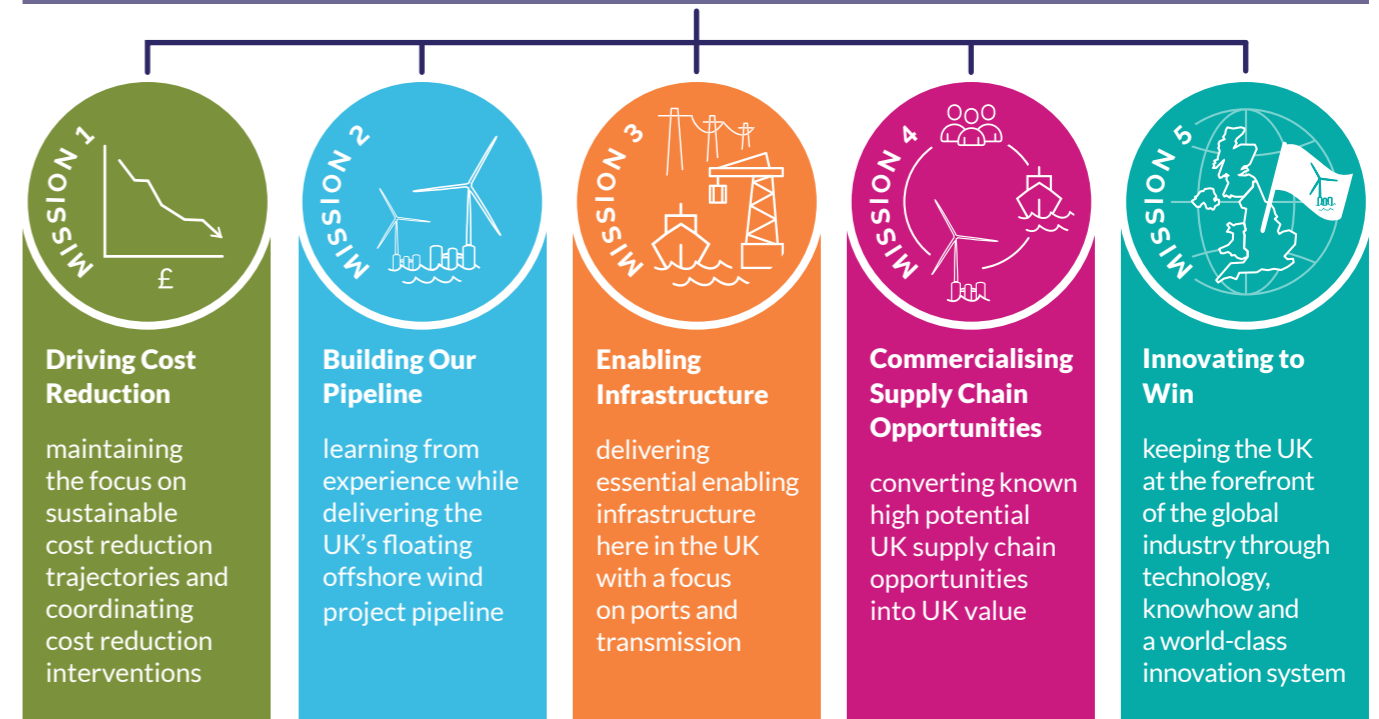
## A new British Industry

Floating offshore wind is an opportunity to anchor a brand new British industry, creating jobs and catalysing economic activity in all parts of the country. Floating wind offers:

- ▶ 30% cost reduction by 2030
- ▶ A global market worth £1 trillion by 2050
- ▶ £47 billion contribution to UK GVA from domestic supply and exports by 2050
- ▶ 97,000 jobs across the UK by 2050

## UK Floating Offshore Wind

Five floating offshore wind industrial missions define the opportunity to write the next chapter of the UK's industrial story:





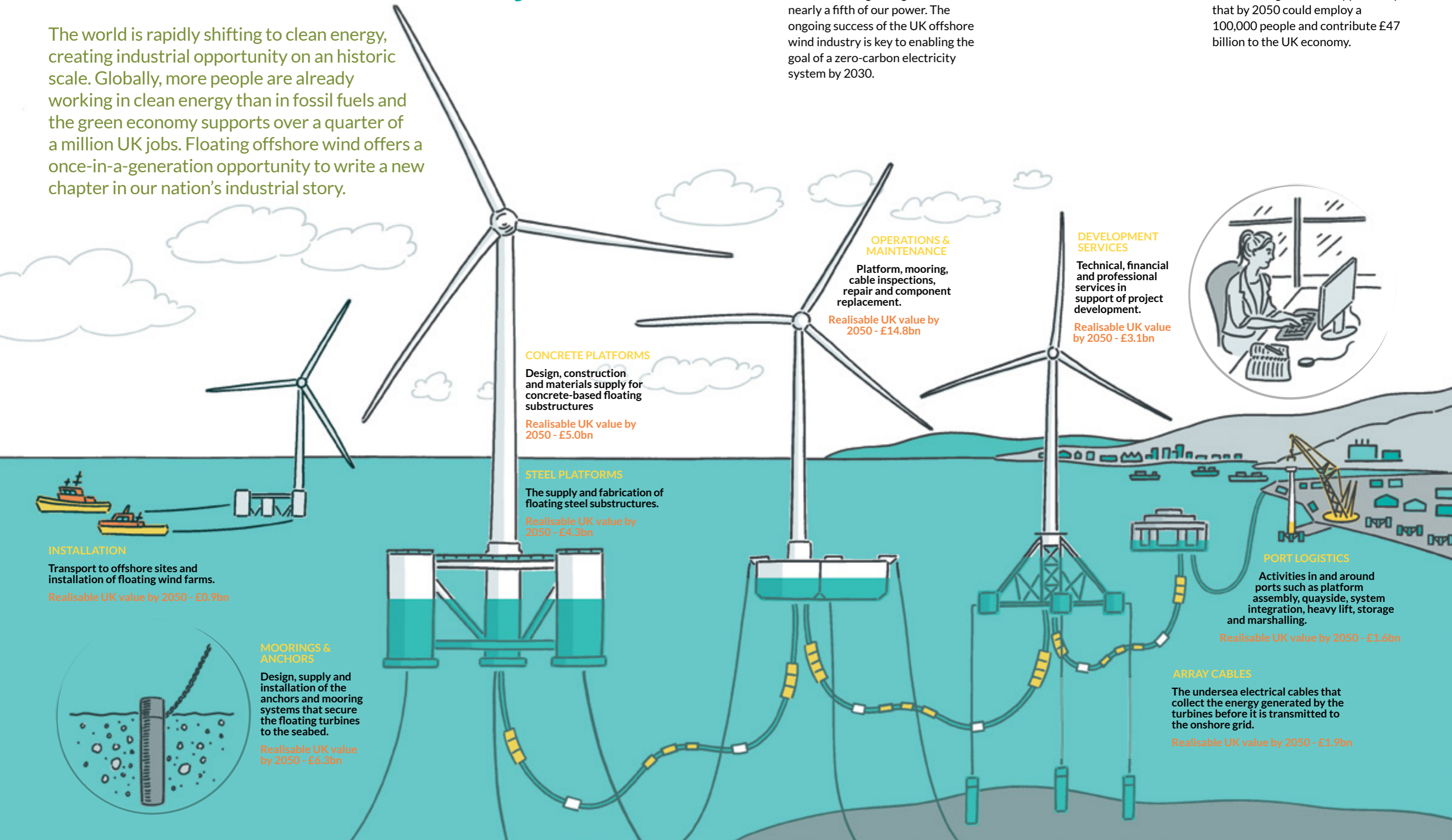
# A Vision of the UK as the natural home of the floating offshore wind industry

