



## THE UK OFFSHORE RENEWABLES SUPPLY CHAIN

A NOTE FROM TIM PICK,  
OFFSHORE WIND CHAMPION

ORE CATAPULT'S SUPPORT  
PROGRAMMES AVAILABLE

FUTURE OPPORTUNITIES IN  
OFFSHORE WIND

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## FOREWORD



By Tim Pick

*Offshore Wind Champion and co-chair of the Offshore Wind Acceleration Taskforce*

**The Offshore Wind Acceleration Taskforce, which I lead alongside Minister of State for Climate Graham Stuart, is tasked by the UK Government with spearheading the work to accelerate new offshore wind projects around the UK.**

Since May, I have had the opportunity to work with exceptional individuals, teams and companies from across the industry to get to grips with the challenges and opportunities arising as we seek to meet the ambitious deployment targets set out in the British Energy Security Strategy. The constraints of consenting, the availability of grid connections and supply chain readiness are well known and, whilst they are not easy to resolve, I have witnessed a strong desire from both industry and government to work collaboratively on identifying the solutions.

I am certain that the area of greatest opportunity, and one that we absolutely have to capitalise on, is the growth of an indigenous, sustainable UK supply chain, particularly in the context of floating offshore wind. Our systems and processes have proven to be a great

success in driving down the cost of offshore wind, and that is an achievement well worth celebrating. But it's a one-dimensional victory, which doesn't fully seize the opportunity for jobs and economic benefits that should come from a vibrant local supply chain. The Scotwind process has shown us that alternative approaches are possible, and that it's always possible to evolve and re-balance competing priorities.

I am delighted to introduce this edition of ORE Catapult's ReEnergise magazine, spotlighting not only that opportunity but some of the incredible innovation and the companies behind it, and the support programmes enabling their progress.

UK offshore wind is undoubtedly a great success – now let us take it to the next level.

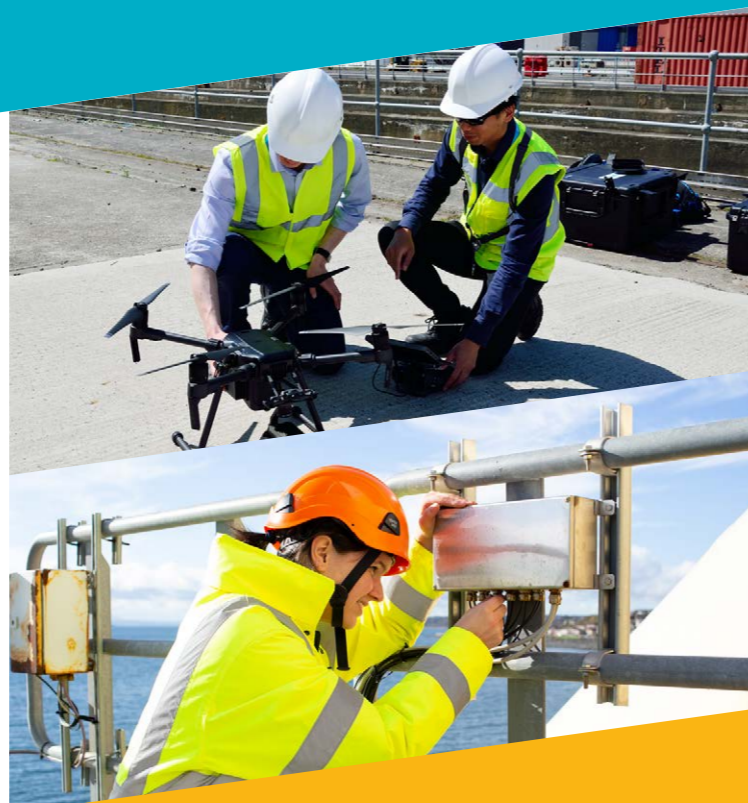
**CATAPULT**  
Offshore Renewable Energy

### BUILDING A WORLD-CLASS SUPPLY CHAIN

At ORE Catapult we use our unique facilities, research, and engineering knowledge to bring together industry and academia and drive forward innovation in renewable energy through the delivery of a number of supply chain growth programmes, such as:

- Offshore Wind Growth Partnership
- Fit4Offshore Renewables
- Launch Academy

We provide R&D, innovation, commercialisation and company growth support to SMEs to develop the next generation of cutting-edge innovations in the offshore wind, wave and tidal energy sectors.



