



Rialtas na hÉireann
Government of Ireland

Powering Prosperity

Ireland's Offshore Wind Industrial Strategy



Prepared by the Department of
Enterprise, Trade and Employment
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A handwritten signature in black ink, appearing to read 'Simon Coveney'.

Simon Coveney TD
Minister for Enterprise,
Trade and Employment

Minister's Foreword

Ireland's offshore renewable energy (ORE) targets are ambitious. Building on 2030 targets of 5 Gigawatts (GW) of grid-connected offshore wind plus an additional 2GW of non-grid connected offshore wind in development, by 2040, we aim to deliver 20GW of ORE, and by 2050, this rises to 37GW, which is approximately six times our current peak electricity demand. The scale of these targets is a strong signal of Ireland's clear potential to become a global leader in ORE. Ireland has the unique advantage in Europe of an expansive Exclusive Economic Zone (EEZ), which is around seven times our landmass, a frequent and powerful wind resource offshore, and a strong history of cultivating world-leading industries. Our potential to produce ORE that exceeds our domestic demand positions Ireland at the core of Europe's renewable energy future.

The Offshore Renewable Energy Future Framework Policy Statement, published by the Department of the Environment, Climate and Communications (DECC), sets out a clear path towards achieving our 2040 and 2050 targets via a plan-led approach to ORE development. As Minister for Enterprise, Trade and Employment, I am determined to ensure that, in reaching these targets, Ireland captures the full economic development and investment opportunities arising from Ireland's offshore ambitions. The overarching objective of this Industrial Strategy is to set out a pathway to deliver that economic benefit for all of Ireland.

Powering Prosperity: Ireland's Offshore Wind Industrial Strategy sets out measures to enable companies in Ireland to play a major role in the development of Irish projects, as well as supporting companies in Ireland to increase their activities in overseas markets. It also includes actions designed to support our RD&I sector to reach the cutting edge of future ORE developments, enhancing Ireland's reputation for research and innovation that supports globally competitive enterprises operating at the technological frontier.

This is the first iteration of this Strategy focusing on the next two years but with a view to 2030. Further measures will be developed over time aimed at achieving the overarching objective of maximising the economic development potential of ORE, including establishing new industrial demand for green energy, and ensuring we grasp the opportunity presented by offshore wind to enhance balanced regional economic development.

I would like to thank all of those across industry, research and Government who have supported the development of this Strategy, and I look forward to continuing working with you as we implement the actions set out in this document and assess further measures to ensure Ireland benefits to the greatest extent possible from this significant offshore resource.

Executive Summary

Ireland has a maritime territory approximately ten times the size of its land area, with our EEZ approximately seven times our land mass. This sea area provides a strong and consistent wind supply, which is unmatched by most of our European neighbours. Harnessing this abundant source of renewable energy will be transformative for our country, helping accelerate Ireland's decarbonisation and revolutionise our export led economy. In the future, Ireland will be powered by renewable energy. Now is Ireland's offshore opportunity.

The scale of this opportunity presents a once in a generation opportunity for our enterprise sector to contribute to the delivery of these ambitious targets. Ireland has a target to generate 37GW of ORE by 2050 - approximately seven times our current energy demand. This fits within the context of the 260GW target by 2050 of the North Seas Energy Cooperation (NSEC) countries, of which Ireland is a member, the 300GW by 2050 target of the European Union and the 657GW global target. Ireland has the opportunity to develop an ORE sector to serve our growing domestic needs and to grow an ORE industry of a scale that can compete globally.

This Strategy, which is focused on action in 2024 and 2025, sets out a pathway to 2030 for Ireland to become internationally recognised as a source of growing entrepreneurial companies offering innovative value propositions to the offshore wind sector both at home and overseas, as well as a high potential market for foreign direct investment (FDI) to complement our domestic capability. The Strategy is aligned with work being undertaken in DECC, including the *ORE Future Framework Policy Statement*.

Our overarching objective is to maximise the economic benefit of achieving Ireland and Europe's ORE targets by creating a solid domestic supply chain and resilient ORE industry. The Strategy will set out how Ireland, over time, can maximise the economic impact of future renewable energy use, leveraging the full potential of additional generation capacity that will arise from achieving our ORE targets. All of which will serve to strengthen Ireland's global competitiveness, from both a security of supply and cost perspective, and deliver balanced regional economic development.

This Industrial Strategy was developed following intensive stakeholder consultations across Government, industry, and the research system, and is anchored on four core pillars that those consultations identified as being central to maximising the economic development potential associated with Ireland's offshore wind ambitions. These are:

- Offshore Wind Supply Chains
- Research, Development, & Innovation
- Future Demand and End Uses for Renewable Energy
- Balanced Regional Economic Development Opportunities

This initial iteration of the Industrial Strategy covering 2024 and 2025 includes 40 actions across these four areas. Some of the key actions that will be advanced in this iteration include:

- **The establishment of an Offshore Wind Centre of Excellence (OWCE)** to enable offshore wind supply chain companies in Ireland, government agencies and further and higher education institutions to access, adopt and accelerate new technologies, for example, in floating offshore wind and digital, that solve real world challenges and collaborate to drive the sector's future competitiveness.

- **Exploring the concept of Green Energy Industrial Parks** with the potential to deliver large scale, impactful property, utility and infrastructure solutions, capable of attracting larger scale investments, co-located with renewable energy generation, providing new industrial opportunities for appropriate geographical locations where complementary renewable energy can be sourced/developed, e.g., offshore and onshore wind.
- **Driving scale in the offshore wind supply chain** through in-depth, one-to-one assistance to support transformational change in new and existing companies targeting scaled growth in the offshore wind supply chain both at home and in global markets.
- **A Memorandum of Understanding (MOU)** between EirGrid, and Enterprise Ireland (EI), and IDA Ireland providing a framework for strategic cooperation between the parties on offshore wind development, and in particular, enabling more supply chain opportunities for companies in Ireland to get involved in the grid infrastructure projects required to support deployment of ORE.
- **Building on international strategic partnerships** with other countries to establish meaningful cooperation in supply chain development and knowledge transfer within the highly internationalised offshore wind industry.

This Industrial Strategy will be subject to continued development, in consultation with industry and relevant Government Departments and Agencies, with this publication representing an initial set of measures targeting the immediate priority areas of supply chain development and RD&I in 2024 and 2025.

DETE will drive implementation of this Strategy, and progress on the actions will be reported to the cross-Government Offshore Wind Delivery Taskforce (OWDT), chaired by DECC, in particular through Workstream 7. This Workstream is led by DETE, EI, and IDA Ireland, with collaboration from other key Governmental stakeholders and industry via the participation of Wind Energy Ireland (WEI) and the Marine Renewables Industry Association (MRIA). Additional oversight and input will be sought from the following groups:

- The Offshore Wind Industry Forum (OWIF), established by DETE in 2023, is comprised of representatives from WEI, MRIA and a panel of company representatives from the offshore wind supply chain.
- The DETE Offshore Wind Interdepartmental Group, also established in 2023, comprises Government Departments and Agencies key to the development of ORE.
- The DETE Offshore Wind RD&I Subgroup, established in 2023.

Department will publish periodic progress reports on this first iteration of *Powering Prosperity: Ireland's Offshore Wind Industrial Strategy*, starting in 2025.

Key Ambitions and Targets



Ireland, by 2030, will



Develop an innovative enterprise ecosystem, with indigenous and multinational companies, that will provide world-leading service to the offshore wind sector.



Dramatically scale up the enterprise base that will service the offshore wind sectors in Ireland and around the world.¹



Deliver up to 5,000 jobs in the offshore wind sector and related industries.



Maximise opportunities for companies and investors to develop a vibrant and successful supply chain.



Proactively assist enterprise, workers, and the RD&I ecosystem in availing of these opportunities through targeted funding and supports.



Seek to establish an OWCE and a new Floating Offshore Wind Demonstrator to support growth and innovation.



Pursue strategic partnerships with like-minded countries in Europe and beyond.



Work with stakeholders to develop world-class property solutions powered by renewable energy.



In collaboration with other Departments, develop major industrial hubs around key deployment and O&M ports.



Transform Ireland's regional capability, and deliver opportunity for the people of Ireland, throughout Ireland, by developing industrial hubs and balanced regional economic growth.

Targets



As set out in Appendix B, work will be undertaken in 2024 to obtain baseline data and set projected targets for the areas outlined below.

R&D spend in the supply chain.

Number of jobs in the offshore wind supply chain.

New Start Ups in the offshore wind supply chain.

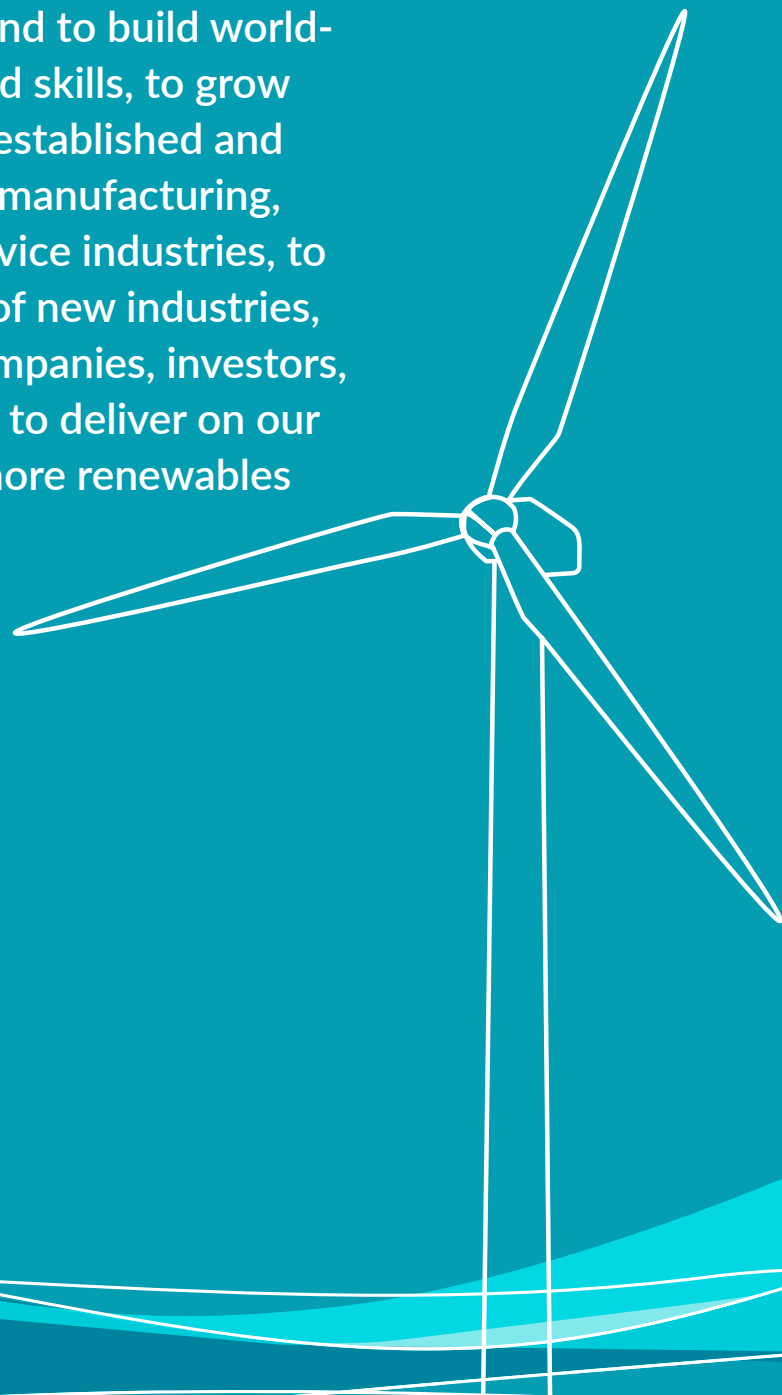
Exports (of goods and services).

FDI potential.

1. [Tomorrow's Energy Scenarios 2023 Consultation Report \(eirgridgroup.com\)](https://www.eirgridgroup.com)

1. Vision

Our vision is, by the end of this decade, to build a successful, vibrant, and impactful new offshore wind sector, and to ensure the sector creates value for the people of Ireland. By 2030, the vision is for Ireland to build world-class national capability and skills, to grow and support Ireland's well established and internationally recognised manufacturing, technology, and skilled service industries, to support the development of new industries, and to collaborate with companies, investors, and international partners, to deliver on our ambition for Ireland's offshore renewables energy sector.



Ireland is on the path towards a new model for our economy and society, perhaps marking the most significant shift in energy use and associated economic and social development since the industrial revolution. The development of an abundant supply of green energy, led by offshore wind, will deliver a sea change in Ireland's global competitiveness that can enable a new era of export led growth. We need to focus on delivering vital future capability for industry in Ireland today and ensuring Ireland is at the fore of new industry and innovation in the future. This is wholly consistent with the current *Programme for Government* and the *Government's White Paper on Enterprise 2022 - 2030*, which focus on the twin green and digital transition. In 2022, Ireland established sectoral emissions ceilings that will ensure Ireland plays a leading role in combatting climate change and leave the planet in a better shape for future generations. Additionally, offshore wind will be an essential resource in enabling delivery of the legally binding overall target of a 51% reduction in greenhouse gas (GHG) emissions by 2030.

EirGrid's consultation document, *Tomorrow's Energy Scenarios*, sets out a number of scenarios depicting how Ireland's electricity demand might evolve from 2035 to 2050 including a 'Self-Sustaining' scenario, which assumes a fast-paced transition away from fossil fuels, and an 'Offshore Opportunity' scenario based on an accelerated delivery of offshore wind at scale.² The 'Offshore Opportunity' scenario aligns with the Government's stated ambition of delivering 37GW of ORE by 2050 demonstrating how, by 2040, over 60% of Ireland's electricity could be provided by offshore wind allowing for a net zero power system for our people and industries. Therefore, offshore wind development is mission critical to Ireland's future energy security, economic development and social cohesion.

While the initial focus will be on fixed bottom offshore wind, Government has acknowledged the important role that floating offshore wind technology will play in delivering offshore energy at scale in the medium term. This Strategy will ready industry, and the research system to deliver on these medium term goals, and to ensure Ireland meets its stated ambition of 2 GW of non-grid limited renewable energy capacity planned to be in development by 2030.

As well as Ireland's offshore wind ambitions, countries across Northern Europe, through the *North Seas Energy Cooperation* (NSEC),³ have set a target to deliver 260GW of offshore wind by 2050⁴; considering that there was 30GW of installed capacity in Europe in 2022,⁵ this represents a paradigm shift for opportunities that a whole host of Irish based enterprises can embrace. The offshore wind sector has the potential to be a key driver of Ireland's future economy and a major source of global competitiveness, jobs and export growth.

2. [Tomorrow's Energy Scenarios 2023 Consultation Report \(eirgridgroup.com\)](#)

3. NSEC Member states are: Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Norway and Sweden, together with the European Commission

4. [Circabc \(europa.eu\)](#)

5. [GWEC-Global-Offshore-Wind-Report-2023.pdf](#)

Ireland competes on a global stage for investment and talent in well-established sectors like Food, Life Sciences, Technology, Engineering, International Services and Financial Services. In this new offshore wind sector Ireland will strive to partner with industry to develop and grow a vibrant and innovative enterprise ecosystem of scale. Ireland will issue ambitious offshore wind specific research and development (R&D) funding calls and seek to establish an OWCE, building on proven strengths in our enterprise and research base.

To deliver on these ambitions, Ireland will dramatically scale up the enterprise base and skilled workforce that will service the offshore wind industry in Ireland and around the world. The scale and variety of operations and services required for offshore wind projects ranges from complex R&D, environmental surveying, financial services, project management, engineering, fabricating, foundations, advanced manufacturing, construction, ICT and many more. This provides significant opportunities for an extensive cross-section of enterprises, workers, and researchers in Ireland. The Government will proactively support enterprise, workers, and the research ecosystem to avail of these opportunities through targeted funding and supports, while providing a predictable and stable environment for domestic and international investment. This will take place through the designation of sufficient marine areas that enable a transparent pipeline of future ORE developments, as well as grid capacity delivery and routes to market and offtake solutions for grid and non-grid connected projects, which is aligned with the *Offshore Renewable Energy Future Framework Policy Statement*.

While employment growth assumptions for offshore wind vary across different countries, Ireland has the opportunity to build a new industry, maximising the contribution of Irish companies and the Irish workforce in the process. Projections estimate that the delivery of Ireland's 2030 ORE targets will create a demand for around 2,800 Full Time Equivalent (FTE) jobs in an average year to 2030.⁶ However, in the case that Government achieves its aims to actively address skills shortages and increase local content in Ireland, this could rise to around 4,200 FTE jobs in an average year to 2030. Government will target a graduated increase in employment in the sector as technology, manufacturing, planning, surveying, deployment and operations and maintenance (O&M) activities come on stream.

Looking more broadly at the economy, the delivery of our offshore wind targets will support the growth of all industries, as the development of a secure and abundant supply of competitively priced renewable energy enhances Ireland's global competitiveness. As demonstrated at the *UN Climate Change Conference* in the United Arab Emirates, countries across the globe are strengthening their commitment to transitioning away from fossil fuels and towards green power. Existing and future industries will require

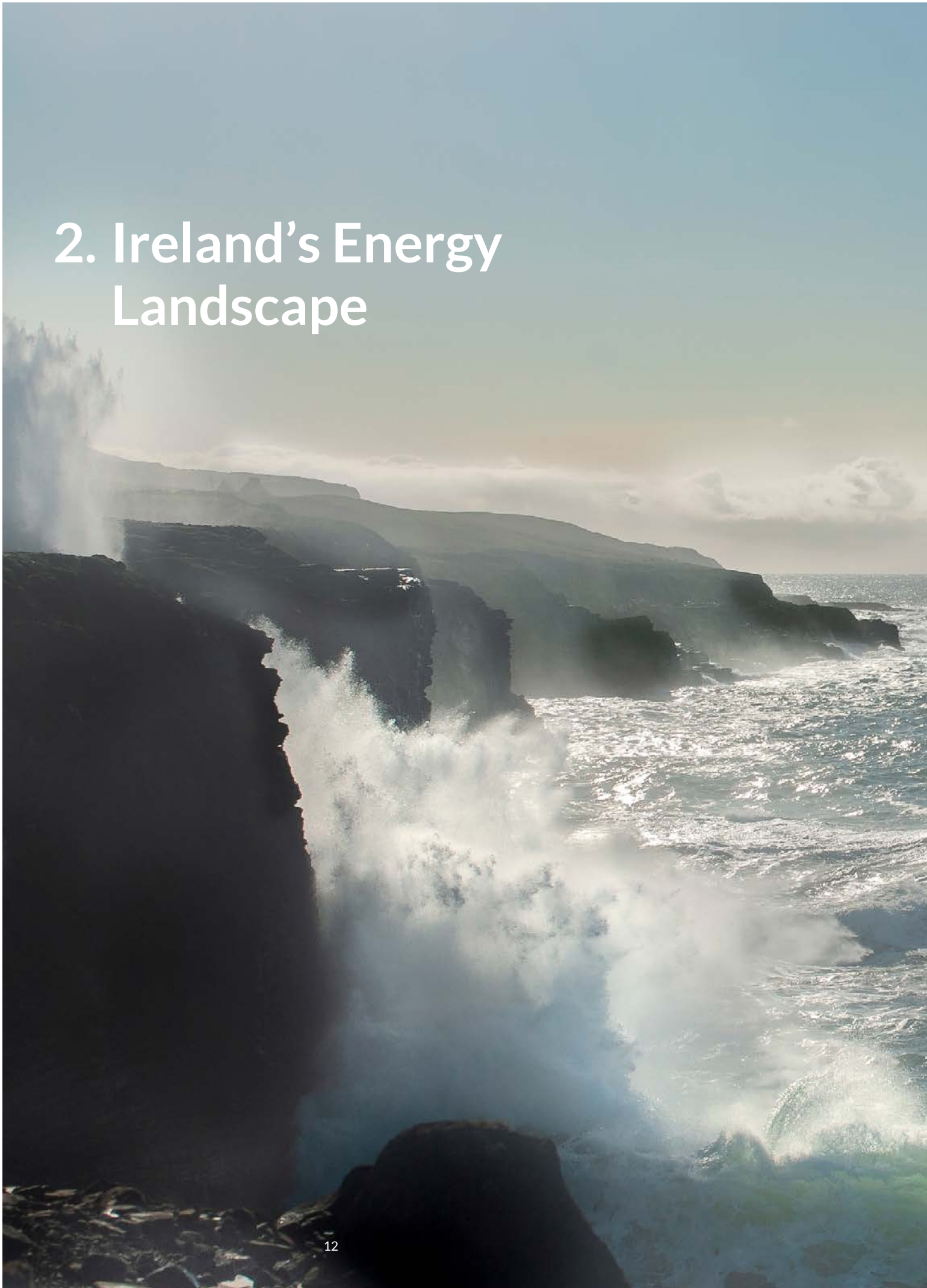
6. <https://windenergyireland.com/images/files/web-bvg-report-jan-2024>.

access to renewable energy to power their activity. Ireland is exceptionally well placed to nurture the opportunities and development of all companies in Ireland who will benefit from this competitive advantage. We will also partner with new types of international investors, attract new types of foreign direct investment (FDI) and complement Ireland's already world-class offering for high skill, high value employers.