The world is rapidly shifting to clean energy, creating industrial opportunity on an historic scale. Globally, more people are already working in clean energy than in fossil fuels and the green economy supports over a quarter of a million UK jobs. Floating offshore wind offers a once-in-a-generation opportunity to write a new chapter in our nation's industrial story.

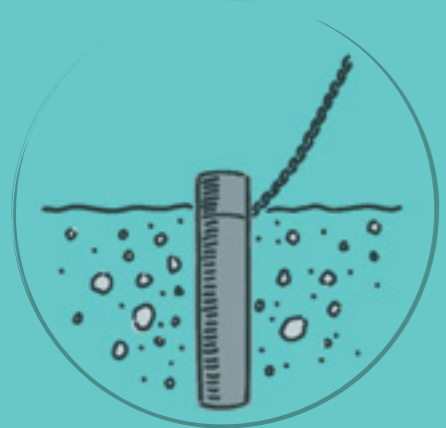
The UK has already established itself as one of the best places in the world to invest in renewable energy infrastructure, with more offshore wind capacity than almost anywhere else. Since 2016, the industry has invested over £50bn in new UK offshore wind projects and the existing fleet generates nearly a fifth of our power. The ongoing success of the UK offshore wind industry is key to enabling the goal of a zero-carbon electricity system by 2030.

Today, more than 30,000 people work in the UK's bottom-fixed offshore wind sector and this could grow to over 100,000 by 2030. The next generation of floating wind technology is a crucial part of the industrial opportunity.

Our track record of installing and operating fixed offshore wind turbines, our fabulous offshore wind energy resource and our existing industrial capability mean that the UK is the natural home for the global floating offshore wind industry. Floating offshore wind is a once-in-a-generation opportunity that by 2050 could employ a 100,000 people and contribute £47 billion to the UK economy.



**INSTALLATION**  
Transport to offshore sites and installation of floating wind farms.  
Realisable UK value by 2050 - £0.9bn



**MOORINGS & ANCHORS**  
Design, supply and installation of the anchors and mooring systems that secure the floating turbines to the seabed.  
Realisable UK value by 2050 - £6.3bn

**CONCRETE PLATFORMS**  
Design, construction and materials supply for concrete-based floating substructures  
Realisable UK value by 2050 - £5.0bn

**STEEL PLATFORMS**  
The supply and fabrication of floating steel substructures.  
Realisable UK value by 2050 - £4.3bn

**OPERATIONS & MAINTENANCE**  
Platform, mooring, cable inspections, repair and component replacement.  
Realisable UK value by 2050 - £14.8bn

**DEVELOPMENT SERVICES**  
Technical, financial and professional services in support of project development.  
Realisable UK value by 2050 - £3.1bn



**PORT LOGISTICS**  
Activities in and around ports such as platform assembly, quayside, system integration, heavy lift, storage and marshalling.  
Realisable UK value by 2050 - £1.6bn

**ARRAY CABLES**  
The undersea electrical cables that collect the energy generated by the turbines before it is transmitted to the onshore grid.  
Realisable UK value by 2050 - £1.9bn

# Abundant, secure, clean British energy supply

## A major contributor to the UK's energy needs

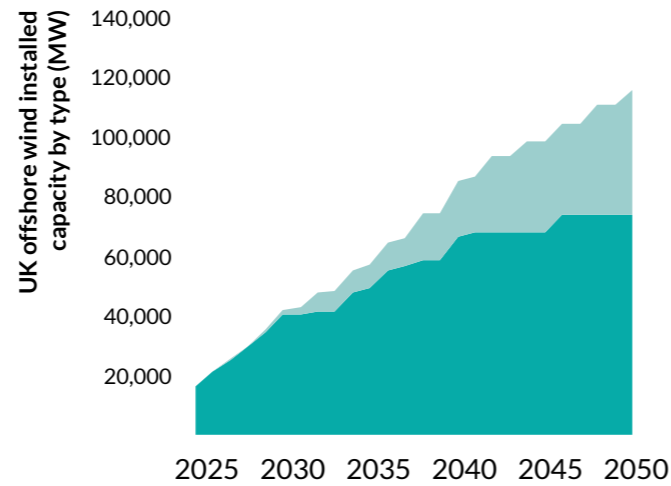
Demand for electricity is expected to more than double over the coming decades as we electrify heat, transport and industry<sup>2</sup>. To meet this growth, renewable power sources will need to scale-up even faster than we have achieved over the last two decades.

Total offshore wind capacity is on course to reach 115GW or more by 2050<sup>3</sup>, requiring an acceleration in the build out of fixed offshore wind as well as the addition of a new generation of floating wind projects.

By 2050, up to 40GW of floating turbines could be producing 175 terawatt hours (TWh) per year<sup>4</sup>. This volume of clean, secure, domestic energy supply is equivalent to 60% of total UK electricity generation in 2023<sup>5</sup> and in 2050 could be enough to power every home in the country, even with electrification of home heating and widespread electric vehicle charging<sup>6</sup>.

But floating wind can be much more than an energy source. British engineering excellence in the maritime, defence and offshore energy industries give the UK a head start in the industrialisation of a new global growth sector. Just building out the UK pipeline of floating projects needed to reach net zero could contribute £25 billion to the UK economy<sup>7</sup> and employ 100,000 people. As the global market scales up, firms across the UK are already poised to capture export markets worth another £22 billion<sup>8</sup>.

Building out the UK pipeline of floating projects could contribute £25 billion to the UK economy and employ 100,000 people.



In a 115GW offshore wind portfolio in 2050, more than one-third of the generating capacity could be floating<sup>1</sup>.

■ Floating offshore wind  
■ Fixed offshore wind

## Deeper water, stronger winds

There are already more than 2,000 offshore wind turbines with a total capacity of 15GW generating in UK waters<sup>9</sup>, the vast majority of which are fixed to the seabed on rigid structures. Much more is needed to achieve the goal of a secure, net zero energy system.