To find out more visit:  
[ore.catapult.org.uk/spotlightsupplychain](https://ore.catapult.org.uk/spotlightsupplychain)





# OFFSHORE RENEWABLES AND THE UK SUPPLY CHAIN

**Offshore renewable energy is experiencing a rapid evolution as technology and innovation collide to herald a new industrial revolution.**

The exponential growth we have seen in the sector over recent years offers a huge opportunity, but how do we ensure this opportunity is fully realised and capitalise on this growth across the UK?

In the current green energy landscape, offshore wind already plays a leading role, which is set to increase as the industry responds to the UK Government's target of 50GW installed by 2030. The catalysts of the ScotWind, Round 4, INTOG, and now Celtic Sea leasing rounds, are accelerating projects over the next decade – developing the industry and helping to create greater energy independence through a sustainable homegrown renewable energy resource.

It needs to move at pace. It has taken 20 years to get us to where we are now, with just over 10GW offshore wind installed. We now have just eight years to deliver four times that amount.

So what is the UK Supply Chain and how do we make this opportunity a success story for all involved? The supply chain is made up of people – their skills and knowledge; technology – the engineering and AI of the future; and innovation – the tangible products needed to make an offshore installation a reality.

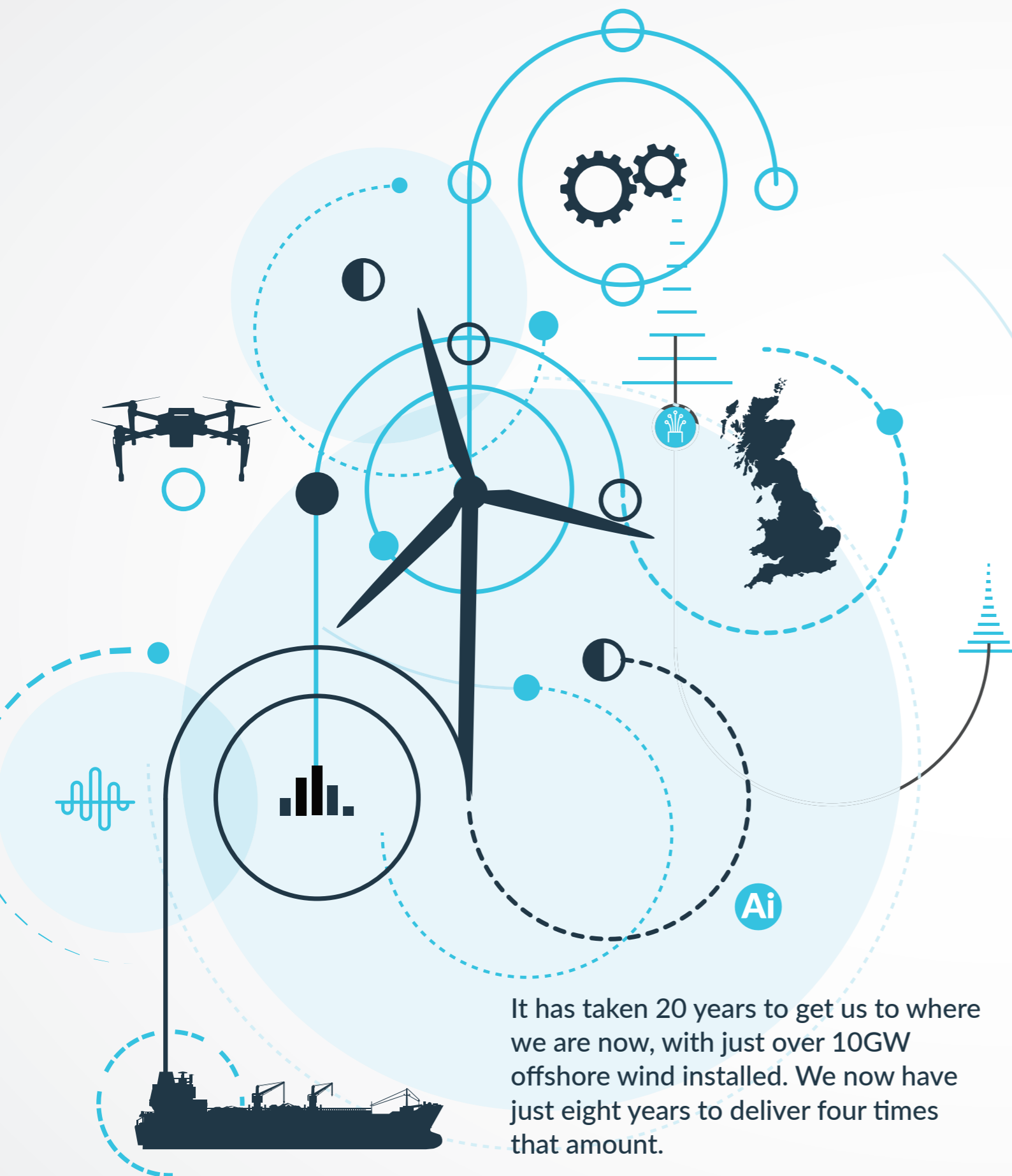
It is local, regional, and national – but strategic collaboration is needed to realise the opportunity across coastal communities, regional boundaries and national interests - joining together people, technology and innovation.