In this vein, by 2030, Ireland will seek to develop a world-leading property solution for investors. This will serve as a proof of concept, demonstrating a clear business case for large-scale renewables deployment co-located alongside industrial demand for secure, competitively priced green energy. It will also highlight the economic and employment impacts that will result from the deployment of offshore wind. As Ireland embraces the opportunities posed by the global twin digital and green transition, the provision of innovative fully serviced, future-ready property solutions that minimise the carbon impact of economic activity will serve as a message to the world of Ireland's enhanced competitiveness offering and commitment to decarbonisation.

The *Programme for Government* commits to driving balanced regional economic development, and this is a key focus of EI and IDA Ireland. The era of offshore wind represents a game-changing opportunity for communities right across Ireland and particularly around our coastline. Our key deployment and O&M ports can be major industrial hubs of the future transforming regions in the process. Given the scale of the opportunity, all our regional stakeholders will work together in a coherent and strategic manner to maximise benefits.

2. Ireland's Energy Landscape

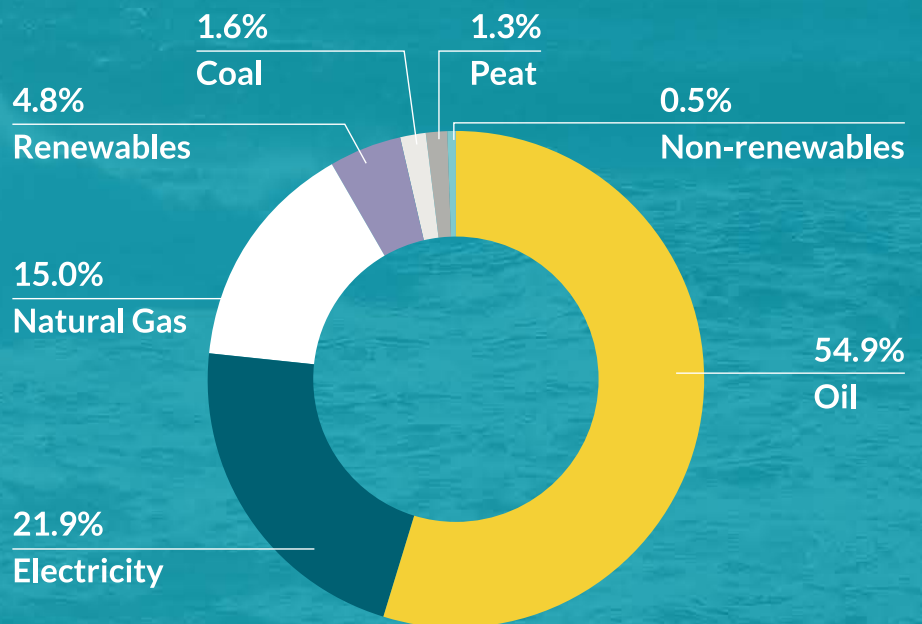


Ireland has a significant reliance on imported energy, a reliance that continues to grow. Imported energy has increased from 69.0% in 2018 to 83.4% in 2022 with the depletion of the Corrib gas field.⁷ Ireland had a total energy demand of 140.3 terawatt hours (TWh) in 2022, which was 4.8% higher than the previous year.⁸ According to the Sustainable Energy Authority of Ireland's (SEAI) *Energy in Ireland 2023 Report*, electricity accounted for 21.9% of this demand, equal to 30.7TWh. A total of 54.9% of Ireland's overall energy demand was satisfied by oil products.⁹

Electricity demand increased by 2.5% in 2022, compared against 2021, partially driven by the positive economic growth in the commercial services sector, which includes their essential attendant data centres. This overall growth was partially counteracted by a decrease in electricity demand from the residential sector – signalling a strong growth in commercial/industrial demand relative to domestic demand.¹⁰

FIGURE 1
Breakdown of Ireland's 2022
Energy Demand by Source

Source: SEAI's Energy In Ireland 2023 Report



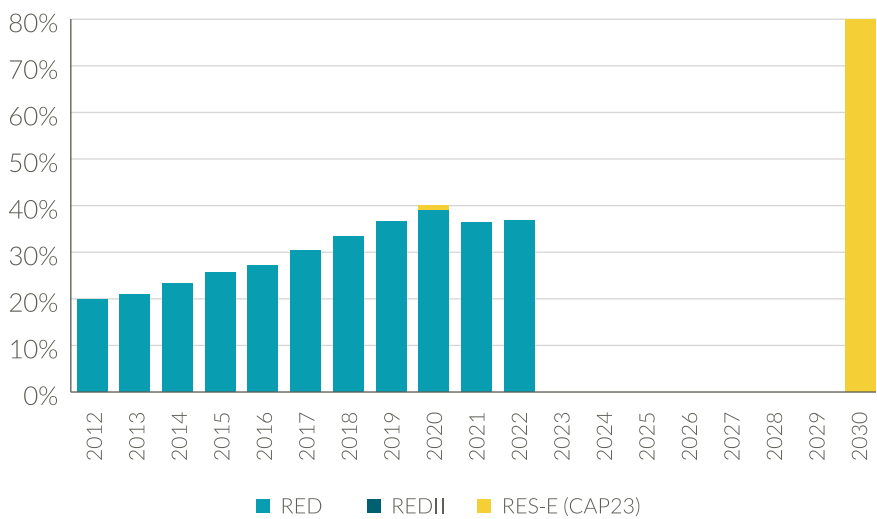
7. Ireland's Competitiveness Challenge 2023
 8. SEAI - Energy in Ireland 2023 Report - most up to date data at time of publication
 9. Ibid.
 10. Ibid.

2.1 Future Energy Demand Projections

Ireland has set a target that at least 80% of its electricity requirements will come from renewable sources by 2030;¹¹ a total of 36.8% of Ireland's electricity was generated from renewable sources in 2022.¹² To achieve its target, Ireland will need to treble its installed renewable energy capacity by 2030.¹³

FIGURE 2
Share of gross final consumption of electricity from renewable sources (RES-E)

Source: SEAI's Energy In Ireland 2023 Report



Increased Government targets and ambitions on decarbonising the energy sector will require widespread electrification of our energy systems, and an accelerated roll out of indigenous renewable energy. Combined with the significant population and industrial growth expected to take place in the coming years, as well as new large energy users, Ireland is expected to experience a considerable increase in electricity demand.

EirGrid electricity demand projections to 2032 include three possible scenarios ranging from a high demand scenario whereby Ireland achieves 110% of its *Climate Action Plan 2023 (CAP23)* targets to a low scenario in which Ireland achieves 75% of its CAP23 targets.¹⁴ The median scenario, in which Ireland would achieve 100% of its CAP23 targets, would see electricity demand increase 43% by 2032, compared to 2022 levels.

11. [Climate Action Plan 2023](#)

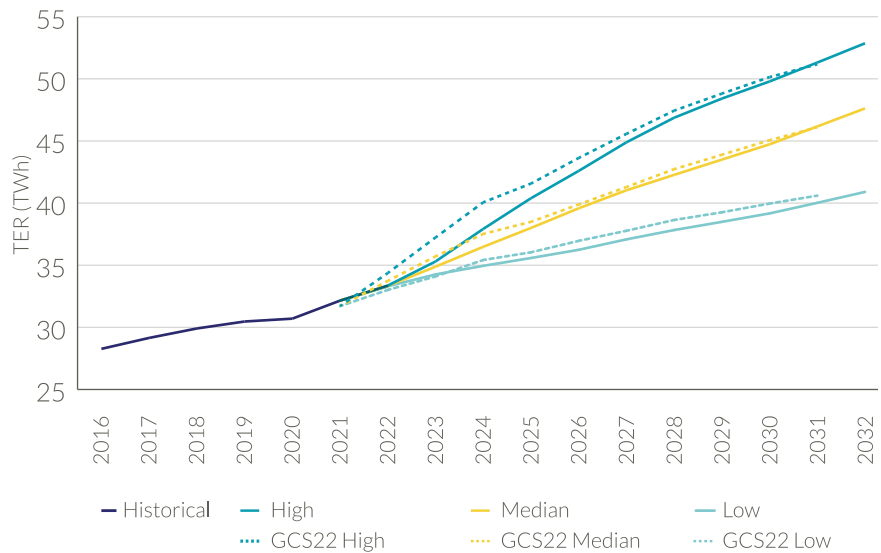
12. [Energy-in-Ireland-2023.pdf \(seai.ie\)](#)

13. [Ibid.](#)

14. [EirGrid_SONI_Ireland_Capacity_Outlook_2022-2031.pdf](#)

FIGURE 3
Total electricity requirement (TER)
forecast for Ireland 2023 - 2032

Source: Eirgrid Ireland Capacity Outlook 2023-2032¹⁵



In the longer term, EirGrid projections estimate an increase in electricity demand of between 73TWh to 86TWh by 2050, more than doubling current demand levels.¹⁶ Accommodating this growth, while simultaneously enhancing energy security and power generation decarbonisation, will require Ireland to partner and collaborate with domestic and international industry across a range of initiatives, including the rapid deployment of installed renewable energy generation capacity, supported by energy storage capacity and increased cross-border electricity interconnection, as well as the acceleration of green fuels and negative emissions technologies.

To achieve Ireland's decarbonisation targets, while accommodating this expected growth in demand, CAP23 sets an objective to develop 5GW of installed ORE by 2030, with a further 2GW of non-grid connected capacity to be in development by 2030, rising to 37GW by 2050 with floating technology playing a vital role. 37GW will meet and exceed Ireland's indigenous electricity needs; however, this generation capacity will also enable the production of green hydrogen and other fuels, the development of a hydrogen industry, the decarbonisation of industrial heat, the export of electricity, and of national importance, surety of 'energy security' via interconnection, among other uses. This Strategy will consider how increased industrial demand for green energy can over time add value domestically to the 37GW target for ORE, as part of the range of end uses which will be required for this abundant renewable energy.

15. The high, median and low scenarios are estimates provided in Ireland Capacity Outlook 2023-2032 indicating how Ireland's total electricity requirement (TER) might develop from 2023-2032. The equivalent scenarios from Eirgrid's previous Generation Capacity Statement (GCS22) are also provided.

16. [Tomorrow's Energy Scenarios 2023 Consultation Report \(eirgridgroup.com\)](#)

3. Policy Context



Ireland has a maritime area that is approximately ten times, and an EEZ that is approximately seven times, the size of its landmass, with some of the most powerful wind resources in the world. To fully harness the vast potential for clean, renewable energy from our seas, a suite of policies across Government have been, or are in the process of being developed to ensure ORE projects are delivered in line with the target to deliver 37GW of ORE by 2050. A key enabler of these targets is the work of the OWDT, chaired by the Department of the Environment, Climate and Communications. The OWDT co-ordinates work across the Government system in relation to offshore wind. An overview of the work of the OWDT and its various Workstreams can be found in Appendix C.

A number of new policies are being developed under the various workstreams of the OWDT, including this Strategy. This suite of policy documents are aligned and will ensure actions are implemented. There is a need for a reduction in the risk involved with the delivery of offshore wind projects (i.e. planning certainty, lower cost financing options, supply chain, skills availability, grid development, port infrastructure etc.). Furthermore, macro-economic challenges, such as, inflation, economic growth, labour force etc., will continue to need to be addressed. The cross-Government collaboration through the OWDT and these complementary policies will assist in this regard. Indeed, the identification of risks, is a core activity of the OWDT.

It is expected that offshore wind energy (OWE) will constitute a significant part of that target, and this Strategy is designed to ensure that the economic benefit to the State of achieving that target through the development of OWE is maximised, and complements the array of climate, energy, planning, and other enterprise policies that will enable an OWE sector to grow and develop at scale in Ireland. It also draws on policy best practice internationally in renewable energy and offshore wind (see Appendix D).

3.1 National

3.1.1 Climate Policy

The *Climate Action Plan* sets out Ireland's strategy to cut our carbon emissions in half by 2030 and reach net zero by 2050, implementing carbon budgets, sectoral emissions ceilings and outlining a range of other actions and targets. It acknowledges Ireland's potential to harness vast amounts of untapped ORE, emphasising the central role this will play in decarbonising our economy.

3.1.2 Enterprise Policy

The *White Paper on Enterprise 2022-2030* sets out the integration of decarbonisation and net zero commitments as a key feature of Ireland's enterprise policy and identifies OWE as a key opportunity for Ireland. The *White Paper* recognises that there will be opportunities for efficiencies and creating new types of value for customers through 'circular' and decarbonised products, and references electricity from offshore wind as one area of note.

The *White Paper* recognises clustering as a key tool for the delivery of Ireland's enterprise policy goals, and includes a commitment to establish a *National Clustering Policy*. This proposed strategic and co-ordinated national approach to clustering in Ireland may provide an important policy framework within which the OWE sector, and others which are integral to the acceleration of the green economy, can effectively develop in Ireland. Further, DECC's *Policy Statement on the Framework for Phase Two Offshore Wind* also includes a commitment to work with industry to develop an industrial strategy to ensure there is a long-term competitive and sustainable OWE industry in Ireland.

Furthermore, the *White Paper* recognises infrastructure as essential to ensuring that the economy has the capacity to achieve sustainable, long-term growth and creating high value employment. The Department of Enterprise, Trade and Employment (DETE) is engaging across government with other Departments and bodies responsible for the development and delivery of economic infrastructure with a view to aligning infrastructure delivery under *Project Ireland 2040* with the needs and priorities of enterprise.

3.1.3 Research and Innovation Policy

Ireland's national research and innovation policy, *Impact 2030*¹⁷ places a key emphasis on maximising the collective impact of R&I in meeting our climate targets. Complementing this, Ireland's *Smart Specialisation Strategy for Innovation 2022-2027* is a place-based innovation strategy that has a clear focus on delivering a more digitally connected, greener Ireland, through maximising regional development strengths and emerging opportunities. In terms of Ireland's maritime area, *Impact 2030* sets the ambition of

17. [Impact 2030 - Ireland's Research and Innovation Strategy \(www.gov.ie\)](https://www.gov.ie)

positioning Ireland as a leader for marine research and technology. To meet this ambition, *Ocean Knowledge 2030*, a national marine R&I strategy is expected to be published in mid-2024 and will include a focus on RD&I needs for key blue economy sectors including ORE.

3.1.4 Energy Policy

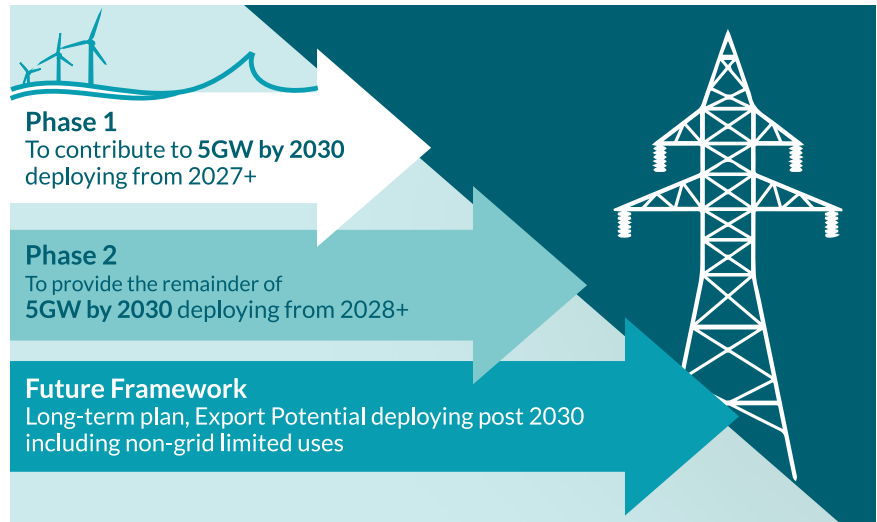
The *Offshore Renewable Energy Future Framework Policy Statement* sets out a path for achieving the State's long-term goals by signposting a plan-led approach for ORE development from 2030 to 2050. It outlines how ORE policy will link relevant components of the energy system, streamline the ORE consenting process, and integrate key priorities – such as environmental assessments and consultation processes – into a plan-led approach to ORE delivery. It aims to achieve several objectives, including the following:

- Setting out an evidence base for Ireland's ORE targets.
- Aligning essential ORE policy, including marine spatial planning, interconnection, alternative routes to market, technology innovation, storage, infrastructural alignment and industrial strategy.
- Building evidence based industrial policy drawing on expert analysis of financial mechanisms and job creation opportunities.
- Prioritising consideration of environmental and social impacts and demonstrating the integral role of environmental assessments in the development of future ORE policy.
- Analysing economic opportunities that can encourage investment and sets actions including requirements for further analysis and feasibility studies in key areas.
- Exploring export potential for surplus electricity, energy, and green products and services specifically through increased interconnection and renewable hydrogen.
- Outlining an overarching framework for long-term development, setting out a number of key actions, future directions and intergovernmental dependencies that will be addressed through subsequent policy to develop and initiate the long-term, plan-led approach to Ireland's ORE future.

Powering Prosperity: Ireland's Offshore Wind Industrial Strategy is designed to complement the *ORE Future Framework Policy Statement* with a strategic approach to harnessing Ireland's green industrial development potential arising from OWE and maximising the high-quality employment that this will bring across Ireland.

Figure 4
Proposed Phasing of Offshore
Wind Development in Ireland

Source: Department of Environment, Climate, and Communications



The *Future Framework* forms part of the multi-phased approach to OWE development in Ireland detailed in Figure 4 above, with the preceding *Policy Statement on the Framework for Phase Two Offshore Wind* outlining Ireland's plan to achieve the target of 5GW of offshore wind by 2030. Phase Two will progress through two Offshore Renewable Electricity Support Scheme (ORESS) auctions, the first of which, ORESS 2.1, will take place in late 2024 or in 2025, aligned to the Designated Maritime Area Plans (DMAPs) established by Government as part of a plan-led approach.¹⁸

A suite of policies related to the transmission of and demand for OWE and its derivatives also inform this Strategy including the *National Hydrogen Strategy*, the *National Policy Statement on Electricity Interconnection* and forthcoming policies on *Private Wires*, the *Offshore Transmission Strategy*, and the Review of the National Ports Policy, expected in 2025. *The National Ports Policy* provides the overarching policy framework for the governance and future development of Ireland's state port network and is an important piece of policy development given the role that ports are expected to play in the delivery of ORE.

3.1.5 Planning Policy

The *Maritime Area Planning (MAP) Act 2021* provides for the use of forward marine spatial planning through the establishment of DMAPs, which can be used to develop multi-activity area plans or to promote use of specific activities. Regarding ORE, DMAPs will identify and designate specific marine areas within which these developments are permitted to take place. This approach is consistent with the *National Marine Planning Framework (NMPF)*, which ensures that developments in Ireland's marine areas, including offshore wind projects, are carried out in a sustainable and strategic way. The

18. gov - Offshore Renewable Electricity Support Scheme (ORESS) (www.gov.ie)

NMPF complements the *National Planning Framework* (NPF), which guides strategic planning and development in Ireland's land areas. The *NPF* will also be central in the development of the onshore elements of an offshore wind industry that is economically, socially, and environmentally sustainable. Work is currently under way on the First Revision of the *NPF*, with a view to ensuring that the *NPF* continues to reflect the changing policy context over the course of its lifetime, including these advancements in marine planning policy.

3.2 EU Level

3.2.1 Climate Policy

Climate action at European Union (EU) level is underpinned by the ambition to become climate neutral by 2050; the plan for reaching this target is set out in the *European Green Deal*. The *European Green Deal* highlights offshore wind production, as well as renewable energy more broadly, as essential in the EU's clean energy transition. The *European Climate Law* writes this carbon neutrality goal into law, also setting the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels. Achieving this 55% target will be facilitated by *Fit for 55*, a set of proposals to revise and update EU legislation, also putting in place new initiatives with the aim of ensuring that EU policies are in line with climate objectives.

3.2.2 Energy Policy

Fit for 55 proposed a significant amendments to the *Renewable Energy Directive* (RED). The RED established a common framework for the promotion of energy from renewable sources in the EU and set a binding target of 32% for the overall share of energy from renewable sources in the EU's gross final consumption of energy by 2030. An amendment to the RED, known as *RED III*, which entered into force in November 2023, establishes an overall renewable energy binding target of at least 42.5% at EU level by 2030 - but aiming for 45%.

The EU's decarbonisation ambitions have accelerated since February 2022 in the wake of the Russian invasion of Ukraine. Since then, the EU has introduced a suite of policy and legislative measures that aim to secure the European energy supply and eliminate carbon emissions. *RePowerEU* sets out the EU's plan to end dependency on fuel imports, aiming to save energy, produce clean energy and diversify energy supplies. The plan promotes significant investment in renewable energy and has brought about an increase in production and capacity. These initiatives enhance the opportunity for Ireland to build a strong and vibrant industry at scale, with the confidence and certainty of market demand across EU partner states.

The *EU Strategy on Offshore Renewable Energy* aims to harness the potential of ORE for a climate neutral future. Additionally, it aims to increase the EU's ORE capacity significantly from the 14.6GW of installed capacity in 2021,¹⁹ targeting over 60GW (which has since been raised to 111GW through agreement in the *European Wind Charter*) by 2030 and 300GW by 2050 – the scale of which represents a significant opportunity for companies in Ireland to participate in multiple EU supply chain projects. In October 2023, the European Commission introduced a package of measures in support of the EU's wind energy industry and addresses a range of challenges. The *European Wind Power Package* is designed to improve auction systems, fast-track permitting processes, enhance Europe's skills offerings, facilitate access to finance, and build Europe's supply chain capacity.