Installing offshore wind turbines using fixed foundations becomes more challenging as water depth increases. Deep water sites further offshore have stronger, more consistent winds and produce more electricity, but are too deep for fixed turbines.

The ability to access higher wind speeds, further from shore means that floating wind could unlock enough potential power to meet the world's total electricity demand 11 times over<sup>10</sup>.

In British seas alone, floating turbines open up a potential resource of over 1,500 Terawatt hours (TWh) per year<sup>11</sup> – far beyond our needs to deliver a secure, net zero energy future for the UK. As shown in the map below, this resource is concentrated in Scotland, the North Sea, Celtic Sea and Atlantic coast.

## Project pipeline

The UK has the most advanced pipeline of floating projects globally, representing a huge and immediate opportunity. However, a lack of suitable port capacity and strong competition from European suppliers means that if development of industrial capacity and infrastructure are not prioritised, the UK risks missing out on the full economic potential from floating wind.

By delivering our Offshore Wind Industrial Growth Plan<sup>12</sup>, with coordinated action from industry and governments, we can realise the industrial opportunity and secure investment into a globally competitive UK floating wind supply chain.



Potential areas for fixed offshore wind



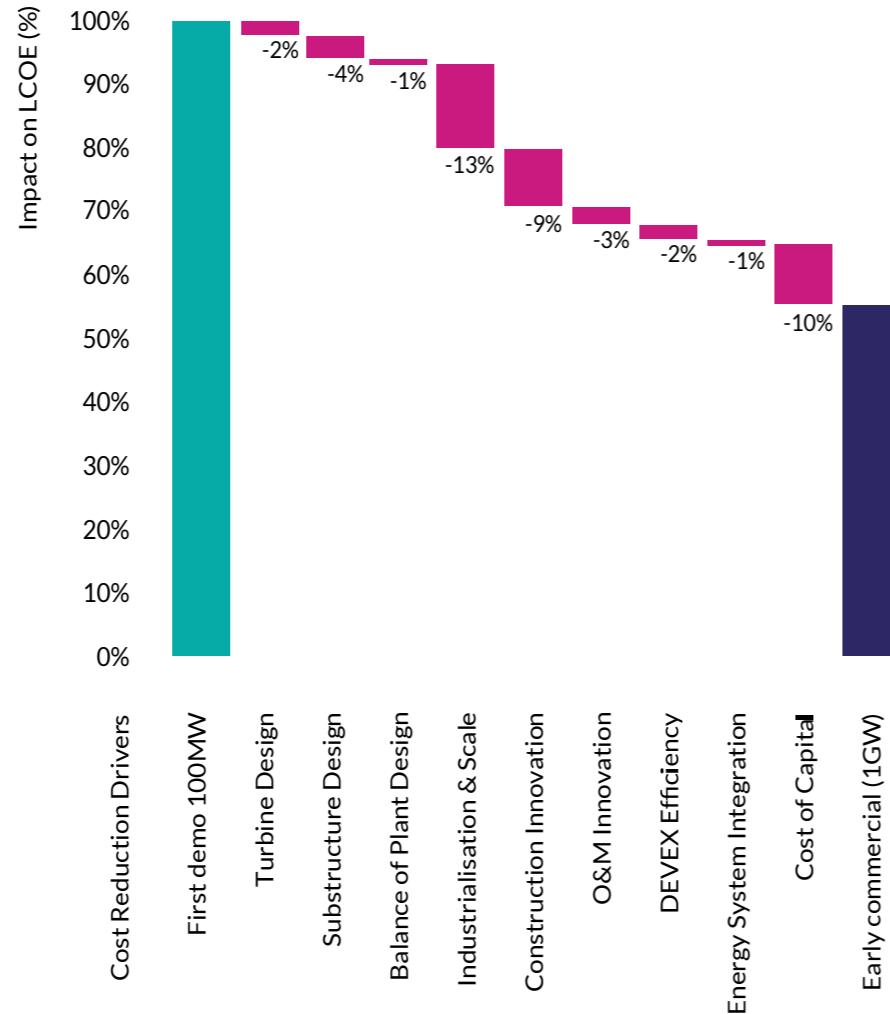
Potential areas for floating offshore wind



# Built on UK National Strengths

## Sustainable cost reduction through scale, innovation and efficiency

Realising the full benefits of floating offshore wind requires that costs fall sustainably over time as the technology matures. Cost reduction in renewable energy technologies is an established and well understood process. A general pattern of reducing costs through innovation, industrialisation and scaling of manufacturing, supported by dependable market demand and deployment, has been established and repeated across renewable technologies. Through the leasing of individual seabed sites in England & Wales, as well as wider Scotwind and INTOG leasing in Scotland, the UK has a pipeline of projects that can help accelerate our progress on this trajectory.



Detailed analysis carried out by the UK Floating Offshore Wind Task Force<sup>14</sup> identifies the key drivers of reductions in the Levelised Cost of Electricity (LCOE).

There are three prerequisites to unlocking this floating offshore wind cost-trajectory:

- 1 Stepping Stones:** The deployment of 'stepping-stone' projects in UK waters between now and 2030 to reduce risk and enable industrialisation, alongside larger INTOG projects.
- 2 Learning by Doing:** Over the next decade, global build-out of floating offshore wind should enable the learning needed to reduce costs through volume production, industrialisation and technology investment.
- 3 Lifecycle Innovation:** Ongoing technology innovation and optimisation to improve performance and efficiency.

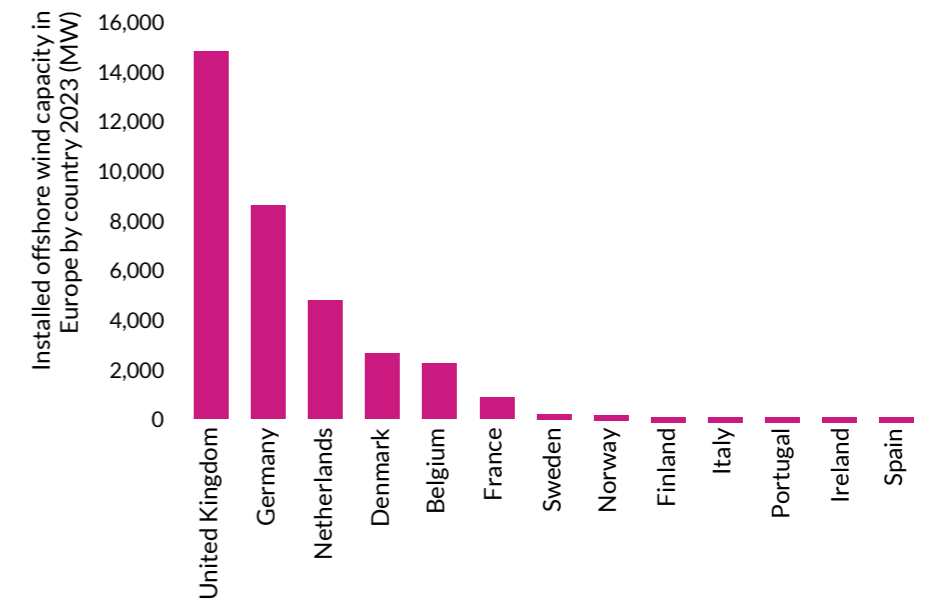
With these prerequisites in place along with the necessary enabling infrastructure such as ports and transmission, floating offshore wind can target a CfD price of under £100/MWh in 2030, and below £70/MWh by 2050<sup>13</sup>.