As demonstrated by the various leasing rounds mentioned, the UK has successfully established a project pipeline, but the focus also needs to ensure we are developing the right skills pipeline. Industry and government have an important part to play but we should be open to innovative new ideas as we invest in and attract the skills needed for the near future.

At ORE Catapult we are supporting the UK supply chain by working with companies that are developing new products and services for the market, de-risking offshore projects to secure future jobs, and addressing the various stages of supply chain growth with programmes that support companies from concept to commercialisation. We practically support innovation and the development of technology, and we provide programmes that allow big ideas to become reality.

Offshore renewable energy is taking off, but we need to make sure we are meeting the needs of the UK supply chain today so that we can deliver the renewable project pipeline of tomorrow.

**It has taken 20 years to get us to where we are now, with just over 10GW offshore wind installed. We now have just eight years to deliver four times that amount.**





# SUPPORT FROM ORE CATAPULT

## OWGP

Funded by industry and delivered by ORE Catapult, the Offshore Wind Growth Partnership (OWGP) is a business transformation programme, promoting closer collaboration across the supply chain, implementing structured productivity improvement programmes and facilitating shared growth opportunities between developers and the supply chain.

[owgp.org.uk](http://owgp.org.uk)

## MEECE

ORE Catapult's Marine Energy Engineering Centre of Excellence (MEECE) is delivering research, development and demonstration activities to support innovation and growth of the Welsh supply chain, accelerating the commercialisation of the wave, tidal and offshore wind sectors by reducing the cost of energy.

[meece.org.uk](http://meece.org.uk)

## F4OR

F4OR is a unique service to help the UK supply chain get ready to bid for work in the offshore renewable energy sector. It aims to support the development of an increasingly competent, capable and competitive UK offshore renewable energy supply chain – maximising opportunity for the UK supply chain, both domestically and globally.

[ore.catapult.org.uk/fit-4-offshore-renewables](http://ore.catapult.org.uk/fit-4-offshore-renewables)