To accommodate the rapid development of European renewables, the increased electrification of our energy systems and the expected growth in demand, EU Member States' electricity grids will need to expand, be made more flexible and operate more efficiently. To achieve this, the European Commission has published an *EU Action Plan for Grids*, which seeks to address the main challenges in expanding, digitalising and better using EU electricity transmission and distribution grids. The plan also signals the intention to identify new cross-border priority energy infrastructure projects, through the designation of *EU Projects of Common Interest* (PCI) and *Projects of Mutual Interest* (PMI) status,²⁰ and to accelerate implementation of these and existing projects. *Annex II of the TEN-E Regulation 2022/869* details the relevant energy infrastructure categories including: electricity transmission; smart gas grids; hydrogen; electrolyser facilities; and carbon dioxide.²¹

3.2.3 Industrial Development Policy

As European production of renewable energy continues to grow, the EU has begun to develop a robust industrial policy environment to ensure that there is sufficient industrial capability within Europe to meet decarbonisation targets, achieve security of supply and lead global technological development. In 2020, the Commission adopted the *EU Industrial Strategy* to strengthen the EU's global competitiveness and to pursue the twin transitions of climate neutrality and digitalisation. This was updated in 2021 to include an additional focus on developing European resilience in the wake of the COVID crisis.

The *Green Deal Industrial Plan* (GDIP), published on 1 February 2023, sets out a series of proposals, including changes to the regulatory and State Aid frameworks, to boost clean technologies. The *GDIP* aims to achieve a predictable and simplified regulatory environment, secure faster access to sufficient funding, ensure the availability of a capable skilled workforce, and facilitate open and fair trade for resilient supply chains. As part of that, the

19. [Offshore renewable energy \(europa.eu\)](https://europa.eu)

20. [EU Action Plan for Grids](#)

21. [TEN-E Regulation 2022/869](#)

Critical Raw Materials Act, published in March 2023 and adopted in February 2024, aims to ensure a secure and sustainable supply of critical raw materials for the EU, and includes targets and actions such as 2030 benchmarks for domestic capacities, creation of secure and resilient supply chains, diversifying the EU's imports of raw materials, and target shares for materials to be mined and refined domestically.

The forthcoming *Net Zero Industry Act* is designed to achieve the GDIP objective to promote a predictable and simplified regulatory environment and will establish a regulatory framework for net zero technologies, suitable for quick deployment, ensuring simplified and fast-tracked permitting, promoting European strategic projects, and developing standards to support the scale-up of technologies across the Single Market. Once fully enacted, this is expected to provide opportunities for green industrial development and manufacturing relating to OWE in Member States with ambitious OWE targets, such as Ireland, and will inform future measures under *Powering Prosperity: Ireland's Offshore Wind Industrial Strategy*.

3.2.4 Innovation Policy

The *New European Innovation Agenda*²², adopted on 5 July 2022, aims to position Europe at the forefront of the new wave of deep tech innovation and start-ups. Through a framework of five 'flagship' initiatives the aim is to help Europe to develop new technologies to address the most pressing societal challenges, and to bring them on the market. In particular, the new wave of deep-tech innovation, is seen as critical in the Europe's ability to bring down greenhouse gas emissions, to make European economies more digital, and to guarantee Europe's food, energy and raw materials security.

22. [The New European Innovation Agenda - European Commission \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/infographic/infographic-new-european-innovation-agenda-2022-07-05)

4. Domestic Supply Chain Development

Successive industry and Government publications, including WEI's *Harnessing our potential: Investment and jobs in Ireland's offshore wind industry* (March 2020), DECC's *ORE Future Framework Policy Statement* and SEAI's forthcoming *Offshore Renewable Energy Roadmap for 2050* have clearly presented the scope of the opportunity for companies in Ireland to participate in the Irish and international offshore wind supply chains. Research carried out via EI's overseas network and underpinned by small and medium-sized enterprises (SMEs) input, has identified tangible commercial opportunities in priority markets including the UK, the Nordic region, France, Germany and the US.

In 2024, fixed offshore wind is already playing a significant role in many markets, with 61GW operating globally across about 250 projects.²³ This technology has a high degree of commercial readiness, and is considered fully bankable, easing access to finance. Floating offshore wind has a lower degree of commercial readiness than fixed offshore wind, but efforts to deploy the technology at scale are gathering pace globally, with many countries setting ambitious multi-GW deployment targets.

According to the *ORE Future Framework Policy Statement*, "Deploying 37GW of ORE in Ireland will result in a significant increase in revenue to the State as well as both direct and indirect job opportunities...The conducted economic market analysis further suggests that Gross Value Added (GVA) could sum to €69 billion over the lifetime of the projects – between 2022 and 2060 – assuming 37GW of ORE capacity and 12.2GW of interconnection. GVA was provided as the aggregate of labour costs and operation profits. Total in-country GVA could peak to about €2.4 billion in 2049. Of this value a total €8.8 billion in GVA could be accrued to the State by 2050 purely through exports of products and services related to ORE independent from employment benefits and GVA associated with domestic uses." Based on the type of ORE deployment currently envisaged, the vast majority of this will be offshore wind.

While not representing an exhaustive list, the forthcoming SEAI report *Offshore Renewable Energy Roadmap for 2050*, depending on extent of deployment of offshore wind, envisages potential supply chain opportunities in offshore wind project development and O&M activities; manufacture of large offshore wind turbine components such as towers; and manufacture of key floating offshore wind components such as foundation assemblies and synthetic rope and mooring line.

More broadly, supply chain opportunities for Irish companies are also foreseen in areas such as

- Geophysical and geodata surveying;
- Controls and instrumentation;

23. [Global Wind Energy Council Report 2023](#)

- Electrical engineering for installation of onshore and offshore substations;
- Marine engineering;
- Haulage transportation on land and sea;
- Project management;
- Electrical and mechanical repairs;
- Insurance; and
- Vessel and port facilities.

In addition to the established components and activities above, DETE's 2023 industry consultation suggests that companies in the digital technology sector that enter or pivot into 'complimentary' areas in offshore wind could add entirely new value to the global offshore wind supply chain. Areas such as cybersecurity, remote condition monitoring, and offshore communications will be in high demand across the sector. The size of this opportunity, while undefined at present, will likely be significant, as offshore wind deployment scales up globally. Additionally, some supply chain transferability should be possible between onshore and offshore wind in Ireland.

Ireland is an island nation, reliant on energy and communications connectivity with our international partners yet without significant domestic capability in cable manufacturing or laying. There is a strategic need to establish both to enable our ORE and interconnection ambitions, become part of the global supply chain for international projects and help ensure connectivity security through ready access to disaster recovery capability.

Overall, the measures outlined in this section, to be principally driven by EI, aim to improve awareness of the opportunity, and readiness of Irish SMEs to participate in the significant offshore wind supply chain in Ireland and internationally.

4.1 Building Capacity and Capability in the Irish Supply Chain

4.1.1 Background/Overview

Investing in and supporting the development of companies in Ireland working in or seeking to work in the offshore wind industry will help to maximise local supply chain content levels in the domestic Irish market and help to increase Irish company exports across global offshore wind markets. Building the competitiveness and capability of Irish companies in offshore wind is crucial and will be achieved via targeted and wide-ranging supports.

Ireland is widely recognised as outperforming our size on the global stage, and EI has been at the centre of supporting the development of sectors with leading global positions including Functional Ingredients & Nutrition, High

Tech Construction, Life Sciences, and Digital Technology. EI's track record in enterprise development, along with our combination of innovation and market expertise provides a unique perspective on the development of future sectors, which we are now bringing to the Climate Tech & Renewable Energy space, and specifically to offshore wind.

EI will continue to provide bespoke one-to-one supports to offshore wind clients, helping them to address the core strategic issues they will face, and putting the building blocks in place for future growth. In partnering with client companies in this way, we will ensure that Ireland becomes internationally recognised as a leader in the global offshore wind supply chain.

Business Support and Strategic Leadership

A significant development in the strategic capability of Irish companies active in the offshore wind sector will be a key driver of growth in the indigenous supply chain. This will be supported through in depth, one-to-one assistance, in order to drive transformational change in EI clients, targeting scaled growth in the offshore wind supply chain. Ambitious companies will also be supported on their scaling journey via targeted participation in EI's business leadership programmes, including *Leadership 4 Growth* and other targeted programmes that will be developed specifically for companies in this sector of national strategic importance.

Connecting senior leaders from Irish companies with experienced offshore wind growth advisors and mentors will also be prioritised. Enhanced peer-to-peer learning support will continue to be facilitated through EI's *Gael Offshore Network* and will form a cornerstone of any future national offshore wind cluster.

Increased support to Irish companies in the monitoring of and response to offshore wind tender and contract opportunities will be initiated.

Scaling Ireland's Offshore Wind Capability

Given the sizeable global opportunity in offshore wind, there is scope to drive a significant increase in the number of Irish companies of scale in this sector; these companies will drive strong employment, revenue, and export growth here in Ireland. While each company's pathway to scaled growth will be unique, ensuring that options exist for long-term strategic funding, including patient capital, will be a key determinant of success. For innovative companies, this can be enhanced through increased assistance for Irish companies to secure external European funding, e.g., *Horizon Europe*, *European Innovation Council (EIC)*. In addition, we will explore alternative options to ensure the availability of seed and development capital funding targeted at supporting the development of the ecosystem and sector in Ireland in particular for start-ups and scale-ups.

The Growth and Sustainability Loan Scheme

The €500 million Growth and Sustainability Loan Scheme, which launched on 19 September 2023,²⁴ provides longer-term lending to SMEs, including farmers and fishers and small mid-caps. The scheme targets a minimum of 30% of the lending volume towards environmental sustainability purposes with the aim of encouraging SMEs to take positive actions in support of the climate change agenda. The scheme is open for a broad range of investments that can qualify for eligibility as investment in green/sustainable measures. These include but are not limited to renewable energy projects and the manufacturing of products, components and machinery for renewable energy. Loans for climate action and environmental sustainability purposes will also benefit from an additional interest rate discount. In addition, up to 70% of lending will be for strategic investments with a view to increasing productivity and competitiveness and thus underpinning future business sustainability and growth. The Growth and Sustainability Loan Scheme will operate until 30 June 2026 or until the scheme has been fully subscribed (whichever is earlier).

Regarding funding, significant levels of investment will be needed in order to transform our energy systems. The sustainable finance sector can play an integral role in contributing to financing the low carbon transition.

Financing remains a challenge and work needs to be done to address the challenges of financing the transition envisaged in this Strategy. The Department of Finance is actively examining the domestic sustainable finance market in order to identify any impediments to financing activity and consequent policy measures which can be pursued to promote and encourage financing activity.

Increasing Offshore Wind Start-ups in Ireland

An increase in the number of Irish start-ups focused on the offshore wind opportunity will enable Ireland to fully avail of the long-term economic opportunity. This will be supported through the delivery of pre-seed funding and capability supports. Increased co-ordination with the third level sector to maximise commercialisation of research in offshore wind will also be prioritised. It may also be necessary to fast track ambitious high potential start-ups (HPSU) targeting the offshore wind sector, through delivery of targeted and right-sized financial and development assistance.

Maximising the Global Offshore Wind Export Opportunity

Significant global export opportunities exist for Irish companies working in the offshore wind industry. Continued and enhanced support services delivered via EI, both at home and overseas, will be delivered to increase the total number of Irish exporters and indeed the number of first-time exporters active in the global offshore wind market. EI has adopted a strategic focus on

24. <https://enterprise.gov.ie/en/what-we-do/supports-for-smes/access-to-finance/growth-and-sustainability-loan-scheme/>

priority international markets, where there will be a continuation of intensive efforts by EI to provide one-to-one supports and to build connections with project developers, Tier 1 contractors, and original equipment manufacturers (OEM), for the benefit of Irish supply chain companies.

Developing a Skilled Workforce

The Department of Further and Higher Education, Research, Innovation and Science (DFHERIS) is taking action to address the skills required to develop offshore wind in Ireland, and to maximise its industrial and economic benefits. The Irish education system already offers a strong suite of training options relevant to offshore wind – through apprenticeships; through the Further Education and Training sector; through targeted initiatives for higher education such as the *Human Capital Initiative*; and through industry-led training co-funded by Skillnet Ireland.

Significant further work is required to identify the full range of skills and workforce requirements for the development of offshore wind, and to establish a sustainable workforce and skills pipeline. To advance these aims, DFHERIS is collaborating with DECC and industry through the dedicated Skills and Workforce Workstream 8 as part of the OWDT. Additionally, DETE will engage with the Expert Group on Future Skills Needs in this regard.

A key output of this Workstream has been the completion of a detailed skills assessment report for offshore wind, conducted in collaboration with WEI and Green Tech Skillnet, the enterprise-led business development and training network for renewable energy. This report, *Building our Potential: Ireland's Offshore Wind Skills and Talent Needs*, outlines the scale of the challenge, but also the opportunities available to Ireland from building a sustainable skills and talent pipeline. The report estimates that up to 2040, there will be a demand of around 86,000 full time equivalent (FTE) years in a 'business as usual' scenario. However, in an 'intervention' scenario, where active measures are taken to address skills shortages and to increase local content, particularly in manufacturing and supply chain, this rises to over 146,000 FTE years. The report, published in Q1 2024, makes a range of short, medium and long-term recommendations, which DFHERIS will consider as it agrees actions to deliver on skills priorities for offshore wind.

To meet the increasing demand from the offshore wind sector on maritime spatial planners and marine scientific experts across the Government Departments and agencies, a significant increase in appropriately experienced technical personnel is required. Provision of these specialist positions is a priority to ensure timely development of the offshore wind sector. Although the initial entry route to these occupations is through the third-level sector, the specialist nature of these roles means that postgraduate qualifications and relevant experience are also necessary. Therefore, the provision of additional postgraduate courses across Ireland in maritime planning and marine science is necessary to increase the supply of essential skills in these sectors. Increasing exposure to the offshore

renewable sector at third level for undergraduate marine, environment, planning, business and economics students is required to ensure that the risk of skills shortages within the sector is mitigated.

To ensure that skills monitoring remains responsive to the emerging needs of the sector, DFHERIS has also established an Expert Advisory Group on offshore wind skills, with members from further and higher education, Government Departments, agencies and industry. This Expert Advisory Group provides an agile forum for the identification of new and emerging skills requirements. It ensures that key stakeholders from further and higher education and industry can inform government of skills opportunities, challenges, and potential interventions in a dynamic manner.

4.1.2 Rationale

Governments across the world are increasingly looking to offshore wind as a central element in the delivery of their climate and decarbonisation commitments. The scale of offshore wind generation ambition globally over the next 20 to 30 years is substantial, offering significant opportunity for Irish companies who can service the industry. Global supply chains are challenged to keep pace with the rapid expansion of the industry globally, creating further opportunity for companies in Ireland. The development of the Irish offshore wind supply chain is critical for several reasons:

1. The development of a home-grown supply chain can support the delivery of ambitious national targets.
2. Supporting Irish companies to pursue this global market opportunity can underpin export growth, and job creation, here in Ireland.
3. Increased Irish company involvement in the offshore wind sector will support long-term sustainable employment and economic development across coastal areas.

4.1.3 Impact

Investing in and supporting the development of Irish companies in offshore wind will help to maximise local supply chain content levels in the domestic Irish market, helping to exploit the revenue and employment potential. It will also help drive an increase in Irish company exports across global offshore wind markets and increase both the scale and breadth of Irish companies active across the offshore wind industry.

Actions	Deadline	Owners
1 Establish baseline data and set projected targets for <ul style="list-style-type: none"> • R&D spend in the OWE supply chain • Number of jobs in the OWE supply chain • New Start Ups in the OWE supply chain • Exports • FDI potential 	Q4 2024	DETE
2 Conduct economic impact assessment on the potential of offshore wind in Ireland.	Q4 2024	DETE
3 Increase participation in business leadership programmes amongst the offshore wind supply chain and develop specific capability supports for new entrants to the offshore wind sector.	Ongoing	EI
4 Deliver long-term strategic funding options to support scaling Irish offshore wind supply chain companies.	Ongoing	EI, DETE, SBCI, ISIF
5 Drive increased start-up and high potential start-up generation in offshore wind, through enhanced entrepreneur development programmes and targeted funding supports.	Ongoing	EI, DETE
6 Engage with other relevant agencies, such as SEAI, Science Foundation Ireland (SFI), Marine Institute (MI), Irish Maritime Development Office (IMDO), to leverage support programmes and funding opportunities to maximise local supply chain content levels in the domestic Irish market.	Ongoing	DETE, SEAI, SFI, MI, IMDO
7 Explore extending the €500 million Growth and Sustainability Loan Scheme and any need for alternative funding scheme or initiative to support the growth of the offshore wind supply chain.	Q4 2024	DETE, SBCI
8 Consider recommendations of the Greentech Skillnet/WEI Skills Assessment Report and, using targeted funding from the National Training Fund (NTF), subject to agreement in the estimates process, agree actions to deliver on skills priorities for achieving offshore wind energy targets.	2024 onwards	DFHERIS

Case Study

XOCEAN

Ocean data, delivered.

Using Uncrewed Surface Vessels (USVs), XOCEAN provides turnkey ocean data. From mapping the seabed to environmental monitoring, XOCEAN offers a safe, economic and carbon neutral solution to ocean data delivery. Headquartered in Co. Louth, XOCEAN was founded in 2017 and has since grown to over 200 staff with offices in Ireland, the UK, the US, Canada and Australia.

In 2021, XOCEAN secured R&D funding from the *European Maritime and Fisheries Fund*. It was a grant under the funding call for "Investing in Blue Innovation". XOCEAN secured a €1.7 million grant to develop and commercialise their technology and survey platform, which included the integration of the sub-bottom profiler (SBP) – a sensor used in the marine renewable energy industry to assess the geology of the seafloor and understand seafloor subsurface characteristics and composition, which assists in the development of ground models for proposed array areas and export cable routes. This capability was required by a leading global ORE company, with which XOCEAN was engaged on an early-stage offshore wind development project. The R&D funding that was granted, in addition to investment by EI as part of its Series A funding round, enabled the XOCEAN team to develop and embed this capability into its service offering as standard across its fleet of USVs.

The R&D support enabled XOCEAN to deliver the additional customer requirements and was a key enabler in securing a framework agreement for recurring work across multiple offshore wind farms in Europe. The client was delighted by the ability of XOCEAN to deliver data that, up to that point, had required the deployment of a traditional survey vessel requiring crew to go offshore and resulting in significant carbon emissions. This service is now requested in over 50% of the projects delivered by XOCEAN, and its addition has allowed them to scale the business more rapidly. Total revenue at XOCEAN to the end of 2023 has more than doubled since the introduction of this additional service in 2021.

4.2 Maximising Opportunities for the Irish Supply Chain to Win New Offshore Wind Contracts both at Home and Overseas

4.2.1 Background/Overview

One of the overarching aims of *Powering Prosperity: Ireland's Offshore Wind Industrial Strategy* is to maximise the number of companies in Ireland working across the offshore wind supply chain, both domestically and across global export markets.

Meet the Buyer Events and Visibility of Contract Opportunities

EI has a long-established programme of connecting relevant Irish companies directly with the decision makers of leading procurers of offshore wind products and services, e.g., project developers, Tier 1 contractors, and OEMs. Building awareness of Ireland's growing capability amongst this industry cohort will be a priority. Industry consultations completed during the development of this Strategy highlighted that increasing visibility and awareness amongst the supply chain of upcoming contract and tender opportunities will be equally as important. To help achieve this, an expanded programme of 'Meet the Buyer' engagements will be developed and delivered to bring the Irish supply chain closer to its customer base, in turn helping to maximise local supply chain content levels.

Enterprise Ireland Support in Priority Export Markets

EI will continue to implement its overseas offshore wind programme of activities and support services to companies. These activities include group market study visits and trade missions to priority export markets, as well as targeted one-to-one meetings with industry stakeholders and buyers in market. As highlighted in section 4.1, EI will also support the capability building across the supply chain, engaging with business leaders in both existing and new companies in the sector.

Maximising Offshore Wind Public Procurement Opportunities

While many of the supply chain opportunities will arise from private sector developers and associated Tier 1 contractors, additional opportunities will be created by public bodies involved in developing offshore wind infrastructure in Ireland. EirGrid, for example, will manage and maintain the offshore transmission system and, in this role, will be a major procurer of products and services. Additional public bodies and agencies may also bring contract opportunities to market from time to time, increasing the opportunity for domestic supply chain companies.

To help maximise the opportunities that arise from offshore wind public procurement contracts, comprehensive public procurement training will be provided to Irish companies to help improve tender responses in line with

public procurement criteria. This will be informed by tenders planned by public bodies across the Government's OWDT over the coming years. A new MoU will be signed between EirGrid, EI, and IDA Ireland, which commits to increasing the flow of information between the parties, and closer collaboration on the development of innovative offshore wind strategies.

This MoU will focus on Phase 2 ORE initiatives and beyond. The second phase will see significant levels of electricity supplied from wind farms off Ireland's south coast. The wind turbines will again be provided by private developers, but, in this phase, EirGrid will be responsible for delivering the infrastructure that will connect the power to the onshore grid. This will be realised through EirGrid's *Shaping Our Offshore Energy Future programme*, which will see the installation of offshore electricity substations. EirGrid will provide connections between these offshore substations and new onshore substations using undersea and underground electricity cables.

The MoU aims to foster a better collaboration with EirGrid on its supply chain strategy (where possible) but also recognises that there are many stakeholders involved in this process and therefore, many areas of collaboration are outside of EirGrid's control.

4.2.2 Impact

Increased 'Meet the Buyer' events and greater awareness of Ireland's capability amongst leading global procurers of offshore wind product and services can have a significant positive impact on the growth of Ireland's supply chain. It also helps inform the SME base of the ORE industry's future requirements which those firms can potentially address through availing of targeted EI supports. This will ultimately help to support an increase in the numbers of companies in Ireland working in the industry, in the domestic market and in global export markets.