Our Vision of the UK as the natural home of the global floating offshore wind industry is based on the unique competitive advantages over markets racing to catch-up:

- a world-leading track record of offshore wind investment and build-out
- one of the strongest offshore wind energy resources on Earth
- an unrivalled breadth and depth of industrial capability and innovation

## An enviable track-record in offshore wind deployment

Over the last two decades, the UK has successfully created a stable, predictable policy framework that has unlocked the investment needed for the UK to install more offshore wind generating capacity than anywhere outside China<sup>15</sup>. Since 2016, the industry has invested over £50bn in new offshore wind projects and supports over 30,000 jobs<sup>16</sup>. The UK also has more floating offshore wind capacity under development than anywhere else<sup>17</sup>.



### UK FLOATING OFFSHORE WIND CASE STUDIES

#### Kincardine – the UK in the lead on floating wind

Off the coast of Aberdeen, Kincardine is largest grid-connected floating offshore wind farm in the world. The 50MW project came online in 2021, powered by five of the most powerful turbines ever installed on floating platforms. The Kincardine floating offshore windfarm is capable of powering nearly 35,000 homes in Scotland.

## UK Wind Resource

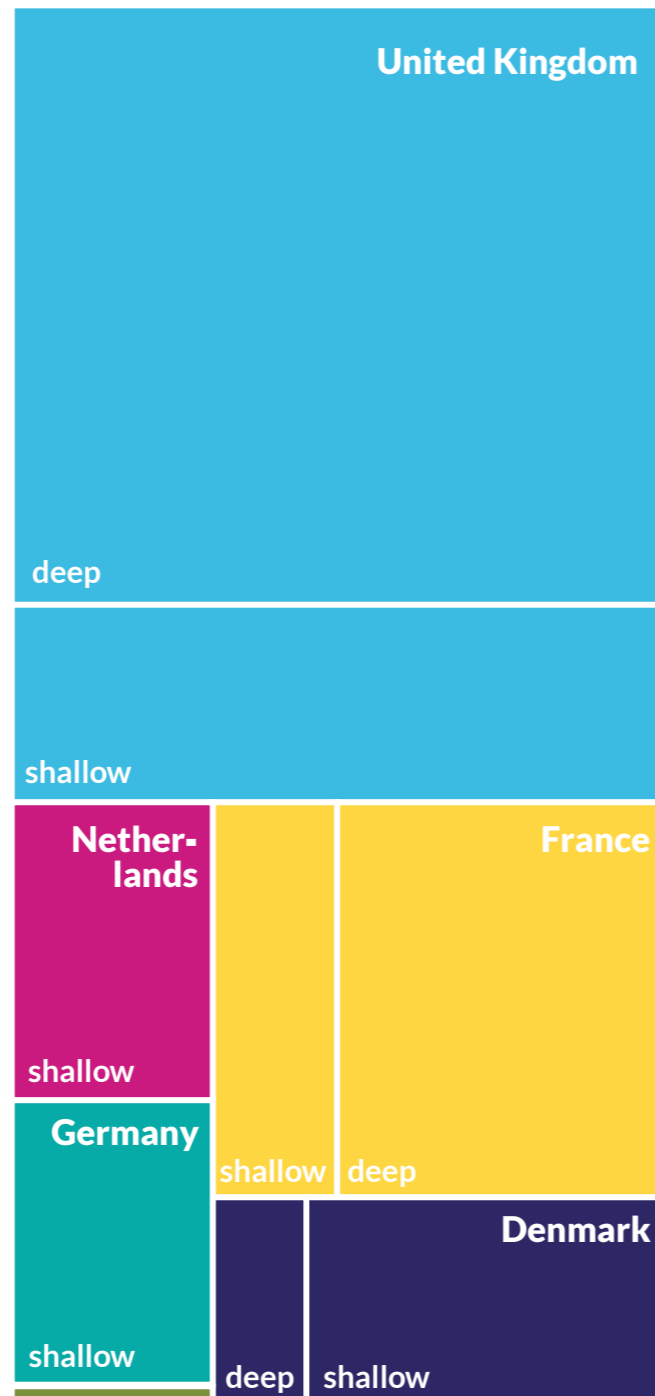
The UK has exceptional offshore wind resources. In fact, we have more potential wind resource than the next five windiest European countries combined.

The practical resource available to the UK from floating wind is over 1,500 TWh per year – more than four times greater than projected future electricity demand<sup>18</sup>.

The UK also stands apart as having a greater share of its offshore wind potential in deep water (>50m) than any of its European peers<sup>19</sup>.

Technical offshore wind potential in six leading European offshore wind nations (ESMAP)

- UK
- Netherlands
- Germany
- Belgium
- France
- Denmark



## The industrial knowhow and world class innovation ecosystem

UK companies in our existing offshore wind, oil & gas, maritime and defence industries already have many of the skills, experience and facilities needed to construct floating offshore wind farms.

Floating offshore wind is particularly well suited to the UK's industrial expertise. Research commissioned by the Floating Offshore Wind Task Force<sup>20</sup> shows that hundreds of UK-based firms are already capable of providing some of the most important components of a floating offshore wind project. This pre-existing capability gives the UK a significant advantage compared to other European countries. The capability and skills overlap between the existing UK oil and gas sector and floating offshore wind is 60%, providing a major transition opportunity for workers and firms as North Sea fossil fuel production declines<sup>21</sup>.

Technological innovation is essential for ensuring cost-effective deployment of floating wind and capturing and maintaining the UK's comparative advantage. The UK already has a world-class innovation system dedicated to tackling the challenges of mass deployment of offshore wind and is brilliantly placed for addressing the challenges of the growing global floating wind sector. Universities, research institutes, innovation agencies and private companies are already working hard on these challenges and our Industrial Growth Plan identified floating foundation design as a priority for UK technology leadership, leveraging our innovation networks.

One of the most exciting aspects of the UK floating offshore wind industry is its geographical diversity. The valuable wind resources found all around our coasts is matched by industrial capability the length and breadth of the country.