A continued focus by EI on the delivery of comprehensive support services to Irish companies in priority export markets will deliver ever increasing growth of offshore wind export revenue. This will also strengthen the capability and industry experience of the Irish supply chain in offshore wind, enabling companies in Ireland to position strongly for contracting opportunities in the domestic market in the years ahead. Furthermore, strong engagement with export markets will ensure that companies in Ireland have a diversified offshore wind revenue stream, allowing them to optimally deploy resources, maintaining activity and market position in the sector as each country roles out their national plan.

A concentrated focus on public procurement training can enable companies to maximise the opportunities that arise in the Irish market, helping to strengthen local supply chain content.

Actions	Deadline	Owners
9 Delivery of public procurement training workshops to companies across the Irish supply chain.	Q4 2024	EI, EirGrid
10 Establish and implement MoU between EirGrid and relevant enterprise agencies.	Q2 2024	EirGrid, EI, IDA

4.3 Supporting a National Offshore Wind Cluster

4.3.1 Background/Overview

The *White Paper on Enterprise 2022-2030* recognises clustering as a key tool for achieving Ireland's enterprise policy objectives, including driving innovation, pursuing the twin green and digital transition, attracting and embedding international investment and developing strong linkages between multinationals and indigenous firms.

In addition to existing networks, a National Offshore Wind Cluster would bring together members from enterprise, further and higher education, research, and the public sector, facilitating the level of networking, innovation, information sharing, collaboration and capacity building needed to ensure that Ireland develops an offshore wind industry of scale.²⁵

4.3.2 Rationale

Offshore wind is a sector of strategic national importance, offering a means to decarbonise our economy while presenting substantial opportunities for economic growth. Clustering has emerged as an effective means of maximising opportunities in the offshore wind industry.

Many countries that have enjoyed early success in the sector have established effective offshore wind clusters.

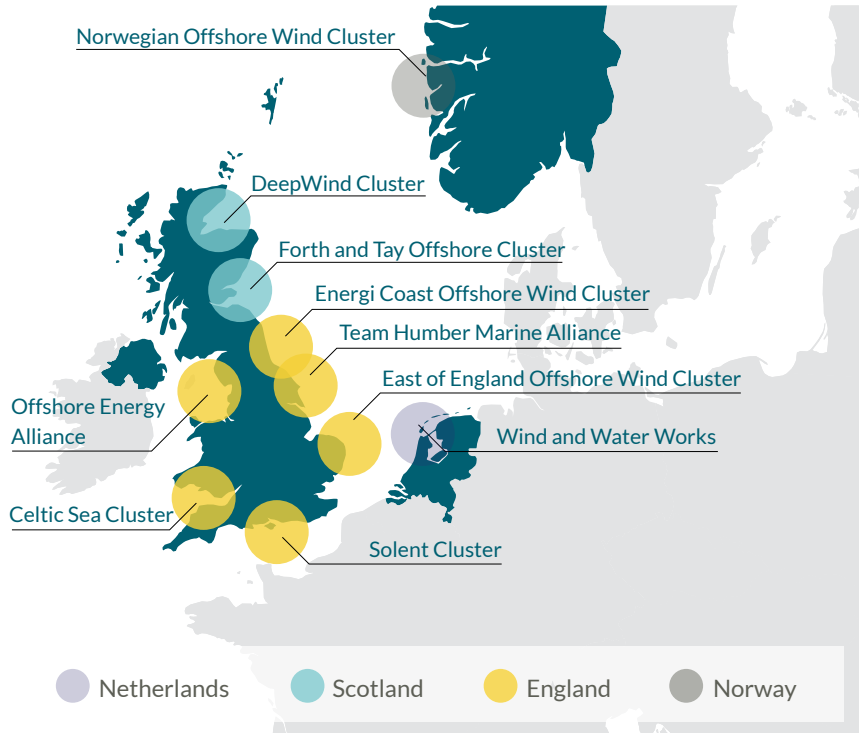
Clustering is also an effective tool to mitigate many of the challenges in the offshore wind sector while delivering significant benefits, for example by:

- Strengthening Irish companies' awareness and ability to access opportunities within the Irish offshore wind sector.
- Improving collaboration between industry and Research Performing Organisations (RPOs) to drive an increase in the return on the State's investment in offshore wind research.
- Boosting international recognition of Ireland's capability in the sector.

Clusters are geographic interactive alliances of interconnected enterprises, research centres and associated institutions in particular fields that compete, cooperate and face common challenges and opportunities.

25. The following definition was provided in the 'Development of an Evidence Base to Support the Development of a National Clustering Policy and Framework' report by Grant Thornton, which was commissioned by DETE and is available on the Department's website.

Figure 5
Examples of Successful Offshore
Wind Clusters in Europe



4.3.3 Impact

A National Offshore Wind Cluster would provide a vital platform for discussion, cooperation and collaboration between industry, academia, and the public sector. It would support Ireland's ambition to build a strong and resilient offshore wind industry through:

- Networking events designed to foster relationships and information sharing between SMEs, large industry, and the research, development and innovation (RD&I) sector; this will boost their ability to be competitive in tendering for contracts or in renewable energy auctions.
- Mentorship programmes designed to allow SMEs to benefit from the experience of established industry players and experts from Ireland and abroad.
- Assessing partnership potential, identifying synergies in companies' skills/capacities and matching compatible companies.
- Market study visits to collaborate on international best practice and partner with peers across the sector.
- Horizon scanning for upcoming tenders and notification of suitable candidates.
- Education and training, including mapping of skills availability and offerings, as well as developing courses in conjunction with higher level institutions (universities/technological universities), further education bodies (Education and Training Boards) and State bodies (e.g., Skillnet

and SOLAS) in order to address skills requirements and ensure an adequate supply of skilled labour; providing technical training, business development support, procurement training, opportunities to trial new machinery and technology at the pre-investment stage through partnership with innovation centres (e.g., Future Manufacturing Ireland) etc.

- Facilitating greater engagement with EU industrial ecosystems, industrial alliances, and Important Projects of Common European Interest (IPCEI).
- Fostering strong links between multinationals and indigenous firms and strengthening Ireland's attractiveness to FDI.

It would also strengthen the RD&I sector to support offshore wind development by:

- Strengthening collaboration between industry stakeholders and researchers, to collectively identify areas in which innovation will address gaps or increase cost-efficiency while accelerating the commercialisation and use of new knowledge and ideas.
- Aligning with existing test sites, the proposed test site and OWCE to facilitate top-tier RD&I in Ireland.

Actions	Deadline	Owners
11 Through engagement with industry partners, raise awareness of and encourage participation in national competitive call for clusters.	Throughout 2024	DETE, EI, IDA, SEAI, MI, IMDO

Case Study



DP Energy, one of Ireland's leading developers of renewable energy projects, is head-quartered in Cork and operating across the world. With a global reputation spanning 31 years, the Company has developed 1.6GW of large-scale renewable energy generation assets since 1993. DP Energy was founded with a commitment to using the most sustainable and environmentally responsible methods possible across all its energy developments, a commitment that remains central to the Company's activities today. DP Energy is operating in Canada, Ireland, the UK and Australia and across multiple technologies including onshore & offshore wind, solar, renewable energy storage and hydrogen & derivatives solutions. The Company consists of an international team of highly experienced engineers, marine scientists, planning experts, project managers, environmental managers, and financial, legal and technical experts.

DP Energy has engaged with MaREI through four separate collaborative research projects, which were part-funded by both the company and Science Foundation Ireland (SFI). Focusing on delivering innovations across the ORE supply chain, these include partnerships on the EirWind project, involving a consortium of industry partners focused on developing a blueprint for offshore wind energy development in Ireland, and the ongoing H-WIND project, which focuses on the activation of new markets for hydrogen generated from offshore wind energy. In addition, DP Energy and MaREI have partnered through the SFI Industry RD&I Fellowship Programme to support the temporary placement of MaREI researchers with DP Energy.

This partnership has directly supported innovation and competitiveness in the industry partner with application to ORE and hydrogen opportunities. It has delivered multi-disciplinary research solutions to defined technical problems and has provided a platform for increased sectoral collaboration and convergence through the EirWind and H-Wind projects. It has furthermore facilitated additional collaboration between MaREI and DP Energy on successful EU funding opportunities and has supported the transfer of key MaREI researchers into technical roles within the company.

5. Foreign Direct Investment, International Supply Chain and Global Opportunities

5.1 International Partnership

5.1.1 Background/Overview

IDA Ireland, an agency of the Department of Enterprise, Trade and Employment, is one of the world's leading FDI agencies. Established in 1948, IDA Ireland has been at the fore of industrial development in Ireland for 75 years.

The goals and objectives of IDA Ireland's strategy *Driving Recovery and Sustainable Growth 2021 – 2024* are closely linked to Ireland's *National Climate Action Plan* and the *White Paper on Enterprise 2022 – 2030*. Working hand in hand with government, stakeholders and EI, IDA Ireland partners and collaborates with international investors and companies, to grow their business, to complete new groundbreaking research and innovation, and to develop a rich, vibrant, talent capability for the needs of industry.

Ireland's partnership with FDI is a global success story that annually contributes over €35 billion to the Irish economy, through employment, R&D, capital expenditure and corporate tax. There are 1,800 global, brand name FDI clients employing 300,000 people throughout Ireland. Investors have significant regional and global 'corporate and operations' centres in Ireland, primarily across five key sectors: Life Sciences, Technology, Engineering, International Services and Financial Services.

The strength of Ireland's capability, to build, grow and deliver on the vision and ambition for offshore wind will grow from a rich base of established capability and talent, industry's track record of success, and the development of new partnerships and new collaborations.

Development of an offshore industry and international supply chains in Ireland is a competitive necessity to win FDI. The *White Paper on Enterprise 2022-2030* highlights decarbonised and sustainable energy supplies as a fundamental driver of competitiveness. Countries with relative competitiveness on green energy, energy costs and security of supply will be best placed to retain and attract investment in the sectors most likely to drive growth in the 2030s global economy.

Based on the International Energy Agency's (IEA) most recent assessment of current energy, climate and industrial policies, the global economy is on track to see all fossil fuels peak before 2030. For every \$1 spent on fossil fuels, \$1.80 is now spent on clean energy technologies and related infrastructure, compared to a ratio five years ago of 1:1. If Ireland remains in a stage of green transition when other leading FDI locations have already transformed, Ireland will be at a notable competitive disadvantage in a fundamental area of FDI attractiveness. Additionally, should Ireland remain relatively reliant on fossil fuels, compared to competing locations, FDI investment in Ireland may face relatively higher energy costs as carbon prices increase; lower

energy security (e.g., due to geopolitical disruption to fossil fuel markets); and misalignment with corporate level climate targets.

5.1.2 Rationale

International competition for resources is increasing across all international markets, as demand for necessary offshore wind-related equipment rises. Industry capacity in the EU and other locations will need to grow significantly across the ecosystem, for governments and investors to meet development targets. This global growth underscores a new opportunity for FDI in Ireland and could compliment and support Ireland's development timelines, supply chain security, talent pipelines, and a strong industry-led R&D agenda.

The offshore wind supply chain is a global and dispersed ecosystem of highly specialised and technical companies, typically divided into three tiers. A key part of IDA Ireland's 2021 -2024 strategy and continuing goal in IDA Ireland's new strategy 2025 – 2029 will be to win new international investment, and to target strategic FDI in each Tier of the offshore value chain.

- Tier 1 - Large established international contractors working directly with wind farm developers. For example, OEMs involved in the design, engineering, fabrication and manufacture of key components such as the blades, turbines, foundations, substations, and transmission cables.
- Tier 2 - Specialised goods and services contractors critical to the development of wind farms, e.g., deep sea engineering services, manufacturing of certain components such as cable systems, substations or companies that provide logistic services.
- Tier 3 - Niche products and services to the OSW industry such as marine or geo-technical surveys, specialised engineering services or specialised components.

IDA's current strategy 2021 – 2024 has been successful in attracting and supporting investment and operations from a number of strategic international Tier 1 and 2 companies. IDA Ireland's goal is to support and work with international companies that will complement the delivery of Ireland's offshore wind targets.

5.1.3 Impact

Working with FDI clients will enable the development of a strong and vibrant offshore wind ecosystem in Ireland; winning new investment will directly strengthen Ireland's economic value proposition for all FDI investors in all locations in Ireland. Impact examples include;

- An abundance of renewable energy would underpin a highly attractive next generation Irish value proposition to retain and develop FDI in

strategic, advanced manufacturing, international services, and energy intensive sectors.

- Offshore wind renewable energy value chains will support and strengthen regional development particularly given the geographical spread of development locations. The development of the sector and potential adjacent activities have the potential to create new clusters of opportunity in regional locations.
- Achievement of offshore wind targets will be key to the decarbonisation of industry targets included in Ireland's Climate Action Plan supporting established industry on their decarbonisation journey through electrification, energy storage and the use of fossil fuel alternatives for high temperature manufacturing processes.

Actions	Deadline	Owners
12 IDA Ireland strategy 2021 – 2024: Continue to target and support FDI 'Sustainability and Green Economy' investment commitments.	Q4 2024	DETE, IDA
13 IDA Ireland strategy 2025 – 2029: Ensure clear goals and objectives are set to win and support FDI investment in the offshore wind sector.	Q4 2024	DETE, IDA
14 Compete internationally to win large investments of scale from strategic FDI, that complements both the development of Ireland's offshore wind capability and the growth of new 'high value' investment types.	Ongoing	DETE, IDA
15 Collaborate closely to ensure partnership opportunities with international companies in the offshore wind sector can be maximised.	Ongoing	DETE, IDA, EI
16 Work closely with DETE and other Departments to ensure the appropriate support mechanisms and funding schemes are in place to support the development of international offshore wind FDI.	Q2 2024	DETE, IDA

Case Study



Venterra Group is a privately owned, UK-headquartered offshore wind energy engineering services company that provides best-in-class engineering services across the full offshore wind 'supply chain'. Gavin & Doherty Geosolutions (GDG), a subsidiary of Venterra Group, is the Dublin-based global engineering and business services hub for Venterra Group that addresses the Irish, European, Asian, and North American markets. GDG provides innovative engineering solutions to some of the most challenging offshore wind, marine and infrastructure projects around the world. GDG's team of specialist engineering consultants focus on innovative, cost-effective, and sustainable design solutions for clients. They provide support to clients from early works to detailed design stage and installation consultation for offshore windfarms.

Current mooring and anchor solutions for floating offshore wind are very expensive to make and logistically challenging to deploy, a problem which is exacerbated by the lack of supply chain capacity to meet the demands of a rapidly scaling industry. GDG identified an anchoring concept for floating offshore wind that can be deployed much more efficiently than current technology, in even the harshest of offshore wind locations. To progress this concept to a commercial proposition, significant investment was required for high level engineering design. IDA has supported initial development and feasibility, allowing GDG to de-risk a multi-million euro RD&I investment of this technology in Ireland. GDG has also utilised a number of funding sources including SFI, Irish Research Council (IRC), SEAI, which has facilitated extensive collaboration and participation between GDG and University College Dublin in a number of projects. These projects demonstrated the potentials and pitfalls around using AI for real and complex offshore data assessing the geotechnical strengths of sites through cone penetration tests. The possibilities and limitations of Machine Learning to accentuate and enhance existing datasets were also explored and a first benchmark evidence base using Ireland's offshore conditions was created.

The support from IDA Ireland allowed GDG to determine the high-level feasibility of the engineering proposal, develop design concepts, and establish the testing and piloting activity required to bring this concept to market. GDG will continue to invest in this development in Ireland because of this support. The research work supported by various funding sources including SFI, IRC and SEAI, is innovative as it brings in AI into conventional geotechnics and geoscience and this enables smarter interpretation of site data for design. The work establishes a pathway towards developing guidelines, recommendations, authoritative evidence bases and eventual best practice of responsible usage of AI in the offshore wind sector.

5.2 Pursuing Strategic Partnerships & Establishing Recognition of Ireland as a High-Potential Market

5.2.1 Background/Overview

International strategic partnerships can unlock opportunities for Ireland to both participate in international OWE supply chains, and benefit from existing international expertise as we develop our own OWE sector. Existing Cooperation Alliances, MoUs, and Declarations of Intent (DoI) with key European partners offer an opportunity to establish meaningful cooperation in supply chain development which can in turn help to develop domestic capability and capacity:

- In 2023, Ireland signed an *MoU with the United Kingdom (UK)* on energy transition, offshore renewables, and electricity interconnection cooperation. The MoU is designed to facilitate closer cooperation between the two countries in these areas, and to establish a framework to enable this. ORE, and in particular the supply chain, is specified as one sector for this.
- Ireland signed a *Joint DoI on Energy Transition Cooperation with France* in November 2023. The DoI provides a framework for the mutual willingness of both countries to accelerate the decarbonisation of energy systems and is part of a wider collective ambition for Europe to become the first climate neutral continent by 2050. Included in the DoI is a commitment to accelerate the deployment of offshore renewables and ORE systems, including intensifying cooperation on offshore energy, bilaterally and regionally in the North Sea. The two countries also signalled their intent to cooperate on increased interconnection, offshore transmission, and green hydrogen.
- In 2019, Ireland and Scotland initiated the *Ireland-Scotland Joint Bilateral Review* to consolidate existing ties between the two countries and explore further areas of potential cooperation. The review highlighted the potential for cooperation in the area of ORE, among others, with this focus being reaffirmed during the most recent progress review in July 2023 when agreement to pursue significant policy engagement in this area was again highlighted.
- In 2018, the first *Germany – Ireland Joint Plan of Action (JPoA) for Enhanced Bilateral and EU Cooperation* was agreed. Initially, the JPoA encompassed cooperation between the Irish and German Ministries responsible for agriculture, economy, foreign affairs, and finance, with additional line Ministries from both jurisdictions joining the second JPoA. A third JPoA is expected to be launched in 2024, representing an opportunity to include new actions relating to OWE.

- The **NSEC** supports collaboration between the North Seas countries towards unlocking the region's full potential for renewable energy production, including development of the offshore grid. Ireland is a member of this group along with Belgium, Denmark, France, Germany, Luxembourg, the Netherlands, Norway, Sweden, and the European Commission.

Bilateral agreements at industry/sector level, such as the MoU between EirGrid and the French Transmission System Operator (TSO), Réseau de Transport d'Électricité (RTE), can unlock opportunities for companies in Ireland to participate in international projects and develop the necessary skills to serve Irish projects in the longer term. In addition, significant work has been done in developing collaborations and cooperation with ports in the UK, France, Portugal and Spain.

DETE will also seek opportunities to develop additional partnerships or collaborations with European and global partners and organisations that will enable knowledge transfer between policy makers as well as Irish-based companies, RPOs, and their counterparts. Additionally, such partnerships and collaborations should allow for the growth of companies and RPOs along the supply chain in Ireland.

Ireland's participation in international cooperation agreements and collaborative networks will be maximised to advance the development of international OWE supply chain opportunities.

All-island Cooperation

InterTradeIreland (ITI), the North South implementation body responsible for trade and business, is currently developing a research project to explore offshore wind opportunities. This research project will examine how renewable energy can contribute to meeting the net zero targets of both jurisdictions on the island. It will particularly focus on the potential of offshore wind, and how an all-island approach could contribute to delivering its benefits more quickly and at a larger scale.

Key considerations will include supply chain opportunities for SMEs, how green hydrogen could contribute to successful implementation and operation of offshore wind, how all-island infrastructure (such as ports and the all-island electricity market) could accelerate construction and delivery, and the wider economic benefits of sustainable, low carbon power generated locally.

5.2.2 Rationale

Recent global crises such as the COVID-19 global pandemic and the Russian invasion of Ukraine in February 2022 have resulted in a significant acceleration in the global energy transition as countries seek to move away from Russian-supplied fossil fuels while increasing targets for renewable energy production.²⁶ In terms of OWE, there were 35GW of installed capacity globally in 2020, and the cumulative global target for 2030 is 330GW, rising to 657GW by 2050. Included in this is a combined target of 260GW by 2050 among the NSEC countries, which includes Ireland.

Such an ambitious ramp-up in OWE development has already exposed a number of supply chain and regulatory bottlenecks that could impact the ability to deliver on these targets.²⁷ In Europe, slow permitting, increased cost inflation of raw materials and logistics, dependency on imports of raw materials, growing demand for larger turbines, and competition from China, among other issues, are placing a constraint on the continent's capacity to deliver. While these are challenges that will need to be overcome in order for countries like Ireland to deliver on our ambitious OWE targets, they also present an opportunity for Ireland to build an OWE supply chain by scaling up Irish SMEs' capability and capacity, and as a potential location for FDI investments.

5.2.3 Impact

Maximising Ireland's participation in international cooperation networks and utilising existing agreements with other countries can provide a gateway for the nascent Irish OWE sector to tap into international supply chain opportunities in a way that provides new business opportunities, as well as capacity building for domestic projects.