### UK FLOATING OFFSHORE WIND CASE STUDIES

#### JDR: applying offshore oil and gas expertise to floating offshore wind

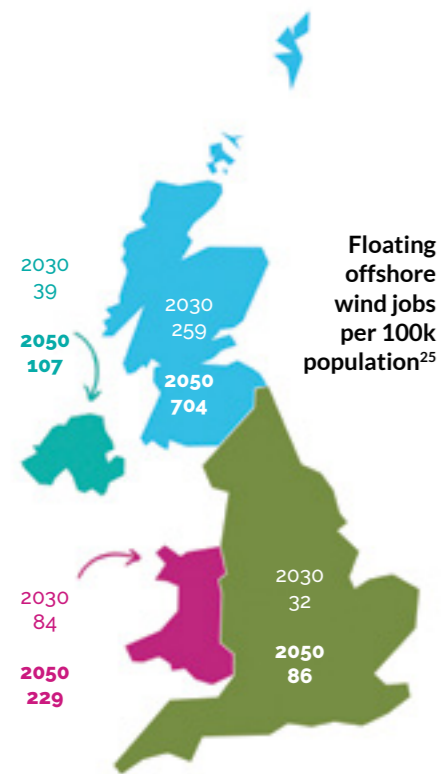
JDR is a world-leader in sub-sea power cables and systems. Headquartered in the UK, it has more than 500 staff worldwide. JDR has a background in the offshore oil and gas industry but the company entered the offshore wind sector in 2006, opening a dedicated facility in Hartlepool in 2009 to supply array cables to the Greater Gabbard and London Array offshore wind farms.

JDR has continued to develop its offer to the offshore wind industry, launching a 66kV array cable and recently upgrading the Hartlepool facility to manufacture cables up to 14km in length. The company is developing new, high-voltage cable products, also to be manufactured in Hartlepool and a new facility at Cambois, near Blyth Northumberland, creating more than 170 new jobs.

JDR has supplied dynamic cables to key demonstration floating wind projects and is developing a new 132kV array cable for future floating wind projects.



# A new British Industry



Floating offshore wind is a once-in-a-generation industrial and economic opportunity, and the UK is uniquely well-placed to benefit from first-mover advantage.

The UK's existing industrial capability means that, by 2030, 58% of the capital spend on British wind farms could happen in the UK<sup>22</sup>. With this level of British supply, the gross value added (GVA) contribution to UK GDP from the direct impacts of building UK floating wind farms and the indirect impacts from activity in the supply chain would reach £25bn by 2050. The number of full time jobs associated with this domestic capital spend could rise to 36,000 in 2030 and 97,000 in 2050<sup>23</sup>.

The geographic diversity of relevant UK industrial capability means that employment will also be spread across the country. Weighted for population size, the primary focus will be in Scotland, followed by Wales and Northern Ireland, reflecting the geographical focus of floating wind deployment and the location of existing industries with applicable expertise.

The significant overlap between the UK's offshore oil and gas expertise and the needs of floating offshore wind is highly significant as investment and employment associated with fossil fuel industries decline over the coming decades.

Analysis of the UK's competitive advantage suggests that British companies are already well placed to capture a further £22bn of this market in the form of goods and services export. For the UK oil and gas sector, floating offshore wind offers the greatest opportunity within the energy transition for UK-based companies to secure export revenues, greater than either hydrogen or carbon capture and storage (CCS)<sup>24</sup>.

**97,000**

jobs in floating offshore wind by 2050

**£1 trillion**

global opportunity to 2050

**£47 billion**

potential contribution to UK GVA from domestic supply and exporting

## Where the UK has an advantage

Through a detailed bottom-up analysis of the demand for capabilities from the future floating offshore wind industry and an in-depth study of the UK's existing strengths<sup>27</sup>, eight areas have been identified where the UK is, or could be, a competitive supplier at home and in export markets.

## Enabling our first-mover advantage

The UK is very well placed to benefit from the economic activity arising from floating offshore wind build-out, but seizing the opportunity demands that we make the most of our first-mover advantage.

While we have the most advanced pipeline of floating projects globally, with 24GW of seabed leases in place, we have a relative lack of suitable UK port capacity. Strong competition from European suppliers means that if development of industrial capacity and infrastructure are not prioritised, supported and scaled up, UK wind farms could conceivably be built and installed with many high-value components never having touched British soil. In this scenario, the GVA impact of delivering UK projects would be reduced by £2.6bn by 2050 and support 25,000 fewer jobs. The long-term export opportunity could be even more severely reduced as key supply chains are established overseas.

1. MOORINGS & ANCHORS	Design, supply, installation of the anchors and mooring systems that secure the floating turbines to the seabed.	£6.3bn
2. CONCRETE PLATFORMS	Design construction and materials supply for concrete-based floating substructures.	£5.0bn
3. STEEL PLATFORMS	The supply and fabrication of floating steel substructures.	£4.3bn
4. ARRAY CABLES	The undersea electrical cables that collect the energy generated by the turbines before it is transmitted to the onshore grid.	£1.9bn
5. PORT LOGISTICS	Activities in and around ports such as platform assembly, quayside, system integration, heavy lift, storage and marshalling.	£1.6bn
6. INSTALLATION	Transport to offshore sites and installation of floating wind farms.	£0.9bn
7. OPERATIONS & MAINTENANCE	Platform, mooring, cable inspections, repair and component replacement.	£14.8bn
8. DEVELOPMENT SERVICES	Technical, financial and professional services in support of project development.	£3.1bn

Realisable UK value by 2050<sup>26</sup>



## UK FLOATING OFFSHORE WIND CASE STUDIES

### PICT Offshore – elevating crew transfer

Founded in Inverkeithing, Fife in 2019, Pict Offshore specialises innovative access and lifting solutions. The 'Get Up Safe' personnel access system uses a motion compensated hoist that allows technicians to safely transfer from the moving deck of a crew transfer vessel onto the turbine foundation without the need to climb a fixed ladder. Four commercial scale offshore wind projects in the UK and USA already rely on the system, increasing crew safety and allowing for simplified foundation design. Between 2019 and 2023 Pict grew from 5 to 40+ employees and expects its turnover of around £10m at the end of 2023 to more than double by 2030. It is now working to develop new applications including cargo lifting and validating the system's use on floating wind foundations.

# Our Missions

Floating offshore wind is one of the greatest industrial opportunities of the energy transition and the UK is ready to take the lead.

By drawing on our exceptional wind energy resources and legacy of maritime innovation and engineering, the UK can and should lead the world in this new technology, driving economic growth while delivering energy to millions of homes and businesses.

If we do not act soon enough to support the creation of a UK supply chain, British firms will not be able to develop the experience or attract the investment needed to scale up and take advantage of the global opportunity.

Industry and Governments are taking steps to lay the foundations for success. Through the Floating Offshore Wind Centre of Excellence and other Joint Industry Projects, the industry is already supporting strategic programmes on key technical, environmental and cost reduction challenges.