26. <https://windeurope.org/intelligence-platform/product/the-state-of-the-european-wind-energy-supply-chain/>

27. *Ibid.*

Actions	Deadline	Owners
17 Utilise Ireland's membership of Cooperation Alliances such as NSEC, and existing bilateral agreements with European partners to advance the development of international OWE supply chain opportunities.	Ongoing	DETE, IDA, EI
18 Identify potential new actions for inclusion in the third Germany – Ireland JPoA focused on cooperation in the area of OWE supply chains.	Q4 2024	DETE
19 Seek opportunities to develop strategic partnership with other countries or organisations, including in the form of MoUs or Dols, to enable knowledge sharing and growth of the supply chain in Ireland.	Ongoing	DETE
20 Promote Ireland as a high potential OWE market through ministerial trade missions and active participation in international conferences, trade shows and other major OWE sectoral events, including through engagement with industry representative bodies.	Ongoing	DETE, EI, IDA, DECC
21 Lead a fact-finding mission with key stakeholders to Esbjerg port to see how it has developed to support the offshore wind supply chain.	Q4 2024	DETE, EI
22 Engage with Northern Ireland's Department for the Economy and ITI on potential all-island OWE supply chain opportunities.	Ongoing	DETE, EI, IDA, ITI
23 Establish an annual joint event with Scotland aimed at promoting inter-Governmental dialogue and engagement with industry in the area of renewable energy.	Q2 2024	DETE

6. Research, Development, and Innovation

As evidenced in *Impact 2030*, Ireland has an excellent Research, Development and Innovation (RD&I) capability covering early-stage development, commercial to deployment.²⁹ Investment in RD&I capability over the past 20 years has had a significant impact on Ireland's industrial development, contributing to job creation and economic prosperity.³⁰ Focused investment in RD&I in the offshore wind sector both complements existing industry capability and will strengthen Ireland's offering to grow and build offshore wind projects.

29. *Impact 2030*.

30. *Ibid.*

The greater the innovation companies in Ireland can bring to the offshore wind sector, the more successful Ireland's supply chain will be. It is well established that investment in innovation is linked to higher productivity and increased sales. To incentivise increased investment in innovation, Government will provide targeted, longer-term funding measures that are customised to each company's unique needs. This will include focused initiatives to strengthen enterprise and research innovation collaboration at national (e.g., *Disruptive Technologies Innovation Fund*) and EU level (e.g., *Horizon Europe, Eureka*), alongside agency-led initiatives targeting increased in-company R&D. It will also be necessary to increase industry collaboration and investment with the Irish and international research ecosystem, working closely with major research funding bodies, such as SFI, SEAI and the MI, to develop joint actions targeting the offshore wind supply chain. Additionally, it will be necessary to support the adoption of technology at company level, particularly digital technologies, to augment competitiveness.

Increased investment in RD&I will speed up deployment of Irish offshore wind projects by encouraging the development of new technologies and ways of working in the offshore wind sector and will help produce the highly educated and relevant workforce required to deliver this strategy. The development and deployment of new technologies & processes from companies in the supply chain will help to mitigate risk to Ireland's offshore wind targets and increase their ability to win new business both at home and overseas where innovation gives a commercial advantage. Increased collaboration between SMEs, international companies, government agencies, research centres, and further and higher education institutions to achieve the aims above and improve technology readiness are presented in this Strategy.

The forthcoming SEAI report *Offshore Renewable Energy Roadmap for 2050* describes the more advanced technical and commercial status of fixed offshore wind versus floating offshore wind:

- Fixed: The most modern technology currently under construction/in operation is on commercial 1GW+ projects using 13 megawatt (MW) turbines.
- Floating: The most modern technology currently under construction/in operation is on demonstration 0.1GW projects using 8MW turbines.

The SEAI report also predicts key future developments for both technologies. For fixed offshore wind, larger turbines with increased reliability are envisaged. Turbine foundations are likely to be optimised for deeper waters, the cost of export systems should decrease and offshore operations will be made more efficient. For floating offshore wind, similar technological developments and significant refinement of fundamental floating concepts are expected. Industrialisation of hull manufacturing is likely, along with improvements to dynamic cabling, mooring and anchor systems. As the technology evolves, new installation, operation and maintenance methods will emerge. These predictions do not exclude significant other innovation potential in the RD&I as collaboration intensifies within the offshore wind RD&I ecosystem in Ireland.

The report also highlights a selection of potential technology development themes closely aligned with Ireland's established industries, research capability, knowledge and skills, all of which are relevant to all ORE technologies. These include offshore wind, including materials development, additive and advanced manufacturing, device component manufacture and steel production; big data, analytics and digital twins; AI and machine learning; on-site robotics and autonomous technology; and IoT and sensing technology.

Informed by the technology themes identified in the SEAI report above, DETE will bolster its RD&I Subgroup in 2024 with a renewed focus, new terms of reference and work plan for 2024, as well as considering extending the current membership. The RD&I Subgroup will play a crucial role in building a consensus on the sectors and technologies which can deliver a competitive advantage for Ireland in offshore wind. The combined impacts of these activities will be to increase the market readiness and cost competitiveness of companies in Ireland operating in offshore wind at home and abroad, with significant progress envisaged by 2030.

The planned publication in mid-2024 of a new national marine R&I strategy for Ireland entitled, *Ocean Knowledge 2030*, will also provide strategic RD&I goals for the ORE sector, including wind energy. Coordinated by the MI, the strategy will address RD&I needs across several key blue economy sectors. For ORE, the MI is working closely with SEAI and DECC to identify the key knowledge gaps, RD&I actions and supports needed to contribute to sustainable development of the ORE sector.

The policies and actions that follow in this section describe specific initiatives that aim to build on the progress already made by the many Irish based companies, Government Departments and agencies, research centres, and further and higher education institutions on offshore wind RD&I. They will kickstart from April 2024 a stream of co-ordinated and strategic national RD&I activity, to make Ireland a leader in offshore wind.

6.1 Fostering an Offshore Wind RD&I Ecosystem

The proposed Offshore Wind Centre of Excellence would be an industry-led national centre that would enable Irish-based offshore wind supply chain companies, government agencies and further and higher education institutions to access, adopt and accelerate new digital technologies that solve real world challenges and collaborate to drive the sector's future competitiveness.

6.1.1 Background/Overview

National Offshore Wind Centre of Excellence (OWCE)

The vision for an OWCE would see, in the coming years, the establishment of an industry-led facility focusing on specific area(s) of offshore wind where Ireland can establish itself as a world leader. Once developed, an OWCE would bring together industry and academic expertise, fostering collaboration, research and innovation in offshore wind.

With a smaller geographical area than other countries, e.g., the UK, where multiple regional ORE Catapult centres of excellence (CoEs) exist, an OWCE in Ireland would be a national resource for the entire offshore wind industry and would bring together our existing well-established ecosystem, where research is ongoing on a range of ORE areas. An OWCE would be industry-led and would prioritise and link up applied research in key technology areas to solve identified industrial challenges, thereby accelerating the growth of Ireland's offshore wind sector.

Work to progress the development of such a CoE, which will take a number of years to establish and build, will be undertaken during the first iteration of this Strategy.

Fourth Test Site: Floating Offshore Wind Demonstrator

Ireland has a maritime territory approximately ten times the size of its land area, with our EEZ approximately seven times our land mass. This is a sea area providing prime wind energy, given the strong, consistent wind supply. Floating offshore wind technology has been deployed in a small number of sites but has not yet been developed to the point of maximising this asset particularly in more challenging marine environments. Fixed bottom wind turbines are at the point of widespread commercialisation; however, the vast majority of Ireland's EEZ is beyond the depth capable of hosting fixed bottom structures. Therefore, floating offshore wind is essential to achieve Ireland's offshore wind targets.

Regulatory sandboxes generally refer to regulatory tools, allowing businesses to test and experiment with new and innovative products, services or businesses under supervision of a regulator for a limited period of time – *European Parliament*²⁸

Regulatory Sandboxes

Regulatory sandboxes have been successfully introduced for the Fintech sector and are increasingly becoming common place for digital technologies. The *EU's Renewable Energy Directive* provides scope to create regulatory sandboxes to foster innovation in the renewable energy sector, and the proposed *Net Zero Industry Act* introduces the concept of regulatory sandboxes for the green tech space, including for offshore wind. The European Commission have published a Staff Working Document, providing guidance for sandboxes, as announced in the *New European Innovation Agenda*, to support Member States in preparing the regulatory sandboxes, in particular, in relation to renewable energy.

Companies engaged in a regulatory sandbox receive a waiver from specific legal provisions, which allows them to innovate in a controlled real-world environment under the supervision of the relevant competent authority. This allows companies, including SMEs and start-ups, to develop, test, and validate their products before bringing them to the market for wider deployment.

6.1.2 Rationale

Research focused on marine and renewable energy is ongoing in Ireland with notable examples emerging from MaREI, the SFI Research Centre for Energy, Climate and Marine; Next Generation Energy Systems (NexSys), an SFI funded all-island energy research programme; and iCRAG, the SFI Research Centre for applied geoscience. These large-scale multidisciplinary research programmes are each distributed across several physical locations and engage in deep collaboration with industry (SMEs and multinational corporations (MNCs)). A number of EI/IDA Ireland Technology Centres including Irish Manufacturing Research (IMR), CeADAR, the Microelectronics Circuits Centre Ireland, Construct Innovate, and the Centre for Renewable Energy Technology Gateway at Dundalk IT (CREDIT), an EI Technology Gateway, are also progressing industry-led applied research projects related to offshore wind.

A dedicated, industry-led OWCE would provide a platform for collaboration and an opportunity to build on the existing research expertise to progress commercially-focused offshore wind RD&I further uniting industry, further and higher education institutions, and government.

Additionally, three marine test centres currently exist in Ireland: Lir National Ocean Test Facility, Co. Cork; SmartBay Marine and Renewable Energy Test Site, Co. Galway; and Atlantic Marine Energy Test Site (AMETS), which is currently in development in Co. Mayo. SmartBay is Ireland's national marine test and demonstration facility managed by the MI for the development of innovative technologies and services for the global maritime sector. The test site facilitates lower cost sea trials and validation of ORE devices,

31. [Artificial intelligence act and regulatory sandboxes \(europa.eu\)](https://european-council.europa.eu/media/en/press-communications/infographic/infographic-artificial-intelligence-act-and-regulatory-sandboxes.pdf)

components, sub-systems, and moorings at various technology readiness levels. The relatively sheltered nature of SmartBay allows developers to test and validate devices in more benign conditions than those experienced in the open Atlantic Ocean.

AMETS was initially proposed to test wave energy technology, but is also suitable for testing floating offshore wind (FLOW) devices and has recently been focused on that purpose. AMETS will test second and third generation FLOW technologies (high Technology Readiness Level technologies) that are looking to validate technology in the Atlantic or looking to optimise their design prior to larger-scale pre-commercial or commercial deployment. It will also test hybrid technologies, as well as sub-system (novel anchoring and mooring configurations or dynamic cabling for example) and components (such as load reduction devices). The energetic conditions at AMETS and associated accelerated loading on technologies also have the potential to demonstrate the resilience of the technologies tested to changes in conditions projected due to climate change. Due to the significant costs associated with offshore wind technology development, the size and scale of AMETS are suited for these purposes.

While both SmartBay and AMETS retain their value as testing facilities, the need has arisen for the development of a significantly larger demonstrator specific to floating offshore wind. This would offer scope for the significant development of floating technology necessary to maximise Ireland's future offshore wind energy potential up to 2050 and achieve our decarbonisation targets. Fixed foundation wind turbines are generally deployed in depths of 60 metres or less, while, beyond this depth, floating wind turbines are likely to form a significant part of deployment in the future.³² As mentioned previously, much of Ireland's EEZ lies beyond fixed foundation depth. In addition, severe metocean conditions on the West Coast make deployment particularly challenging. A demonstrator site of significant scale and in a carefully chosen location would be a unique selling point to the global offshore wind market, offering the opportunity to test technologies such as mooring and subsea cabling in the harshest conditions with a specific mission to commercialise them as rapidly as possible.

This demonstrator site would address RD&I in:

- Deployment of pre-commercial or commercial FLOW technologies in Irish waters, demonstrating both long-term survivability and bankability;
- Performance of FLOW in Celtic or Atlantic conditions including financial and technical performance;
- Understanding of installation, O&M and decommissioning of FLOW in Irish waters, further away from existing OW markets and support services; and
- Complimentary technologies – e.g., digital via remote monitoring and other technologies which make the specific O&M of floating offshore wind more efficient.

Feasibility studies and business cases will be progressed for both an OWCE and new FLOW Demonstrator in 2024 with detailed project plans being developed during this phase. It is proposed that the two entities would be strongly linked through shared objectives and work programmes as well as other enablers of collaboration.

6.1.3 Impact

In the short to medium term, DETE's RD&I Subgroup will work with the existing Research Centres mentioned. For the longer term, work will begin in 2024 to undertake a feasibility assessment and establish a business case for a new, industry-led OWCE.

This feasibility phase will centre on identifying those areas where increased collaboration and knowledge sharing, along with a purposeful shift from academic to applied research, can establish a 'halo effect' for Ireland's global competitiveness in offshore wind.

From 2024, DETE will lead, via its RD&I Subgroup, on focused measures to improve industry engagement with the existing test sites applicable to offshore wind RD&I. Work will also begin in 2024 to examine the possible development of a new Floating Offshore Wind Demonstrator. This will be led by DECC and SEAI with close involvement from DETE, EI, IDA Ireland and MI, as well as the DFHERIS and SFI, via the DETE RD&I Subgroup.

32. Water depth is not a hard limit when deciding fixed versus floating, other factors, like seabed composition, are also considered. (<https://www.energy.gov/sites/default/files/2023-03/advancing-offshore-wind-energy-full-report.pdf>)

Actions	Deadline	Owners
24 Engaging with existing structures, identify RD&I focus areas/major challenges facing industry in relation to OWE.	Q4 2024	DETE (DETE RD&I Subgroup)
25 Progress the development of an OWCE including a feasibility study and developing a detailed project plan for delivery with delivery of same subject to funding approval.	Q2 2025	DETE
26 Investigate the feasibility of a floating offshore wind demonstrator site.	Q3 2024	DECC, DETE
27 Develop a plan to promote engagement with and use of existing marine test sites.	Q3 2024	DETE (DETE RD&I Subgroup)
28 Maintain State support for our existing or planned test sites and explore the feasibility of supporting additional test sites.	Ongoing	DECC, SEAI, MI
29 Examine the case for the development of a regulatory sandbox for offshore wind and related technologies.	Q2 2025	DETE

Case Study



Established in 2015, Exceedence Ltd. is an Irish financial software and advisory company specialising in the renewable energy sector with specific expertise in offshore energy. The newest Exceedence product is exfin, a cloud-based technical financial modelling platform which supports the entire renewable project journey, from pre-feasibility to final decommissioning of any offshore wind, tidal, wave or floating solar facilities. Exceedence Ltd. is a spin-off from University College Cork's (UCC) Environmental Research Institute.

In 2020 Exceedence received significant support from EI through the Equity for R&D programme. The company was already developing their cloud-based software and was experienced in R&D, however the application to EI focused on several road map items to get the software commercially and market ready for the offshore wind sector. This productisation focus was key to the success. Through engagement with their Development Advisor in EI, Exceedence were able to focus their application on what the company needed most. EI also provided access to several industry mentors to help validate their plan. At the time, the company had just completed a private equity funding round and was able to leverage this in conjunction with the support from EI, so Exceedence were able to achieve significant steps forward.

The project support from EI was over a 3-year period and Exceedence were able to develop and launch the cloud-based offering within that time. Exceedence increased and developed their software team capabilities, hired a key commercial manager, and engaged with EI offices in the UK, France, Scandinavia, USA, and Australia. This has all enabled Exceedence to win work in the UK, EU, Norway and even Australia. The company have also won tenders much closer to home, providing expertise using their software on several frameworks with SEAI and DECC. Exceedence is proud to have been shortlisted on those panels as they are alongside other recognised players in their sector and could not have achieved this without EI support.

6.2 Increasing Investment in RD&I Related to Offshore Wind

6.2.1 Background and Rationale

While some companies in the offshore wind supply chain have world class R&D programmes, there are a significant number of companies in the supply chain spending less than €100,000 on RD&I each year. Given the scale of the opportunity, and the demand for innovative solutions to aid the deployment of offshore wind across the globe, it is imperative that companies take a more proactive approach to innovation in order to thrive in the offshore wind sector. A key driver in ensuring that this happens will be to support companies, especially SMEs, to navigate the innovation support landscape and to work hand in hand with them to incentivise increased investment in market-led innovation.

SFI, EI, SEAI, IDA Ireland and the MI all offer an extensive range of programmes and supports to promote investment in RD&I and to aid companies and RPOs in their RD&I journey. These are in addition to European initiatives such as IPCEI and Horizon Europe. A list of these programmes and supports can be found in Appendix E.

6.2.2 Offshore RD&I Showcase and Access to Funding Events

In 2024, DETE will commence an annual programme of events as a showcase of offshore wind RD&I success, to encourage more investment in RD&I within the industry. In 2024, it is envisaged that a one-day in-person conference-type event will take place in a regional location strategically important for offshore wind, plus webinars, to feature:

- RD&I success stories: In which Irish companies will give talks, demonstrations, and engage their peers around research and innovation success, detailing company milestones, RD&I projects, collaborative partnerships, type and origin of RD&I funding, etc.
- Multi-agency access to funding workshops: In which Government Departments and/or agencies, such as DETE, DECC, DFHERIS, EI, IDA Ireland, SEAI, SFI, MI, the Strategic Banking Corporation of Ireland (SBCI), that have a stake in funding Irish-based companies and RPOs can describe in detail what funding is available and how to apply.

Subject to participation from industry, a similar series of events will be repeated from 2025 onwards.

6.2.3 Offshore Wind RD&I Communications Campaign

Making use of existing Government networks and communications platforms, DETE, in collaboration with relevant Department and agencies, will curate an ongoing communications campaign to highlight offshore wind industry-driven RD&I success stories, funding schemes and cross-Government efforts in relation to research and innovation.

Actions	Deadline	Owners
30 Hold Offshore RD&I Showcase and Access to Finance Event in addition to online workshops highlighting supports available to organisations along the OWE supply chain.	Q4 2024	DETE
31 Develop communications campaign to promote RD&I opportunities.	Throughout 2024	DETE
32 EI call for in-company research for offshore wind with up to €5 million in funding available for approval.	Q4 2024	DETE
33 Promote participation in DTIF for organisations engaged in RD&I for offshore wind and associated sectors.	Ongoing from 2024	EI
34 Promote participation in the SFI Strategic Partnership Programme and SFI Spoke Award Programme.	Rolling Call	SFI

Case Study



Subsea Micropiles is pioneering the adaptation terrestrial micropiling technology to the offshore construction sector for high-performance seabed foundations and anchors, supporting a wide range of applications to include ever larger offshore wind turbines at much lower cost and with a small environmental footprint.

Following a programme of research that began over ten years ago, Subsea Micropiles and its partners have benefited from a €2.9 million grant contribution awarded in 2021 under the Disruptive Technologies Innovation Fund (DTIF). The funded project has supported the successful development and testing of a first-of-its-kind robotic subsea drilling system for offshore construction, the qualification of new drilling methodologies, as well as the design, fabrication, and testing of micropiled anchors.

The DTIF grant provided a valuable focal point and financial incentive for industry and academic collaboration in the areas of subsea robotics, drilling technology, geotechnical engineering, manufacturing, and geophysical survey. These new partnerships help position Subsea Micropiles as a disruptive global foundations company and Ireland as an offshore foundations research centre of excellence.

7. Ensuring Balanced Regional Economic Development from Offshore Wind



The *Programme for Government* highlights the importance of enabling all parts of Ireland to thrive so that Ireland as a whole can prosper. This is echoed in the *White Paper on Enterprise 2022-2030*, a central component of which is to support balanced regional economic and enterprise development. As an island nation, Ireland's ORE potential stretches right around our coast and represents significant potential as a driver of economic development in those coastal regions and adjacent rural communities. Such areas are expected to benefit from the development of an OWE industry in Ireland, representing a real opportunity to pivot the existing skills, infrastructure, and other capabilities of those regions to the OWE sector, while also benefitting from new investments which are anticipated as new OWE projects come on stream.

In addition, consultations with industry carried out as part of the development of this Industrial Strategy highlighted the potential for enterprise sites to develop around locations central to the deployment and operation of OWE projects, such as port areas. These enterprise sites would service the development of OWE projects and provide economic benefits to the wider regions in terms of new high quality jobs and provide an important driver of balanced regional economic development. A key part of this Strategy is to leverage existing regional initiatives to advance these opportunities.

7.1 Regional Enterprise Plans

7.1.1 Background/Overview

In early 2022, DETE launched nine new *Regional Enterprise Plans* (REPs) to 2024. The nine REPs have been developed by regional stakeholders, enterprise agencies, local enterprise offices, regional skills fora, and education and training institutes. They are overseen and monitored by regional Steering Committees made up of representatives from the public and private sectors and led by a representative from the business community.

The REPs provide an effective forum for facilitating regional collaboration and play a central role in advancing the economic development potential unique to each respective region, maintaining a strong focus on strengthening the enterprise ecosystem and thereby supporting job creation in each region. €145 million has been secured under the *Smart Regions Enterprise Innovation Scheme*, co-funded under the *ERDF* to assist projects aligned with the REPs, to support enterprise activity, and promote growth in each region. Offshore wind energy and the resulting opportunities for green industrial development represent a key area of regional potential as reflected in several REPs.

7.1.2 Impact

In recognition of the scale of the opportunity that offshore wind represents throughout Ireland, each REP Steering Committee was requested to consider whether offshore wind opportunities could be enhanced in their current plans.

Currently, six of the nine REPs include strategic objectives or actions to advance their region's transition to a low carbon economy, some of which include a focus on offshore wind. The North-West, South-West, and South-East REPs have initiated plans to establish offshore wind-focused working groups, bringing together local stakeholders to deliver on offshore wind-related objectives and actions, while also identifying new opportunities in the sector. The South-West REP has established a working group to enhance the coordination of the REP's Offshore Wind actions, focusing on closing the supply chain gaps, building cooperation and strengthening RD&I, and building on the strong infrastructure and ecosystem in the region. The South-East REP has established a group with the ambition to develop a strategy for the region to capitalise on the offshore wind opportunity, as well as feeding into the Offshore Wind Industrial Strategy. The West, Mid-West and North-West REPs jointly commissioned a report to assess the potential employment and wider economic impacts of developing an offshore wind industry of scale. Further feasibility studies, market study visits, and a range of other work in the offshore wind sector has been undertaken in the regions.