A new partnership announced will bring Great British Energy's ability to invest with The Crown Estate's internationally recognised expertise and management of the seabed. This new partnership will support the accelerated delivery of clean energy infrastructure, including new floating technology.

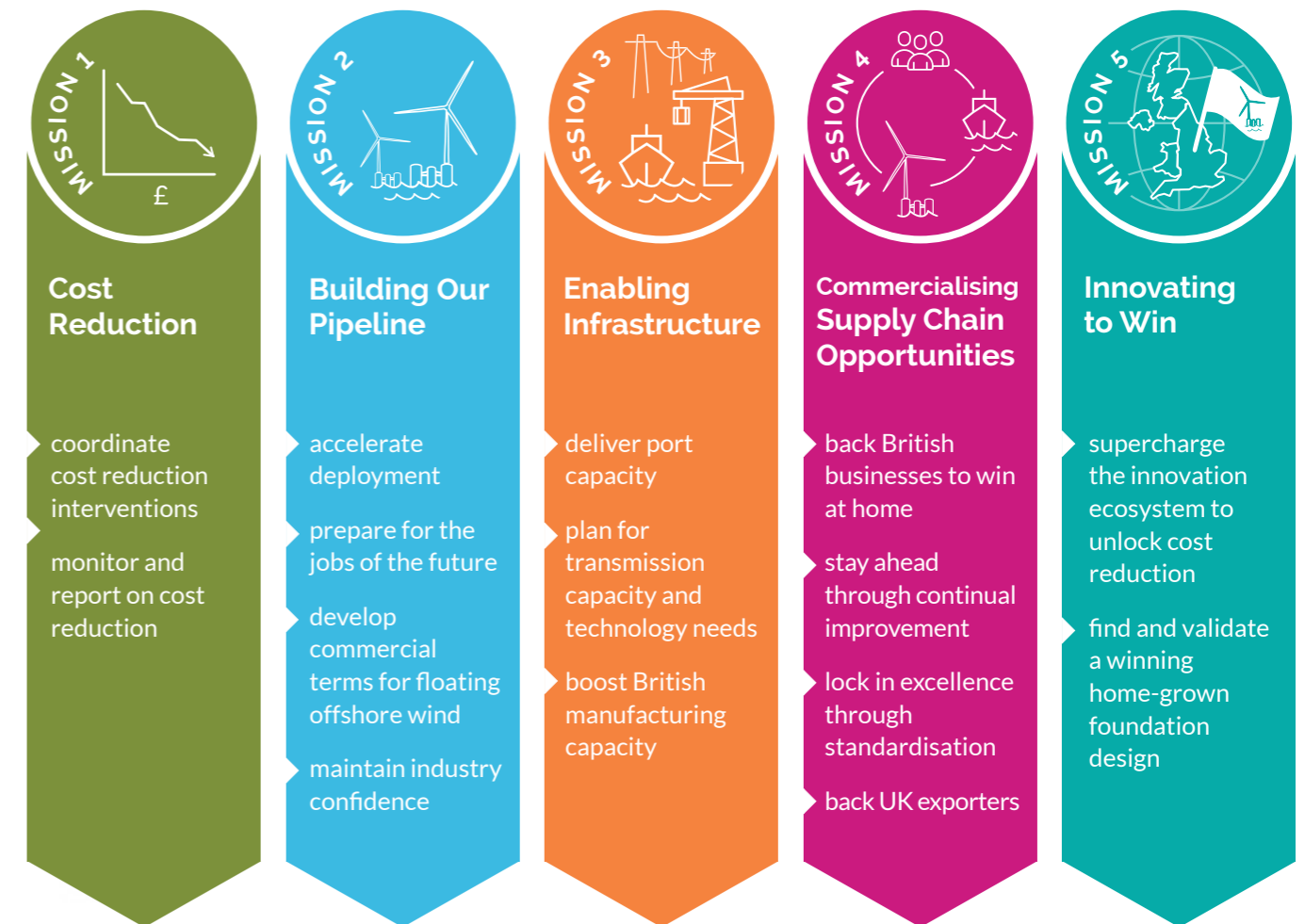
Both developers and public sector stakeholders are working closely with potential supply chain participants to begin to build the capacity and capability required, both through programmes such as the Offshore Wind Growth Partnership and through early procurement activities.

The FLOWMIS programme has identified Port of Cromarty Firth and Port Talbot for support in developing our floating wind industry, while Ardersier Port has secured funding for redevelopment including £100m from Scottish National Investment Bank and UK Infrastructure Bank. In Scotland, developers are collaborating through the Strategic Investment Model to bring forward new investment in ports and factories and Sumitomo Electric has broken ground on its £350m subsea cable manufacturing plant at Port of Nigg.

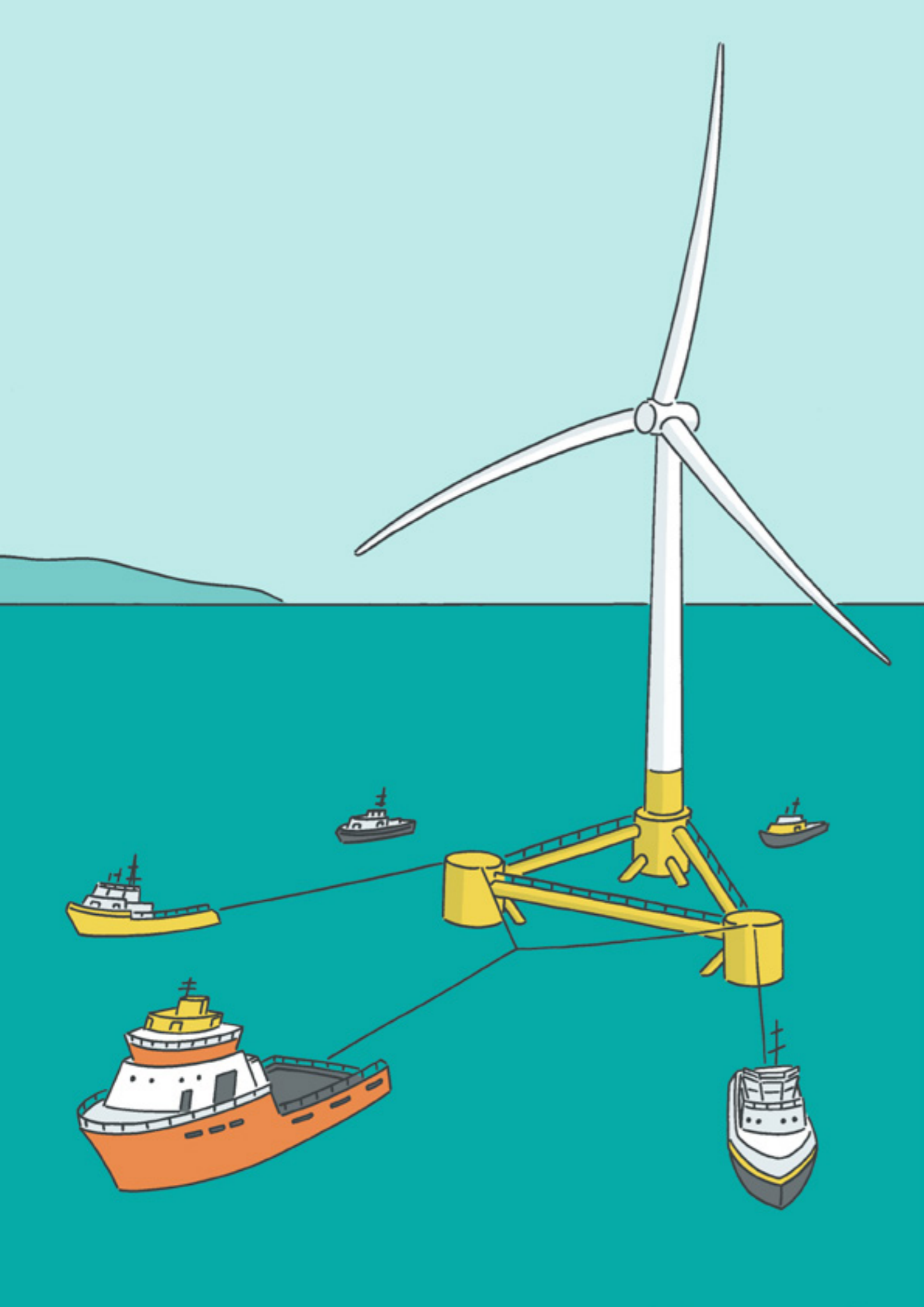
Our Vision of the UK as the natural home of the global floating offshore wind industry is both compelling and achievable. It requires, however, a step-change in pace and scale of action, as well as greater collaboration across the UK.

The five industrial missions set out in this section are designed to guide, inspire and coordinate what could be this century's biggest British industrial success story.

## Five missions to establish the UK as the home of the global floating offshore wind industry.







# 1 MISSION 1: Driving Cost Reduction

“...maintaining the industry’s focus on cost reduction trajectories and coordinating cost reduction interventions”

Consistent, reliable cost reduction is fundamental to the deployment and industrialisation of floating offshore wind in the UK. Our new analysis shows that if we are successful, we can target a CfD clearing price of under £100 in 2030 - a 30% reduction on the 2024 price. Significant cost reduction will come from economies of scale as UK and global markets ramp up deployment, but targeted interventions can steepen the cost reduction curve. Ensuring timely interventions to spur cost reduction and the ability to accurately monitor cost reduction is, therefore, the first priority.

## Project 1a: coordinate cost reduction interventions

Building investor confidence through ‘stepping-stone’ projects, allowing reduced cost of capital is key, alongside development of larger INTOG projects. Additionally, optimisation of infrastructure, processes and technical systems through testing and R&D programmes, as well as technology maturation goals identified in the Industrial Growth Plan, can accelerate the cost reduction.

## Project 1b: monitor and report on cost reduction

Initiate a floating offshore wind cost reduction monitoring programme, tracking progress and relative impact of cost reduction levers including technology development initiatives, such as those identified in the IGP, as well as wider macro-economic trends. As the UK gains practical experience of floating offshore deployment and operation, it is essential for cost reduction that the lessons learned are captured, shared widely and are implemented in subsequent projects.



### MISSION MILESTONES:

- 2030: CfD clearing price below £100/MWh
- 2050: CfD clearing price below £70/MWh

# 2 MISSION 2: Building Our Pipeline

“...learning from experience while delivering the UK’s floating offshore wind project pipeline”.

In addition to two projects already in operation, the UK currently has more floating offshore wind projects under development than anywhere else. Crown Estate Scotland’s (CES) ScotWind and INTOG leasing processes brought forward over 24GW of floating offshore wind capacity. The Crown Estate is expected to conclude lease option agreements for three projects in the Celtic Sea with a total capacity of up to 4.5GW and plans to bring to market up to a further 12GW, of which 4-10GW could be leased by 2030 and in operation from 2035 to 2040. These commercial scale projects will add to the seven stepping stone projects with existing lease options<sup>28</sup>.

Building out the UK’s globally leading pipeline of floating offshore wind projects will enable cost reduction, underpin sufficient volume potential to unlock infrastructure and supply chain investment, enhance competence and secure early mover advantage for British industry.

Pilot projects, demonstration and early industrial-scale projects are essential stepping stones towards commercialisation. A leading UK programme of pilot projects will allow accelerated learning about the technology, supply chain, infrastructure and regulatory processes, de-risk the investment needed to scale up the industry and drive down costs.



UK Floating offshore wind projects under development

SCHEME AND LOCATION	PROJECT TYPE	PROJECTS	CAPACITY
Floating wind test and demonstration, Celtic Sea, Cornwall, Scotland and North East England	Test and demonstration	7	0.6GW
INTOG leasing sites, Scotland	A mix of test and demonstration and commercial scale projects	12	5.4GW
Scotwind commercial project leases, Scotland	Full-scale commercial	14	19.3GW
England and Wales Round 5, Celtic Sea	Full-scale commercial	3	4.5GW

## Project 2a: accelerate deployment

Building out the existing project pipeline demands concerted efforts to accelerate the development timeline and address barriers that may cause unnecessary delays. In the first instance, industry and governments can intensify collaboration to implement ongoing reforms to consenting regimes that will accelerate development timelines. Alongside financial support, predictability and visibility of pipeline development will enable market support mechanisms to be sized and aligned to the scale-up in project size and volumes.

## Project 2b: prepare for the jobs of the future

Floating wind can offer new long-term opportunities for people who want to build our net zero economy; from young people starting off their careers to those those transitioning from fossil fuel industries. Implementation of the OWIC Skills Plan – working with Governments, providers and wider industry stakeholders to deliver regional and national programmes– will support skills development at the pace and scale needed as floating wind ramps up.

## Project 2c: develop commercial terms for floating offshore wind

The efficient allocation of risk between developers, suppliers and other commercial stakeholders is a central challenge for the delivery of the UK’s floating offshore wind pipeline. It is important that contractual frameworks align incentives, support investment and drive cost reduction and OWIC is taking forward work on a sustainable contracting strategy, as recommended by the Offshore Wind Champion<sup>29</sup>.

## Project 2d: maintain industry confidence

The long timescales involved in investment and return mean that confidence in the future of the industry is an important enabler for investment in the supply chain and cost reduction. Key contributors to industry confidence are a stable policy framework, clear and ambitious deployment targets and a consistent, long-term approach to seabed leasing.