The REP structures in relevant regions are well placed to facilitate the collaborative work and implementation of objectives and actions necessary at regional level to ensure that the maximum economic benefit associated with our 37GW ORE target is experienced throughout Ireland. The objectives of this national-level Strategy will inform the bottom-up development of actions related to OWE in future *Regional Enterprise Plans*.

Case Study



ÉireComposites is an innovative design, manufacturing and testing company, established in 1998 as a spin-out from University of Galway. The company specialises in the design, manufacture, and testing of lightweight, high-performance, fibre-reinforced composite materials, and has an international customer base in the space, aerospace, marine, renewable energy and industrial-composites industries.

MaREI has grown its relationship with ÉireComposites from a single engagement at the University of Galway to three separate collaborative research projects, part-funded by the company and Science Foundation Ireland and focusing on technical innovations relating to the design, manufacture and testing of lightweight high-performance composite materials. This has also supported additional collaboration between MaREI and ÉireComposites through the SEAI RD&D and SFI Industry RD&I Fellowship programmes, and through the LEAPWind (EMFF), STEP4WIND (Marie Curie ITN), CRIMSON (H2020), and MI-DRONE (DTIF) projects.

The impact of this collaborative relationship has been to move ÉireComposites' technology from Technology Readiness Level (TRL) 6 to 9, and to help secure their long-term viability and safeguard jobs in the Connemara Gaeltacht. As noted by the company, "researchers from MaREI have been pivotal in securing these research projects, which have allowed us to develop novel technology and attract new customers. Modelling and test data from MaREI at University of Galway has de-risked our marine energy solutions and further optimised our designs. All in all, the contributions from MaREI have made a major contribution to the success of the company".

7.2 Shannon Estuary Economic Taskforce Report

The independent *Shannon Estuary Economic Taskforce (SEETF)* was established in 2022 to consider the economic development potential of the Shannon Estuary region, following a commitment in the *Programme for Government* to establish an economic development plan for the region. The SEETF brought together regional stakeholders across industry, academia, research, and local government, and highlighted the region as a high potential location for the development of offshore wind. The SEETF published its final report in July 2023, with a core focus being a suite of recommendations to enable the delivery of Atlantic offshore wind.³³

In addition to proposing region-specific measures, the SEETF made a number of national policy recommendations, among which was the development of a national industrial strategy for offshore wind. The publication of this Strategy delivers on that recommendation. Other recommendations associated with the development of OWE and an associated green industrial ecosystem, including proposed measures on RD&I, supply chains, and clusters, will be advanced at a national level through the implementation of this Strategy.

An implementation update, published in December 2023, highlighted that several national policy developments recommended by the SEETF had already been actioned by Government since it finalised its Report.³⁴ These include the establishment of the Maritime Area Regulatory Authority (MARA), the publication of a *National Hydrogen Strategy*, an *Electricity Interconnection Policy*, and the publication of an *Energy Security Strategy*.

The implementation update also signalled an undertaking by Government to assess the potential for accelerating the development of a West Coast DMAP and examining the cost and viability of initiating FLOW projects in this DMAP as Ireland seeks to support the development of this sector. The development of such a DMAP is regarded by the Taskforce as a key enabler for the deployment of Atlantic OWE.

Actions	Deadline	Owners
35 Assess the potential for accelerating the development of a West Coast DMAP and examine the cost and viability of initiating floating offshore wind projects in this DMAP as Ireland seeks to support the development of this sector.	Q4 2024	DECC

33. [Shannon Estuary Economic Taskforce Report - DETE \(enterprise.gov.ie\)](https://enterprise.gov.ie/en/publications/shannon-estuary-economic-taskforce-report)

34. <https://enterprise.gov.ie/en/publications/shannon-estuary-economic-taskforce-report-implementation-update.html>

Case Study



Energy for generations

ESB has been Ireland's foremost energy company since their establishment in 1927. ESB is driven to make a difference by achieving zero carbon emissions by 2040. As a strong, diversified utility, ESB operates across the electricity market, from generation through transmission and distribution, to supply of customers in addition to using their networks to carry fibre for telecommunications.

ESB has grown its relationship with SFI research centres, such as MaREI, to support independent research on offshore wind, ESB has co-funded 12 separate collaborative research projects with industry partners, leveraging academic excellence across MaREI academic institutes. These include partnerships on the EirWind project, focused on developing a blueprint for offshore wind energy development in Ireland, the ongoing H-WIND project, focused on the activation of new markets for hydrogen generated from offshore wind energy, in addition to supporting strategic planning and the use of integrated energy modelling tools to highlight policy, technical opportunities and challenges for Ireland. Working with MaREI and Shannon Foynes Port Company on the Floating Offshore Wind (FLOW) project will enable the industry to gain a deeper understanding of the requirements for essential facilities for the temporary offshore storage of floating offshore wind turbines.

Offshore wind is a crucial technology for achieving the ambitious goal of transitioning to a secure, integrated, decarbonised energy sector. Industry-sponsored academic research promotes innovation and competitiveness in this sector, as well as complementary technologies like renewable hydrogen. Working with industry partners, and academic researchers can help address the challenges associated with offshore wind deployment, and contribute to the development of a skilled workforce, a robust supply chain, and a sustainable, secure, net zero economy for Ireland.

Independent, evidence-based research is important for shaping national discussions and policy development.

8. Offshore Wind Energy Demand and End Uses

As highlighted in Chapter 2, the successful delivery of 37GW of offshore wind by 2050 will more than meet the projected doubling in electricity demand that EirGrid are forecasting. This abundance of green energy will not only enable the achievement of our climate targets, it will also significantly enhance Ireland's global competitiveness. Consultations with stakeholders carried out as part of the development of this Strategy indicate that for this potential to be realised, a plan-led approach to developing future end uses for renewable energy is needed. Work has already begun across Government to assess potential interventions, as detailed in this section, with initial measures to promote the co-location of ORE generation and demand also set out below.

8.1 Developing Green Energy Industrial Parks

8.1.1 Background/Overview

The *National Hydrogen Strategy* highlighted the potential for the co-location of large energy users, such as data centres, with renewable energy generation as a means of helping to decarbonise large industry, in addition to addressing other energy supply and storage challenges.³⁵

This concept is consistent with the approach being adopted by several countries around the world who are developing a variety of models for industrial areas around sites central to the production of green energy. For example, GreenLab³⁶ in Denmark; The Smart Green Industrial Complex at Saemangeum,³⁷ South Korea; Ventspils Industrial Park,³⁸ Latvia; and Haraholmen Green Industrial Park³⁹, Sweden all represent different scales of green industry parks designed to achieve the co-location of renewable energy supply and demand, and in many cases these also serve as test beds for technological innovation.

Case Study - Ventspils Industrial Park

The Ventspils Industrial Park is a national level project aiming to service and boost the growing green economy in the region around Ventspils, north-west Latvia. The park is designed to include three main nodes concentrating on Green Tech, Green Energy, and High Tech. The Green Energy Area is dedicated to green energy production and aligns with several renewable energy projects, including planned offshore wind farms. The proximity of the port, with already existing terminals that are capable of handling e-fuels, including green ammonia, means that the industrial park is the ideal location for the development of power-to-X and hydrogen economy. The industrial park has several smart specialisation priority areas including knowledge-intensive bioeconomy, biomedicine, medical technologies, pharmaceuticals, photonics and smart materials, technologies and engineering systems, smart energy and mobility, information and communication technologies.

35. [gov.ie](http://www.gov.ie) - National Hydrogen Strategy (www.gov.ie)

36. GreenLab - The green industrial park of the future (stateofgreen.com)

37. [Smart Green Industrial Complex: Hub of the Green New Deal in Saemangeum - Local Governments - Invest KOREA Summit \(kotra.biz\)](#)

38. [Industrial Park - Invest in Ventspils](#)

39. [Haraholmen – a Green Industrial Park where Sustainability is Key | News - Smart City Sweden](#)

The possible use of surplus ORE for large energy users should be considered over the course of this Strategy in alignment with actions relating to end use and the proposed co-location of renewable energy supply and demand. Data centres are a prime example of large energy users for which surplus ORE could be a solution in their decarbonisation.

Data centres underpin Ireland's digital sector, providing the foundation for almost all online aspects of our social and work lives. *Harnessing Digital - The Digital Ireland Framework* notes that data centres are "a core infrastructure enabler of a technology-rich, innovative economy, which makes Ireland a location of choice for a broad range of sectors and value-added activities, such as business collaboration, online commerce, banking, and supply chain management."⁴⁰ Growth in the sector will underpin further investment and additional jobs, as well as developing and attracting skills and talent in AI, quantum computing in addition to supporting multiple adjacent activities. Data centres are a key part of Ireland's value proposition as an investment location – attracting cutting edge and future-focused companies. Many data centres have invested heavily in the setting up and expansion of their operations in Ireland, providing employment opportunities and key solutions for other enterprises.

Data centres worldwide are also investing heavily in renewables. According to the IEA, hyperscale data centre operators lead in corporate renewable energy procurement, mainly through power purchase agreements (PPAs) with Amazon, Microsoft, Meta and Google the four largest purchasers of corporate renewable energy PPAs.⁴¹ The IEA note that "Apple (2.8TWh), Google (18.3TWh), Meta (9.4TWh) and Microsoft (13TWh) purchased or generated enough renewable electricity to match 100% of their operational electricity consumption in 2021 (primarily in data centres)" while "Amazon consumed 30.9 TWh (85% renewable) across their operations in 2021".⁴²

8.1.2 Rationale

Consultations with industry carried out as part of the development of this Industrial Strategy suggest that there is an opportunity to establish new indigenous green businesses and attract new FDI investments to Ireland, based on the expected supply of abundant renewable energy, and a strategic approach to co-location of renewable energy supply and demand would serve as a strong incentive to sectors that are dependent on significant energy supplies.

40. [Harnessing Digital - The Digital Ireland Framework](#)

41. [Data centres & networks - IEA](#)

42. *Ibid.*

This is consistent with work ongoing by IDA Ireland to deliver competitive, large scale impactful property, utility and infrastructure solutions, in partnership with relevant stakeholders across the ecosystem, with a shift in the scale, complexity, and preparedness, necessary for larger scale investments. Sectors including life sciences, semiconductors, food manufacturing, renewable energy and electric vehicles are driving demand for such solutions and many countries are improving their offering for larger scale investments by bringing new competitive infrastructure solutions to the market, as highlighted above. This work follows the existing *Strategic Sites Initiative*, which has been and continues to be instrumental in delivering FDI in recent years, and in supporting the IDA Ireland and EI's strategic objective to support regional development.

IDA Ireland is engaged in a continuous programme of delivering Business Parks, Strategic Sites and Next Generation sites to support winning investments of differing scale. This programme includes ensuring that these sites are located proximate to appropriate infrastructure and utilities to ensure longevity in respect to their development potential to support investments across a number of activities and sectors. In that context, IDA Ireland will continue to work with utility providers to leverage new sources of energy as it comes on board and optimise IDA Ireland's asset base in different geographical locations across the country. This will enable the current and future client base, of varying scale, to optimise their development potential in a more sustainable manner.

This approach will align with the forthcoming *National Energy Demand Strategy* (NEDS), currently being developed, and being led by the Commission for the Regulation of Utilities (CRU). The NEDS will seek opportunities to decarbonise our national energy use by better aligning demand with available supply, and renewable supply in particular. New demand growth co-located with or in proximity to offshore wind, alongside energy storage technologies, can efficiently use existing grid infrastructure, reduce curtailment, and facilitate low- or no-carbon new industrial development.⁴³ It should be noted that CRU also launched a public consultation on the *Review of Large Energy Users (LEU) Connection Policy* earlier in 2024.

43. National Energy Demand Strategy | CRU.ie: <https://www.cru.ie/publications/27870/>

8.1.3 Impact

World-class property solutions powered by renewable energy of scale present an opportunity to package many of the requirements of large energy users, such as data centres, and industries with a strong sustainability focus, with domestic objectives around energy supply and storage, grid, domestic OWE supply chain development, planning, and balanced regional economic development. Such parks would also offer non-grid routes to market for OWE.

Actions	Deadline	Owners
36 Undertake further work to assess the role that integrated energy parks could play in our future energy system, including their potential benefits and the possible barriers (market, legal or other) that may exist.	Q4 2025	DECC
37 Commission a sectoral assessment of energy park concepts to include an analysis of the economics of the capital investment required.	Q3 2024	DETE
38 Lead fact-finding mission with key stakeholders to international locations where green energy industrial parks have been successfully established.	Q4 2024	DETE
39 Establish a pilot framework to enable aligned delivery of offshore generation, grid and routes to market to include consideration of large energy users.	Q4 2025	DECC, CRU, EirGrid, DETE, EI, IDA
40 Assess the enabling supports and/or frameworks that may be required to maximise capacity from alternative routes to market.	Q4 2025	DECC

8.2 Progressing End Uses for OWE

Several cross-Government initiatives have been put in place, designed to maximise the use of renewable energy sources, such as OWE, in Ireland's energy system and wider economy. These provide for alignment across policy areas and will serve as key for a through which further measures relating to OWE demand and end uses will be developed under this Strategy.

In addition, engagement with other countries interested in cooperating with Ireland on renewable energy, such as Germany, provides opportunities to develop specific end use cases for excess energy derived from OWE.

8.2.1 The National Hydrogen Strategy

The *National Hydrogen Strategy* published in July 2023, sets out the strategic vision on the role that hydrogen will play in Ireland's energy system, looking to its long-term role as a key component of a zero-carbon economy, including the development of green industrial development opportunities.⁴⁴ It considers the needs of the entire hydrogen value chain including production, end uses, transportation and storage, safety, regulation, markets, innovation, and skills.

A 2GW target to produce OWE for non-grid limited purposes, including renewable hydrogen, is set to be in development by 2030, presenting an opportunity to advance Ireland's objective of decarbonising the industrial base and developing new green industries of the future.

Interdepartmental Hydrogen Working Group

Implementation of the *National Hydrogen Strategy* is co-ordinated through the Interdepartmental Hydrogen Working Group, which brings together the key Government Departments, State agencies and the energy system operators. In addition, the Working Group is tasked with ensuring coherence across all relevant policy areas in relation to renewable hydrogen and provides a consultative forum for ongoing hydrogen policy development.

DETE participates in this Working Group, and it is anticipated that this will inform the continued development of *Powering Prosperity: Ireland's Offshore Wind Industrial Strategy* over the coming year

44. [gov.ie](http://www.gov.ie) - National Hydrogen Strategy (www.gov.ie)

8.2.2 Other Cross-Government Initiatives

DETE also participates in the following Working Groups that will inform potential OWE end use measures as part of the continued development of this Strategy.

Alternative Fuels for Transport Working Group

This Working Group brings together stakeholders with responsibility and interest in policy development and implementation of alternative fuels from production to end use in transport. 'Alternative fuels' are fuels or power sources, including renewable forms of energy, which serve, at least partly, as a substitute for fossil oil sources in the energy used for transport and which have the potential to contribute to its decarbonisation and enhance the environmental performance of the transport sector. The role of the Working Group is to co-ordinate system wide delivery in relation to alternative fuel supply for use in transport.

This also includes assessing the enhanced economic and societal benefits from increasing alternative fuel supply for use in transport. The use of renewable feedstocks for these alternative fuels, such as energy derived from OWE, offers a potential domestic end use for this renewable energy source.

Sustainable Aviation Fuels Taskforce

The Sustainable Aviation Fuels (SAFs) Taskforce was established in 2023 to guide the development of a national *SAF Policy Roadmap*. SAFs are drop-in aviation fuels that are either biofuels produced from feedstocks or synthetic aviation fuels from renewable sources. As technology, production and certification develops, synthetic fuels from renewable fuels will be added to a greater extent.

It is intended that the *SAF Policy Roadmap* will identify the actions necessary to ensure that Ireland can meet its regulatory obligations to decarbonise aviation. As part of its remit, the SAFs Taskforce will assess the potential for local production of SAFs in the State, thus providing a potential end use for energy derived from offshore wind, in the longer term.

Steering Group for the Green Hydrogen Refuelling Corridor Feasibility Study

The Department of Transport, in cooperation with the Shared Island unit in the Department of An Taoiseach and the Department for the Economy (NI), has commissioned a (pre-investment) feasibility study for a green hydrogen refuelling corridor running between Dublin and Belfast. The study will inform the potential and possible scope for subsequent capital investment in a demonstrator project/green corridor investment on an all-island basis in line with hydrogen refuelling station obligations to be delivered by 2030 under the *EU's Alternative Fuels Infrastructure Regulation* and in line with NI requirements. Among the workstreams included in the study are an economic feasibility study incorporating a Cost Benefit Analysis evaluating forecast demand scenarios for hydrogen in the transport sector, a supply chain capability assessment, and an optimal location analysis.

8.2.3 Joint Declaration of Intent on Cooperation in the Field of Green Hydrogen Between Ireland and Germany

Ireland signed a Joint DoI with Germany in May 2023 formalising cooperation in respect of green hydrogen between the two countries.⁴⁵ The DoI emphasises the willingness of both states to initiate their cooperation on research and development in the fields of production, storage, transport, and use of green hydrogen, including its derivatives. A key objective of the DoI is to explore the establishment of a joint pilot project on a potential green hydrogen cross-border value chain in Ireland and Germany.

45. [gov.ie](https://www.gov.ie) - Joint Declaration of Intent on cooperation in the field of green hydrogen between Ireland and Germany (www.gov.ie)

9. Implementation

DETE and all other relevant Governmental stakeholders represented on the OWDT, chaired by DECC, recognise that, in order to meet its offshore wind targets and build a competitive advantage for Ireland in the offshore wind supply chain and RD&I, Government must work hand in hand with industry. The policy proposals and actions in this Strategy, while owned by Government Departments and agencies, include strong representation from industry and industry has a key role in achieving them.

While DETE will work to ensure actions within this Strategy are implemented, progress on the actions will be reported through Workstream 7 of the OWDT, which focuses on the supply chain. This Workstream is led by DETE, EI and IDA Ireland, with collaboration from other key Governmental stakeholders and industry via the participation of WEI and the MRIA.

Additional oversight and input will be sought from the following groups:

- **The Offshore Wind Industry Forum (OWIF)**, established by DETE in 2023, is comprised of representatives from WEI, MRIA and a panel of company representatives from the offshore wind supply chain. The OWIF will continue to meet periodically and be invited to participate in discussions on progressing offshore wind supply chain, RD&I and other critical topics.
- **The DETE Offshore Wind Interdepartmental Group**, also established in 2023, is comprised of colleagues from DETE, EI, IDA Ireland, the Department of Housing, Local Government and Heritage), DFHERIS, the Department of Public Expenditure, NDP Delivery and Reform, DECC, the Department of Finance, the Department of the Taoiseach, the Department of Transport, MARA and SEAI.
- **The DETE Offshore Wind RD&I Subgroup**, established in 2023 under the main Interdepartmental Group, with the participation of EI, IDA Ireland, the SEAI, and SFI. The Subgroup will be bolstered in 2024 with a renewed focus, new terms of reference and a work plan, as well as additional members. As detailed in Chapter 6 on RD&I, the RD&I Subgroup will play a crucial role in building a consensus on the sectors and technologies that can deliver a competitive advantage for Ireland in offshore wind, as has previously been achieved in other industries such as ICT and pharmaceuticals.
- The OWDT Workstream 8 (Skills) and the Expert Advisory Group, led by DFHERIS.

The establishment of a new Offshore Wind Industry Council co-chaired by industry and Government will be examined and progressed as necessary.

Additionally, the Department will publish progress reports, starting in 2025.