### MISSION MILESTONES:

- 3 additional stepping stone pilot projects operational by 2029
- The first full GW-scale project taking final investment decision by 2030



# 3 MISSION 3: Enabling Infrastructure

“...delivering essential enabling infrastructure here in the UK”

Timely availability of physical infrastructure in key locations (ports and transmission) is a prerequisite for growth and for cost reduction. Port infrastructure at industrial scale and through the supply chain unlocks opportunities for UK suppliers to provide a wide range of location-based services, growing investment, good jobs and prosperity around the coast.

## Project 3a: deliver port capacity

To maximise UK activity and reduce the cost of floating offshore wind construction, the UK will need at least three to five ports with capacity to enable industrialised construction activity for GW scale projects. This will require investment of between £3bn and £4bn of public and private investment by 2040<sup>30</sup>. This will require a multi-port strategy and regional clusters of ports, building on the efforts of FLOWMISS, The Scottish Offshore Wind Ports Alliance (SOWPA) and the Strategic Investment Model (SIM).

## Project 3b: plan for transmission capacity and technology needs

Moving energy from the growing fleet of offshore wind farms to homes and businesses requires integrated planning and expansion of the electricity transmission system and commercial availability of high voltage direct current (HVDC) electrical systems that will form the future offshore network. The Holistic Network Design approach and industrial capacity additions identified in the IGP are vital steps to develop an energy system powered by high deployment of floating wind. This must be reflected in the future Strategic Spatial Energy Plan.

## Project 3c: boost British manufacturing capacity

Ensuring the UK has the ability to competitively manufacture and assemble high quality key components, including platforms. This would not only unlock economic benefit, but secure supply of components and services against a background of increasing global demand, supply constraints and localisation requirements. Support for new manufacturing and supply chain activities aligned UK priorities will be a key focus of IGP delivery for industry, governments, investors and wider funding sources.



### MISSION MILESTONES:

- 3-5 industrial-scale port clusters on track for capital investment in 2027-2030
- Transmission capacity in place for major project development by 2030 at the latest
- Increase the manufacturing capacity of UK floating offshore wind industries in line with the recommendations of the Industrial Growth Plan by 2030 at the latest

# 4 MISSION 4: Commercialising Supply Chain Opportunities

“...converting known high potential UK supply chain opportunities into UK value”

Research carried out by the Floating Offshore Wind Taskforce shows that the UK already has strong capability in key areas of the supply chain, especially anchors and moorings, array cables and inspection services<sup>31</sup>. UK expertise in manufacturing for offshore wind and oil & gas substructures, provides a first-mover advantage in floating wind. Targeted actions to support companies, bring new products to market and establish standards can ensure maximal participation of UK companies at home and abroad.

## Project 4a: back British businesses to win at home

There are scores of companies up and down the country ready, or nearly ready, to create value by supplying the floating offshore wind industry. Efforts are needed to map the supplier opportunity, support companies by addressing known challenges and properly reflect the value of UK supply chain in the project development process. Coordination of the range of business readiness support and grant programmes from governments, the Offshore Wind Growth Partnership, SIM, IGP delivery and wider manufacturing/innovation networks will increase impacts for UK firms.

## Project 4b: stay ahead through continual improvement

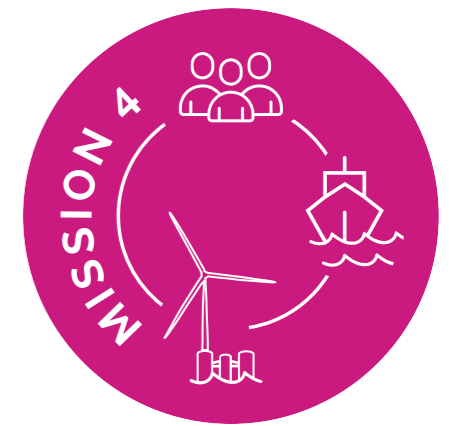
Maintaining the UK's lead in key areas of the supply chain requires ongoing, incremental improvement and cross-sectoral collaboration to continually refine and develop new cutting-edge UK-sourced products and services. A number of these key technological challenges have been identified for delivery in the IGP and new collaborative innovation structures, building on the strength of our existing innovation and R&D capabilities.

## Project 4c: lock in excellence through standardisation

Smart standardisation in products and services helps increase quality and consistency, reduce cost and enable effective regulation. In particular, efforts are needed to focus the range of floating substructure designs to allow key technologies to mature and manufacturing capacity to scale up in preparation for volume production in the UK.

## Project 4d: back UK exporters

As UK companies gain experience and a track record in their home market, more and more will look overseas for growth opportunities. Helping companies, especially SMEs and developers, navigate opportunities in key global markets for floating offshore wind will boost market opportunities and UK value from the sector.



### MISSION MILESTONES:

- Develop UK manufacturing capacity to produce at least 50 units of floating foundations by 2030
- Increase UK manufacturing capacity of moorings and anchors by 50% by 2030

# 5 MISSION 5: Innovating to Win

"... keeping the UK at the forefront of the global industry through technology, knowhow and a world-class innovation system."

Technology and innovation is central to the floating offshore wind industry. Wind turbines and cable systems are needed that are designed for the dynamic loads experienced by floating structures. Advances in material science can improve moorings and anchors. Robotics and autonomous systems can help safely and efficiently inspect and maintain floating wind farms. Integrating floating wind farms into a wider high-voltage offshore electricity system requires a standardised approach to designing multipurpose interconnectors. While the UK already has many capabilities, fostering innovation in key parts of the supply chain such as the high-value substructure will anchor the future supply chain benefits in the UK.

## Project 5a: supercharge the innovation ecosystem to unlock cost reduction

Innovation is the lifeblood of industrial development. A fit-for-purpose innovation ecosystem including academic institutions, innovation funding and test facilities is essential for the development of new British technologies. This, in turn, will enable the cost reduction needed for floating wind to fulfil its potential. The Industrial Growth Plan sets out the need for a new late-stage Wind Innovation Development & Demonstration (WInDD) Hub and an Advanced Turbine Technology Institute working across the offshore wind sector's innovation landscape, and wider industries, to aggregate our capabilities to design, demonstrate and develop innovative technologies.

## Project 5b: find and validate a commercially viable UK foundation design

The floating substructure that supports the offshore wind turbine is one of the highest value components of the wind farm, second only to the turbine itself. Collaborating to develop a proven floating substructure design that can be manufactured and constructed from UK facilities will open up opportunities for UK suppliers of all sizes. The IGP sets out action to support development, demonstration and manufacture of a design that will reduce material use, weight and, ultimately, costs so that we can sustain long-term manufacturing in the UK.



### MISSION MILESTONES:

- A certified UK-led floating substructure design by 2027
- 15 companies spun-out using IP developed within UK R&D organisations, receiving first commercial contracts by 2030

### Endnotes

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