Glossary of Terms



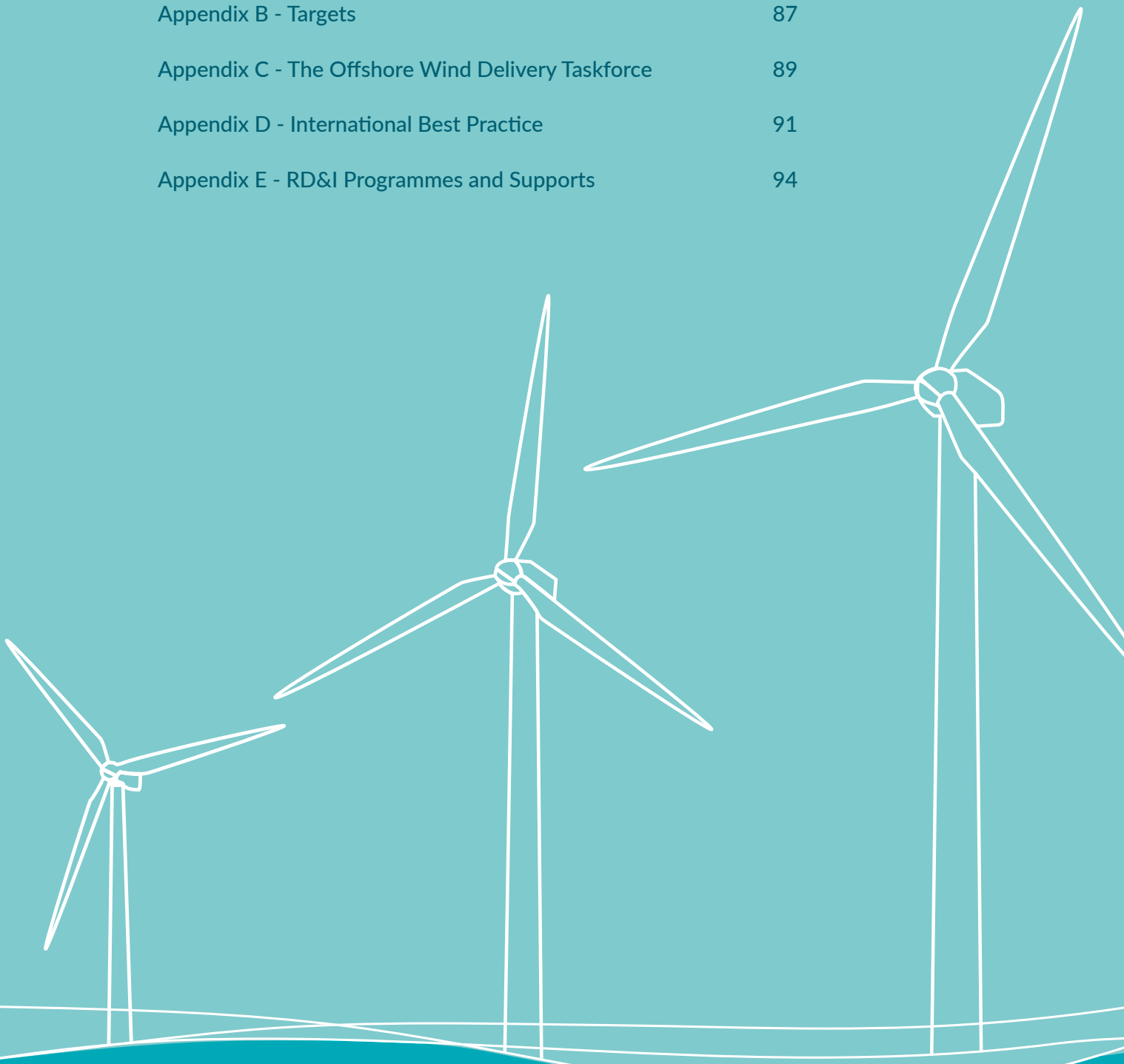
ABC	Applied and Basic Combined
ABSEI	Annual Business Survey of Economic Impact
AI	Artificial Intelligence
AMETS	Atlantic Marine Energy Test Site
CAP	Climate Action Plan
CoE	Centre of Excellence
CRU	Commission for the Regulation of Utilities
DETE	Department of Enterprise, Trade and Employment
DFHERIS	Department of Further and Higher Education, Research, Innovation and Science
DMAPs	Designated Maritime Area Plans
Dol	Declarations of Intent
DTIF	Disruptive Technologies Innovation Fund
EDIH	European Digital Innovation Hub
EEZ	Exclusive Economic Zone
EI	Enterprise Ireland
EIC	European Innovation Council
ERDF	European Regional Development Fund
ESB	Electricity Supply Board
EU	European Union
FDI	Foreign Direct Investment
FLOW	Floating Offshore Wind
FTE	Full Time Equivalent
GDG	Gavin & Doherty Geosolutions
GDIP	Green Deal Industrial Plan
GHG	Greenhouse Gas
GVA	Gross Value Added
GW	Gigawatt
HEI	Higher Education Institute
HPSU	High Potential Start-Ups
iCRAG	Irish Centre for Research in Applied Geosciences

ICT	Information and Communications Technology
IEA	International Energy Agency
IMDO	Irish Maritime Development Office
IoT	Internet of Things
IPCEI	Important Projects of Common European Interest
IRC	Irish Research Council
ISIF	Ireland Strategic Investment Fund
ITI	InterTradeIreland
JPoA	Joint Plan of Action
LEO	Local Enterprise Office
LEU	Large Energy Users
MAP	Maritime Area Planning
MARA	Maritime Area Regulatory Authority
MaREI	Marine and Renewable Energy Ireland
MI	Marine Institute
MIIN	Marine Ireland Industry Network
MNC	Multinational Corporation
MoU	Memorandum of Understanding
MRIA	Marine Renewables Industry Association
MW	Megawatt
NEDS	National Energy Demand Strategy
NexSys	Next Generation Energy Systems
NI	Northern Ireland
NMPF	National Marine Planning Framework
NOWC	Norwegian Offshore Wind Cluster
NPF	National Planning Framework
NSEC	North Seas Energy Cooperation
NTF	National Training Fund
NTMA	National Treasury Management Agency
O&M	Operations and Maintenance

OEA	Offshore Energy Alliance
OEMs	Original Equipment Manufacturers
ORE	Offshore Renewable Energy
ORESS	Offshore Renewable Electricity Support Scheme
OWCE	Offshore Wind Centre of Excellence
OWDT	Offshore Wind Delivery Taskforce
OWE	Offshore Wind Energy
OWIF	Offshore Wind Industry Forum
PCI	Projects of Common Interest
PMI	Projects of Mutual Interest
R&D	Research and Development
R&I	Research and Innovation
RD&I	Research, Development and Innovation
RED	Renewable Energy Directive
RES	Renewable Energy Share
REP	Regional Enterprise Plans
RPO	Research Performing Organisation
RTE	Réseau de Transport d'Électricité
RVO	Netherlands Enterprise Agency
SAF	Sustainable Aviation Fuel
SBCI	Strategic Banking Corporation of Ireland
SBP	Sub-Bottom Profiler
SEAI	Sustainable Energy Authority of Ireland
SEETF	Shannon Estuary Economic Taskforce
SFI	Science Foundation Ireland
SME	Small and Medium-Sized Enterprises
TCP	Technology collaboration programmes
TER	Total Electricity Requirement
TW	Terawatt
WEI	Wind Energy Ireland

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Appendix A

Table of Actions

Actions	Deadline	Owners
1 Establish baseline data and set projected targets for <ul style="list-style-type: none"> • R&D spend in the OWE supply chain • Number of jobs in the OWE supply chain • New Start Ups in the OWE supply chain • Exports • FDI potential 	Q4 2024	DETE
2 Conduct economic impact assessment on the potential of offshore wind in Ireland.	Q4 2024	DETE
3 Increase participation in business leadership programmes amongst the offshore wind supply chain and develop specific capability supports for new entrants to the offshore wind sector.	Ongoing	EI
4 Deliver long-term strategic funding options to support scaling Irish offshore wind supply chain companies.	Ongoing	EI, DETE, SBCI, ISIF
5 Drive increased start-up and high potential start-up generation in offshore wind, through enhanced entrepreneur development programmes and targeted funding supports.	Ongoing	EI, DETE
6 Engage with other relevant agencies, such as SEAI, SFI, Marine Institute (MI), Irish Maritime Development Office (IMDO), to leverage support programmes and funding opportunities to maximise local supply chain content levels in the domestic Irish market.	Ongoing	DETE, SEAI, SFI, MI, IMDO
7 Explore extending the €500 million Growth and Sustainability Loan Scheme and any need for alternative funding scheme or initiative to support the growth of the offshore wind supply chain.	Q4 2024	DETE, SBCI

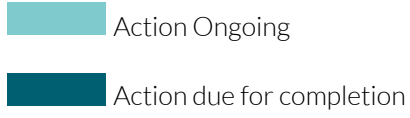
Actions	Deadline	Owners
8 Consider recommendations of the Greentech Skillnet/WEI Skills Assessment Report and, using targeted funding from the National Training Fund (NTF), subject to agreement in the estimates process, agree actions to deliver on skills priorities for achieving offshore wind energy targets.	2024 onwards	DFHERIS
9 Delivery of public procurement training workshops to companies across the Irish supply chain.	Q4 2024	EI, EirGrid
10 Establish and implement MoU between EirGrid and relevant enterprise agencies.	Q2 2024	EirGrid, EI, IDA
11 Through engagement with industry partners, raise awareness of and encourage participation in national competitive call for clusters under the National Clustering Programme once announced.	Throughout 2024	DETE, EI, IDA, SEAI, MI, IMDO
12 IDA Ireland strategy 2021 – 2024: Continue to target and support FDI 'Sustainability and Green Economy' investment commitments.	Q4 2024	DETE, IDA
13 IDA Ireland strategy 2025 – 2029: Ensure clear goals and objectives are set to win and support FDI investment in the offshore wind sector.	Q4 2024	DETE, IDA
14 Compete internationally to win large investments of scale from strategic FDI, that complements both the development of Ireland's offshore wind capability and the growth of new 'high value' investment types.	Ongoing	DETE, IDA
15 Collaborate closely to ensure partnership opportunities with international companies in the offshore wind sector can be maximised.	Ongoing	DETE, IDA, EI
16 Work closely with DETE and other Departments to ensure the appropriate support mechanisms and funding schemes are in place to support the development of international offshore wind FDI.	Q2 2024	DETE, IDA

Actions	Deadline	Owners
17 Utilise Ireland's membership of Cooperation Alliances such as NSEC, and existing bilateral agreements with European partners to advance the development of international OWE supply chain opportunities.	Ongoing	DETE, IDA, EI
18 Identify potential new actions for inclusion in the third Germany – Ireland JPoA focused on cooperation in the area of OWE supply chains.	Q4 2024	DETE
19 Seek opportunities to develop strategic partnership with other countries or organisations, including in the form of MoUs or Dols, to enable knowledge sharing and growth of the supply chain in Ireland.	Ongoing	DETE
20 Promote Ireland as a high potential OWE market through ministerial trade missions and active participation in international conferences, trade shows and other major OWE sectoral events, including through engagement with industry representative bodies.	Ongoing	DETE, EI, IDA, DECC
21 Lead a fact-finding mission with key stakeholders to Esbjerg port to see how it has developed to support the offshore wind supply chain.	Q4 2024	DETE, EI
22 Engage with Northern Ireland's Department for the Economy and ITI on potential all-island OWE supply chain opportunities.	Ongoing	DETE, EI, IDA, ITI
23 Establish an annual joint event with Scotland aimed at promoting inter-Governmental dialogue and engagement with industry in the area of renewable energy.	Q2 2024	DETE
24 Engaging with existing structures, identify RD&I focus areas/major challenges facing industry in relation to OWE.	Q4 2024	DETE (DETE RD&I Subgroup)

Actions	Deadline	Owners
25 Progress the development of an OWCE including a feasibility study and developing a detailed project plan for delivery with delivery of same subject to funding approval.	Q2 2025	DETE
26 Investigate the feasibility of a floating offshore wind demonstrator site.	Q3 2024	DECC, DETE
27 Develop a plan to promote engagement with and use of existing marine test sites.	Q3 2024	DETE (DETE RD&I Subgroup)
28 Maintain State support for our existing or planned test sites and explore the feasibility of supporting additional test sites.	Ongoing	DECC, SEAI, MI
29 Examine the case for the development of a regulatory sandbox for offshore wind and related technologies.	Q2 2025	DETE
30 Hold Offshore RD&I Showcase and Access to Finance Event in addition to online workshops highlighting supports available to organisations along the OWE supply chain.	Q4 2024	DETE
31 Develop communications campaign to promote RD&I opportunities.	Throughout 2024	DETE
32 EI call for in-company research for offshore wind with up to €5 million in funding available for approval.	Q4 2024	EI
33 Promote participation in DTIF for organisations engaged in RD&I for offshore wind and associated sectors.	Ongoing from 2024	DETE, EI, IDA, SFI
34 Promote participation in the SFI Strategic Partnership Programme and SFI Spoke Award Programme.	Rolling Call	SFI
35 Assess the potential for accelerating the development of a West Coast DMAP and examine the cost and viability of initiating floating offshore wind projects in this DMAP as Ireland seeks to support the development of this sector.	Q4 2024	DECC

Actions	Deadline	Owners
36 Undertake further work to assess the role that integrated energy parks could play in our future energy system, including their potential benefits and the possible barriers (market, legal or other) that may exist.	Q4 2025	DECC
37 Commission a sectoral assessment of energy park concepts to include an analysis of the economics of the capital investment required.	Q3 2024	DETE
38 Lead fact-finding mission with key stakeholders to international locations where green energy industrial parks have been successfully established.	Q4 2024	DETE
39 Establish a pilot framework to enable aligned delivery of offshore generation, grid and routes to market to include consideration of large energy users.	Q4 2025	DECC, CRU, EirGrid, DETE, EI, IDA
40 Assess the enabling supports and/or frameworks that may be required to maximise capacity from alternative routes to market.	Q4 2025	DECC

Overview of Action Implementation Timelines



Action Number	Q2 2024	Q3 2024	Q4 2024	Q1 2025	Q2 2025	Q3 2025	Q4 2025
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Appendix B

Targets

Over time, the initiatives and proposals set out in this Strategy will require a complementary suite of targets capable of ensuring effective implementation. Careful monitoring of the delivery of these targets will ensure that Government action contributes to a strong and successful Irish ORE industry. In the longer term, it will also enable the identification of further measures and actions needed to support the growth of Ireland's ORE industry throughout its development.

The initial iteration of *Powering Prosperity: Ireland's Offshore Wind Industrial Strategy* focuses on two key areas: the development of a thriving offshore wind supply chain and the establishment of a productive RD&I ecosystem. Progress in supply chain development will be measured through targets such as growth in the number of jobs and new start-ups in this industry. An uptake in the number of companies availing of RD&I supports, increased commercialisation of research, and increased exports of innovative technologies can also be monitored to indicate success of RD&I measures.

Supply chain development policies are not only intended to develop the domestic supply chain, but also to increase Ireland's engagement in the international offshore wind industry. This Strategy aims to support Irish companies to increase exports, in terms of supply chain services, through interconnection or green energy, and innovative technologies. A marked increase in exports would positively reflect the policies implemented as part of this Strategy. This Strategy also aims to increase Ireland's attractiveness as a location for FDI, both in terms of offshore wind energy companies and the establishment in Ireland of new multinational large energy users.

Measuring targets in a number of these key areas will ensure that resources are being effectively allocated and achieving the desired results. It will also serve to identify areas where the strategy needs further attention, in addition to enabling feedback for the refinement and optimisation of policies to ensure continuous progress is being made. It will ensure also that stakeholders are accountable for the achievement of tangible outcomes.

Challenges with Measuring Targets

Generating coherent, feasible targets will require access to detailed and reliable data on key aspects of the ORE industry; this data will also need to be updated regularly to ensure that delivery of targets can be monitored closely and accurately. At present, while there are a variety of data sources available, the data is fragmented, with the exact metrics required for measurement of this Strategy's targets unavailable and regular updates not accessible.

It will first be necessary to determine the involvement of companies in the Irish offshore wind industry, establishing current (baseline) figures for each target area. Certain relevant details, for example exports and FDI, may be extracted from existing sources, such as the Annual Business Survey of Economic Impact (ABSEI). However, the extent of companies' involvement in

the offshore wind sector is not easily defined. Many ORE companies operate in multiple industries, and the proportion of their activities falling within the ORE sector would need to be ascertained before accurate figures can be drawn from existing data (such as ABSEI). Additionally, sources such as ABSEI provide accurate data for client companies of EI and IDA Ireland, but this may not capture the full range of companies with operations in the ORE industry. Detailed research will need to be undertaken in the coming months to establish a comprehensive list of companies operating in the Irish ORE, while also determining the proportion of these companies' operations, exports, employment, etc., that result directly from ORE.

In designing effective targets, it will also be necessary to establish reliable data sources that are regularly updated, to ensure that the delivery of targets can be accurately tracked. Various existing studies provide useful information on certain aspects of the ORE sector. For example, a recent study undertaken on behalf of the Skills and Workforce Workstream 8 of the OWDT, entitled *Building our Potential: Ireland's Offshore Wind Skills and Talent Needs*, provides useful estimates of the employment demand in FTE years that may be needed for Ireland to meet its 2030 and 2040 ORE targets. Likewise, the Marine Institute,⁴⁶ in its 2023 study on Ireland's Ocean Economy, provide useful employment, turnover, and gross value add figures for Ireland's ORE industry. However, standalone studies, while useful in indicating both baseline data and future projections, will not allow for changes and trends in key areas to be tracked continuously.

Despite these challenges in accessing required data at present, the ambition remains to define key parameters and establish a means to measure them, as the achievement of these targets is essential to successful implementation of this Strategy. There are a few possible solutions to the current data gap, which will be assessed. One such solution is the use of estimated figures, generated based on knowledge of requirements in terms of labour and supply for the buildout of a 1GW wind farm, viewed as representative of the scale of planned OW projects in Ireland with accompanying projections. Another solution involves a detailed exploration of available data to extract usable metrics. Once a full assessment of data available has been carried out, and ORE operations in Ireland can be mapped comprehensively, there is also potential for an annual survey specifically tailored to this Strategy's targets, which could also prove useful to the wider ORE industry.

Targets to be Identified in the Following Areas:

- R&D spend in the supply chain
- Number of jobs in the offshore wind supply chain
- New start-ups in the offshore wind supply chain
- Exports
- FDI targets

46. [Ireland's Ocean Economy 2023.pdf \(marine.ie\)](#)

Appendix C

The Offshore Wind Delivery Taskforce

Ireland's OWDT was established in April 2022 by Minister Ryan to drive delivery of offshore wind targets in the *Climate Action Plan*, and to mobilise the Irish economy towards realising associated economic and societal opportunities through effective cross-Government collaboration.

Membership

The Taskforce is chaired by the Department of the Environment, Climate and Communications, and its membership comprises senior officials from Government Departments and Agencies considered vital to the delivery of Ireland's ORE ambitions:

- the Department of the Environment, Climate and Communications
- the Department of Housing, Local Government and Heritage;
- the Department of Transport;
- the Department of Enterprise, Trade and Employment;
- the Department of Further and Higher Education, Research, Innovation and Science;
- the Department of Public Expenditure and Reform;
- the Department of Rural and Community Development;
- Enterprise Ireland;
- the Commission for Regulation of Utilities;
- EirGrid;
- the Maritime Area Regulatory Authority;
- the Sustainable Energy Authority of Ireland; and
- the Marine Institute.

The Department of Agriculture, Food and Marine, the Department of Defence, the Department of the Taoiseach and IDA Ireland also attend taskforce meetings as observers. In addition, since June 2023, the Taskforce has held regular sessions with the offshore wind industry, represented by Wind Energy Ireland (WEI) and Marine Renewables Industry Association (MRIA) to exchange updates on the latest policy and industry developments.

Objectives and Workstreams

The Taskforce has a set of objectives to ensure that offshore wind is delivered efficiently, that the potential economic and societal benefits from establishing this industry are maximised, and that development of the ORE sector is aligned with work being progressed to improve and protect marine biodiversity. Central to this is the development and oversight of a consolidated plan, collating all activities underway across departments and agencies to ensure delivery of offshore wind. This is known as the Offshore Wind Energy Programme, which comprises ten Workstreams.

Workstream 1	Marine Planning and Consenting, and Biodiversity - DECC Responsibility for marine policy and legislation, and supporting planning authorities with legislation and guidelines for offshore wind development. Ensuring alignment between offshore wind development and activities to protect and conserve the marine environment; and offshore wind development consenting and licensing.
Workstream 2	Future Framework - DECC: Supporting the development of ORE policy and strategy beyond 2030, including key milestones for floating offshore wind and hydrogen.
Workstream 3	ORE Communications – DECC: Coordinating strategic communications on the Offshore Wind Energy Programme and facilitating engagement with the public and all relevant stakeholders.
Workstream 4	Offshore Renewable Energy Support Scheme – DECC: Designing and implementation of ORESS auctions (i.e., the route to market).
Workstream 5	EirGrid: Grid connection including licensing/regulation: Development of all grid projects required for 2030.
Workstream 6	Maritime Transport and Commercial Ports Policy – D/Transport: Supporting development of infrastructure to maximise use of Irish ports, and guidance on navigational safety, pollution control and emergency response.
Workstream 7	Supply Chain – DETE, EI, IDA Ireland: Supporting the mitigation of risks to the offshore wind development supply chain and capitalising on economic opportunities of offshore wind energy for Irish businesses.
Workstream 8	Skills and Workforce – DFHERIS: Supporting the development of skills capability and the workforce required for the offshore wind sector to ensure maximum benefit to the State.
Workstream 9	Data Acquisition – DECC: With surveying and data strands.
Workstream 10	DMAP Designations – DECC: Supporting the work of determining the broad areas where ORE projects can be developed.

Further information on the Taskforce is available on gov.ie.

Appendix D

International Best Practice

As part of its research to inform the development of this Strategy, DETE commissioned a 'Comparative Analysis of International Offshore Wind Industrialisation Strategies'. The study, which was undertaken by Everoze Partners Limited, included an analysis of industrialisation approaches across five jurisdictions with active offshore wind industries. The main applicable findings are summarised below.

Scotland had existing oil and gas supply chain capabilities and heritage in shipyards and metal fabrication. Transferable skills and knowledge helped build its offshore wind industry at scale from 2009 onwards.

- Scotland has used UK-wide tools such as the Offshore Wind Growth Partnership and ORE Catapult to enhance its capacity to innovate. ORE Catapult is an innovation centre active throughout the UK and has operations in Scotland in Glasgow and Aberdeen. In 2022, ORE Catapult, in partnership with University of Aberdeen, Net Zero Technology Centre and industry, established the National Floating Offshore Wind Innovation Centre to accelerate commercialisation of floating offshore wind technology.⁴⁷
- Scotland has two offshore wind clusters, Deepwind and Forth&Tay, which are to be merged into a single national cluster. Consolidation should centralise offshore wind activity and innovation and enhance country-wide collaboration and engagement.
- Scotland's Strategic Investment Model process was created by a Collaborative Framework Group led by Scotland's First Minister. The model seeks, through joint efforts, to secure investment ahead of contract certainty. It allows offshore wind projects to collaborate, helping ports and supply chain companies mitigate risk and close funding gaps to ready final investment decisions in time to support delivery.⁴⁸

The Netherlands is internationally recognised for the rapid advancement of its the offshore wind industry.

- The Netherlands had an existing maritime cluster that it leveraged for the development of its offshore wind industry cluster, Wind and Water Works, which has a national remit. It was initially developed and funded by the Netherlands Enterprise Agency (RVO) in close collaboration with industry. Wind and Water Works is now managed by private industry groups but retains close links to government.
- Wind and Water Works carried out a Netherlands supply chain mapping exercise: Dutch Offshore Wind Guide 2024. The national supply chain is mapped against the offshore wind development process, creating a useful tool for developers at each stage of project development.
- The Netherlands has fostered an environment supportive of innovation. Multiple test sites, both offshore and onshore, are available for testing new technologies. Innovation is targeted to benefit future projects, and the homogenous nature of the Netherlands' offshore wind sites enables this.⁴⁹
- The Dutch Government's data collection initiative mitigates project risks and improves deliverability. Offshore survey data is collected on behalf of the Dutch Government and provided to all bidders. The data is now also available on a national data portal.

47. [NDC and ORE Catapult form floating offshore wind research partnership | News | The University of Aberdeen \(abdn.ac.uk\)](#)

48. Stage 1 of the SIM saw 38 projects selected, worth £9 billion in potential capital investment, and include port investment, new factories, and potential top tier FDIs. Stage 2 is due to commence in early 2024.

49. [Dutch Offshore Wind Innovation Guide 2024 \(rvo.nl\)](#)

France committed to the establishment and guaranteed development of the offshore wind industry with a strongly State-driven approach.

- France mandated strict local content requirements, which can be high-cost, but have allowed France, a country with a minimal existing supply chain, to become an established offshore wind market.
- France used clusters to identify and develop key opportunity areas for offshore wind. Its six clusters are aligned by an inter-cluster alliance: France Offshore Renewables. The clusters enable collaboration between regional agencies, focusing on economic development in the regions, ports, and local companies.⁵⁰
- France recognised that other jurisdictions were already established in fixed-bottom offshore wind. It therefore invested heavily in innovation to become an early leader in floating offshore wind, by tendering four 24MW demonstrator sites with generous subsidies. Commissioning is expected in 2024 for the first three of those projects.⁵¹

Taiwan had the benefit of major manufacturing and supply chain hubs from other industries but lacked specific offshore wind knowledge.

- The Taiwanese Government intervened in the fostering of the local offshore wind industry by enforcing localisation policies and in 2017, implemented a four-year Wind Power Promotion Plan to accelerate development of the offshore wind industry.⁵² This plan sought to encourage international corporations to invest in local offshore wind development and to encourage cooperation with local suppliers through Feed-in-Tariffs and Local Content Requirements, which led to an influx of international developers who supported the buildout of a local knowledge and expertise base.⁵³
- Taiwan has developed an advanced clustering programme, specifically promoting offshore wind clusters through initiatives such as the Industrial Development Bureau's Offshore Wind Energy Industry Promotion Plan. The aim is to create an environment where proximity leads to increased collaboration, reduced costs, and accelerated innovation in the supply chain. There are two main offshore wind cluster hubs for located around Taichung and Changhua, which have led to investments in blade and nacelle assembly at these locations.
- Taiwan has gained international recognition through its commitment to innovation. Taiwan has supported collaborative research, attracting collaborations with international companies and research institutions to enhance global partnerships. Taiwan has multiple demonstrator sites with a focus on both fixed and floating technology.

50. [France Offshore Renewables](#)

51. [Global offshore wind: France | Global law firm | Norton Rose Fulbright](#)

52. Chien, Ker-Hsuan. (2019). Pacing for Renewable Energy Development: The Developmental State in Taiwan's Offshore Wind Power. *Annals of the American Association of Geographers*. 10.1080/24694452.2019.1630246.

53. Ibid.

USA – Maryland⁵⁴ is strongly committed to development of the offshore wind industry at both state and federal levels.

- Work is underway for the formal establishment of an offshore wind cluster in Maryland. The State has invested in a local competency analysis and supplier database with the view to promoting a supply chain and cluster effort. These tools give visibility of local supply chain capability to prospective developers, enabling targeted investment.
- Maryland's qualitative flexible leasing criteria requires developers to proactively engage with labour unions and maximise local spend. Maintaining flexibility in evaluation criteria allows developers to focus local content efforts on specific and relevant competencies that exist. Proactive State support to developers has also resulted in strong local investment commitments for steel production, tower and foundation, cable OEM capability as well as a high level of port infrastructure improvement.
- Federal initiatives actively promote local content by offering tax incentives through several mechanisms such as the US Inflation Reduction Act, which provides tax incentives for stimulating domestic supply chain, and the Local Content Operating Fee Credit scheme, which offers a 50% rebate on operating fees for 5 years if components are domestically produced during leasing.
- Maryland Offshore Wind Innovation Centre was founded in 2016 with state funding and consists of researchers from five Maryland universities. Its collective ambition is to lower the cost of commercialising offshore wind in Maryland and more broadly, to increase fundamental scientific, engineering, and economic knowledge and innovation to enable a successful national offshore wind industry in the United States.⁵⁵ Innovation is also mandated at a federal level and, in 2022, the U.S. Department of Energy announced the Floating Offshore Wind Shot to drive U.S. leadership in floating offshore wind design, development and manufacturing.⁵⁶

54. Only the State of Maryland was examined as part of this research.

55. [WINDExchange: Maryland Universities Form National Offshore Wind Innovation Center \(energy.gov\)](https://www.energy.gov/windexchange/maryland-universities-form-national-offshore-wind-innovation-center)

56. [Advancing Offshore Wind Energy in the United States](https://www.energy.gov/advancing-offshore-wind-energy-in-the-united-states)

Appendix E

RD&I Programmes and Supports

SFI Programmes and Supports

SFI has extensive experience in effectively promoting deep collaboration between SMEs, multinationals and further and higher education institutes through several of its funding streams. Current research programmes that support cutting edge research in the areas of energy, climate and sustainability include:

- The **SFI Research Centres Programme** has created an environment where multi-institutional and multidisciplinary collaborations are now the norm, and where academia engages in deeply collaborative research partnerships with indigenous and multinational industries to deliver leading international research, cutting edge technologies and advancements. They also attract global top talent and develop the workforce of tomorrow. A new research centre call has recently been launched where applications under theme Energy, Climate and Sustainability were welcomed. Results from this call will be announced in 2025.
- The **SFI Spoke Award Programme** (rolling call open to existing SFI Research Centres) is a vehicle to enable the addition of new industrial and academic partners and projects to existing SFI Research Centres, allowing the centres to expand and develop in line with new priorities and opportunities. It enhances the ability of SFI Research Centres to deliver significant economic and societal impact for Ireland.
- The **SFI Industry RD&I Fellowship Programme** seeks to support academia-industry interactions in order to address industry informed challenges. Awards under this programme can be made to academic researchers (at faculty and postdoctoral level) wishing to spend time in industry worldwide. It provides for the temporary placement of academic researchers with an industry partner.
- The **SFI Strategic Partnerships Programme** (rolling call) is a flexible mechanism for academic researchers to build strategic collaborations with key stakeholders, such as industry, other funding agencies, charities, philanthropic organisations, higher education institutes (HEIs), or a combination of any of these.
- **Research infrastructure** supports the research community in building and sustaining the required infrastructural capacity to accomplish high-quality, high-impact and innovative research in areas of science, technology, engineering and mathematics that demonstrably enhance and support enterprise competitiveness and societal development in Ireland.
- The **National Challenge Based Fund** facilitates transdisciplinary teams of researchers and innovators to address national and global societal challenges in support of green transition.

Enterprise Ireland Supports

EI offers a wide range of supports to indigenous companies operating across all sectors. Examples of this type of support offered by EI include:

- **R&D Fund:** (Equity) – EI's High Potential Start-Up (HPSU) team provides hands-on support and advice to entrepreneurs and early-stage companies that are considered by EI to have the potential to achieve international sales and create employment with an innovative product, service or technology. Equity support and Convertible Loan Notes for HPSUs are offered.
- **R&D Grants:** EI's company R&D supports provide support for research, development, and technological innovation relevant at all stages of company development, to enable companies to progress from undertaking an initial research project to higher level innovation and R&D activities. The funding of R&D exists to support in-company projects that have the potential to develop novel products and services with a clear competitive advantage in their target market. This will enable companies to increase employment through sustainable increases in sales. The Agile Innovation Fund, for example, allows up to 50% in support for projects to a maximum total cost of €300,000 and has fast track approval.
- The Government's **Disruptive Technologies Innovation Fund (DTIF)**, which is administered by EI, plays an important role supporting enterprises in Ireland to exploit the enterprise opportunities associated with 'disruptive technologies' by de-risking collaborative projects. The projects can avail of the funding to develop and deploy their disruptive innovative technologies on a commercial basis, transforming their ability to respond to the opportunities and challenges presented by increased automation and digitalisation. All projects include collaborations between start-ups, SMEs, multinationals and academic institutions and must include at least one SME.

Enterprise Ireland Programmes

EI also offers programmes to increase the level of collaborative R&D activity between industry and academia. Such programmes include:

- The **Innovation Voucher** initiative facilitates company access to knowledge providers in the third-level colleges and is often the first step for a company on their innovation journey. It provides vouchers worth €5,000 (soon to be €10,000) to small businesses to introduce them to innovation, linking them with a network of knowledge providers, North and South of the border.
- **Innovation Partnerships** offer financial support to companies engaging in collaborative research projects with Irish Universities and Technological Universities; EI provides grants of up to 80% towards eligible costs of the research project.
- The **Technology Centre Programme** supports the establishment and maintenance of nine centres aimed at developing close interactions with

companies. The intention being the transferral of knowledge and skills about technologies of direct relevance to business. It allows industry groups to set a commercially valuable research agenda that academic researchers in the technology centre will deliver on.

- **Technology Gateways** provides for the support of applied research networks in Technological Universities and Institutes of Technology. It is aimed at building sufficient scale to allow them to make an impact on industry in their locality. The new European Regional Development Fund (ERDF) Tech Gateways Programme has been launched, with 17 Gateways now in place. Credit Gateway in Dundalk is particularly relevant as it provides technological expertise in the field of Wind & Distributed Energy; Zero Carbon & Energy Optimisation; and Energy Integration to generate solutions for the close to market needs of Irish industry and business sector.
- The **New Frontiers** programme provides training, support and mentoring to entrepreneurs who wish to accelerate the development of their new business.
- The **European Digital Innovation Hubs** (EDIH) programme, which has been supported since 2022, involved the establishment of four EDIHs that are intended to stimulate the broad uptake of AI, high performance computing, cybersecurity and as well as advanced digital skills and other digital technologies by industry (particularly SMEs). They are 'one stop shops' providing access to technical expertise and experimentation, innovation services such as financing advice, and the training and skills development necessary for a successful digital transformation.

EI programmes also seek to realise the commercial potential of Ireland's research community, which is achieved through the following.

- **Incubator space programmes** support the cost of building and management of incubator centres associated with Universities, Institutes of Technology and Technological Universities. They encourage the spin-off of technology, structured collaboration between firms in the locality and the college, meeting and improving on their targets and the development of programmes and supports.
- **Knowledge transfer initiatives**, in particular KT Boost, support a network of dedicated staff placed within the commercialisation function of third-level institutions (Innovation Offices) to ensure that best use is made of research outputs with commercial potential.
- **EI Commercialisation Fund** also supports researchers in Higher Education Institutions and RPOs to undertake research that has the potential to result in the commercialisation of new innovations by way of licenses to improve the competitiveness of Irish Industry or through the spin out of new start-up ventures.

Sustainable Energy Authority of Ireland (SEAI)

SEAI has responsibility for energy sector RD&I funding in Ireland. Historical funding of over €20 million was provided by SEAI to the ORE sector between 2004 and 2018. This included research into enabling technologies, such as dynamic cabling and remote monitoring technologies, advanced materials, and not only support for ocean energy technologies. In addition, SEAI has a strong legacy of supporting research in the onshore wind sector. Support for offshore wind through the SEAI RD&D programme exceeds €10 million since 2019.

- SEAI is the national contracting party to the IEA technology collaboration programmes (TCPs). Among these, the Wind TCP, Ocean Energy Systems (OES) TCP and Hydrogen TCP are relevant for ORE and Ireland is member to each. SEAI represents Ireland on the executive committees of these research programmes and appoints and co-ordinates Irish researchers involvement on the tasks and annexes of the global co-ordinated research priorities identified by the TCPs.
- SEAI is also the national contact point for the **Horizon Europe Pillar 3 – Innovation Europe** and the **Horizon Europe Energy Cluster – Cluster 5** – which is dedicated to climate, energy and mobility. There are two destinations dedicated to energy within Cluster 5. Destination 3: Sustainable, secure and competitive energy supply, which has a focus to deliver impact across three main areas: global leadership in renewable energy; energy systems, grids and storage; and carbon capture, utilisation and storage. Destination 4: Efficient, Sustainable and inclusive energy use, with a focus on innovations that boost energy efficiency and reduce energy demand across buildings and industry. SEAI also advises on the Clean Energy Technology Partnerships funding.
- The annual **SEAI National Energy RD&D Funding Programme** call is open to industry, third-level education bodies and public and semi-state bodies. There is an emphasis on collaboration between academia and industry or public and semi-state bodies or both. Successful projects can be funded for up to €1 million over a 4-year period. In 2022, OW-related projects were funded €3 million, and in 2023 that rose to €4.3 million. Further consideration is being given to expanding the SEAI supports schemes to include large pilot renewable projects. SEAI has a national energy research database⁵⁷ that includes all energy-related funded projects, including not only all SEAI funded projects but also externally funded energy-related projects, and currently lists 28 offshore wind related projects (ongoing or completed projects).
- SEAI is also responsible for the **national ORE test-site infrastructure** in partnership with MarEI and the Marine Institute, for supporting the development of technologies through the technology readiness levels (TRL) on a scale of 1 to 10, comprising:
 - A small-scale site includes the deepwater basin and test tanks at LIR National Ocean Test facility in Cork for technologies at TRLs of 1-3;

57. National Energy Research Database | Data & Insights | SEAI available here: <https://www.seai.ie/data-and-insights/seai-research/research-database/>

- An intermediate scale site at SmartBay Marine and Renewable Energy Test Site in Galway Bay for technologies at TRLs of 4-6; and
- A grid-connected test-site for technologies in the final stages of pre-commercial development at AMETS for technologies at TRLs of 7 to 10.
- SEAI initiated a pilot **Industry Access Programme** in 2021 to provide a pathway for the early-stage development of Irish ORE technologies. The main aim of the access programme was to ascertain the size and strength of the ORE technology pipeline in Ireland and advance them to higher TRLs such that they would be ready for open sea testing. Since 2022, it has been a full support scheme with a budget for 2023 of €70,000, having been €50,000 in its first two years. Lir has engaged with 33 Irish ORE development companies who are below TRL 4 as part of the Industry Access Programme. In the evaluation process priority is given to new applicants. The steady number of applications shows the strong demand for a call.
- SEAI takes part in research projects that support the development of ORE through coordination, facilitation or infrastructure development. Recent European projects include the OPIN (Ocean Power Innovation Network) and AFLOWT (Accelerating the market uptake of Floating Offshore Wind Technologies). For AFLOWT, SEAI jointly chaired (with the Fraunhofer Institute for Wind Energy Systems) the advisory board which produced the *Floating Offshore Wind Development Plan*⁵⁸ in 2023.

Marine Institute (MI)

The Marine Institute's legislated functions are "to undertake, to co-ordinate, to promote and to assist in marine research and development and to provide such services related to marine research and development that in the opinion of the Institute will promote economic development, create employment and protect the marine environment" (Marine Institute Act, 1991).

- As a Research Funder, the MI manages the **National Marine Research Programme**, which provides funding to the Irish marine sector through competitive calls. Funding is provided for marine research that addresses national strategic priorities, including those in Impact 2030.
- The MI administers on a competitive basis the national marine research funding programme. Research funding is awarded on a competitive basis for 'applied' marine-related R&D in line with the objectives set out in national strategies. The MI administers and manages the following categories of funding:
 - **Project-Based Awards:** Strategic Research Projects, Applied Research Projects, Demonstration Projects and Desk/Feasibility Studies;
 - **Researcher Awards:** Strategic Research Appointments, Research Capacity/Competency Building, Post-Doctoral Fellowships and PhD Scholarships;

58. AFLOWT: [Floating Offshore Wind Development Plan](#)

- **Industry-Led Research Awards:** Company Awards and Collaborative Awards; and
- **Infrastructure Awards:** Infrastructure Acquisition and Access to Infrastructure, e.g., Ship-Time on board the National Research Vessels and the SmartBay Test site in Galway Bay.
- As a Research Promoter, Co-ordinator and Catalyst, the MI co-ordinates and promotes marine research, bringing together industry, higher education institutions and government bodies to support the development of Ireland's knowledge economy and the marine sector.
- The MI provides a number of services related to the development of Ireland's vast marine resource. Specifically, the IMDO is dedicated to the development and promotion of the shipping and maritime transport sector. In addition, the MI liaises closely with national development agencies in order to maximise the economic potential of existing marine sectors (e.g., marine food) and emerging marine sectors (e.g., ORE).
- The MI also works closely with EI to promote and support 'Marine Ireland', e.g., through **Marine Ireland Industry Network (MIIN)**. MIIN is made up of a diverse array of companies, state organisations, research groups and higher education institutes, working in Ireland's blue economy. MIIN was established in 2016 with the aim of bringing together the many elements of Marine Ireland. Since its inception, it has enhanced the overall understanding of what the Irish marine capabilities are, the services and products on offer and the markets being served.
- The MI has developed world-class marine research infrastructure, including HQ & Laboratory Complex (54 labs) in Oranmore, Co. Galway; two multi-purpose National Research Vessels; a remotely operated vehicle (ROV); the SmartBay test site in Galway Bay; and a range of specialist scientific equipment and data management facilities.
- In the period from 2014 to 2023, the MI invested €4.5 million in funding for research under the ocean renewable energy theme. The MI will launch the next industry-led call in April 2024, with a proposed investment of €2.5 million.
- In addition to research vessel time and test facility access for ORE small scale devices to be tested in-situ, the historical datasets held by the MI and partners such as Met Éireann and SEAI are an important resource for researchers to access, together with continued collection of environmental and oceanographic data through monitoring programmes.

Other Initiatives

Funding - ISIF and Green Bonds

The National Treasury Management Agency (NTMA), manages the approximately €15 billion Ireland Strategic Investment Fund (ISIF). ISIF will continue to invest in driving the sustainable development of the Irish economy. In June 2022, the revised *ISIF Impact Strategy* was launched, and includes climate as one of its four key investment themes. ISIF's climate strategy is to make investments that help position Ireland for the net zero carbon economy envisaged under the national *Climate Action Plan* and improve the resilience of the Irish economy as the global market increasingly pivots towards sustainable business practices. ISIF's climate strategy encompasses investments ranging from sustainable infrastructure to new technologies and business models that will underpin the transition to net zero across the key carbon emitting elements of the economy: electricity, transport, buildings, agriculture and the broader enterprise.

Examples of investments the ISIF has made include:

- A commitment to Generation Investment Management's climate-led platform, Just Climate, which seeks to catalyse climate impact at scale in hard-to-decarbonise sectors.
- Investment into Energy Impact Partner's funds to enhance early and growth stage Irish companies' access to the right sources of capital.
- ISIF is also an investor in the Temporis Aurora fund and Greencoat Renewables - both of which are key players in the Irish renewables infrastructure area.

Specific green bonds are a valuable tool for governments as they can help to diversify and reduce the cost of capital for green projects by attracting new investors and, subject to design, also can act as a catalyst to mobilise private capital towards sustainable private-sector projects and to develop the market for sustainable finance.

For example, in late 2021, the NTMA's Ireland Strategic Investment Fund (ISIF) announced a €1 billion five-year climate action investment programme. To date, Ireland's sovereign green bond issuance has raised over €10 billion with proceeds allocated to green projects across six categories including: energy efficiency, renewable energy and clean transportation.

Important Projects of Common European Interest

Important Projects of Common European Interest (IPCEI) are large scale projects funded under a specific State Aid Framework used where there is a market or systemic failure that cannot be addressed by any other means. They are used to support projects where there is a substantial technological or financial risk to the participants, and therefore the project would not take place or would take place at a much smaller scale without the State aid. IPCEI focus on RD&I up to first industrial deployment and are open to companies of all sizes. Many research organisations also engage with IPCEI as so-called indirect partners, working with those companies leading on collaborative projects. While there is no EU IPCEI Fund, Member States can provide support to projects under the IPCEI State Aid Framework, the General Block Exemption Regulation and other State aid schemes (depending on the participant type).

To date, a number of IPCEI have been approved by the European Commission, including for hydrogen, and there are a number of future IPCEI in development. As yet, there has been no concrete proposal for an Offshore Wind IPCEI. However, should such an IPCEI be proposed, it will be important to strongly consider Irish participation in this IPCEI.

Foreign Direct Investment, International Supply Chain and Global Opportunities – Supports and programmes for international investment

IDA Ireland partners with investors to establish new business and to grow and expand operations in Ireland. Support programmes can include the following:

- Capital expenditure for development, construction and fit-out of new manufacturing facilities.
- Investment in energy efficiency and sustainability initiatives.
- Research and development of new products, services, and processes.
- Talent development and digitalisation to strengthen and upskill capability.
- Creation of high value employment.

Support programmes are negotiated and agreed directly with IDA Ireland on a case-by-case basis.



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