## LAUNCH ACADEMY

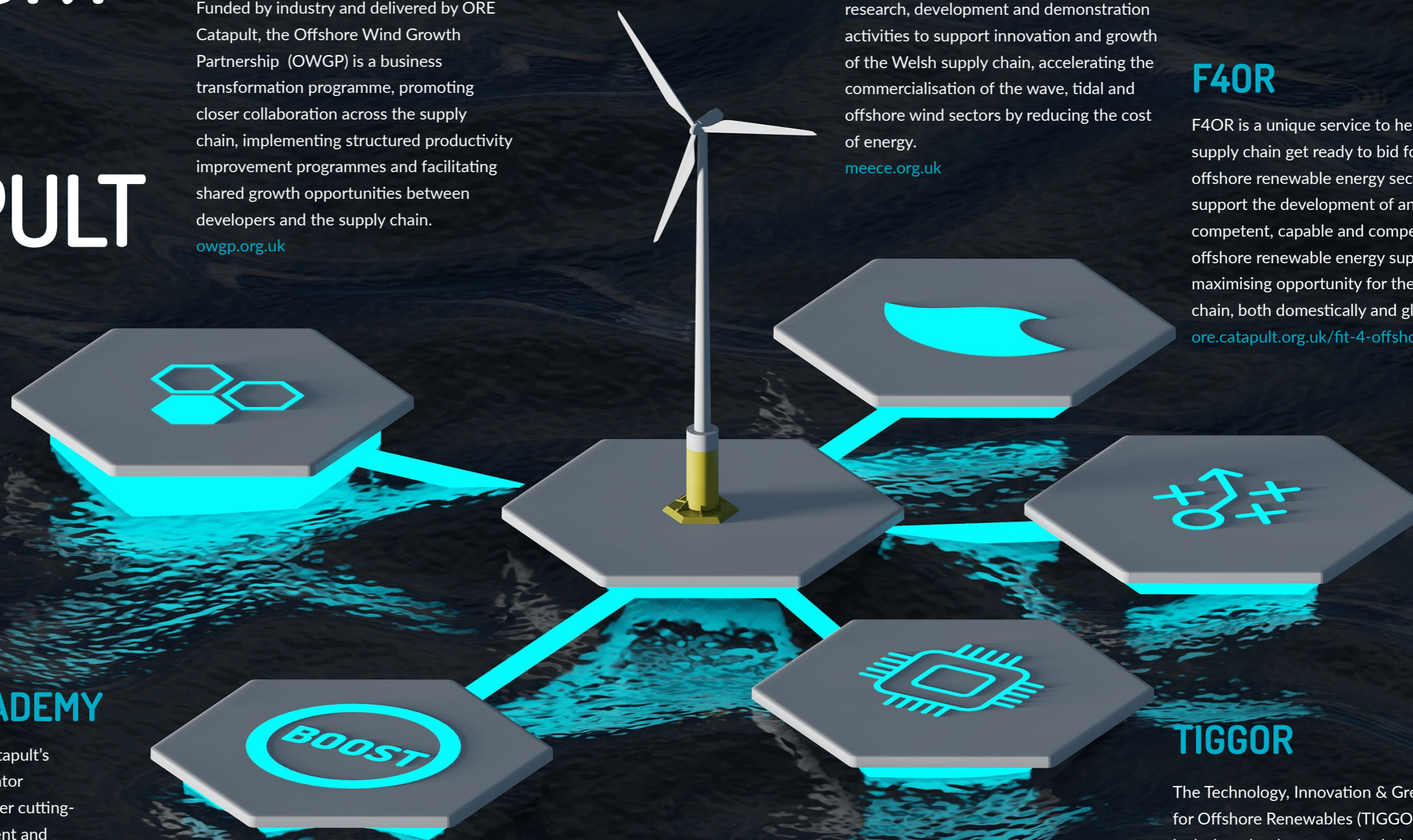
Launch Academy is ORE Catapult's flagship technology accelerator programme, bringing together cutting-edge technology development and business support under one roof, providing the cohort with the opportunity to participate in a comprehensive programme delivered by ORE Catapult and sponsored by major offshore wind industry players, including bp, Equinor, RWE, and Orsted.

[ore.catapult.org.uk/launch-academy](http://ore.catapult.org.uk/launch-academy)

## TIGGOR

The Technology, Innovation & Green Growth for Offshore Renewables (TIGGOR) programme is designed to boost supply chain growth and productivity in the North of Tyne and wider North East England region's offshore wind and subsea sectors. Funded primarily by the North of Tyne Combined Authority (NTCA), the programme is designed to boost supply chain growth and productivity in the region's burgeoning offshore wind and subsea sectors.

[ore.catapult.org.uk/tiggor](http://ore.catapult.org.uk/tiggor)





# SPOTLIGHT ON... UK INNOVATION

In this section we shine a spotlight on innovative companies within the UK supply chain that are developing exciting technologies and services to improve offshore wind operations.

All the companies highlighted below have progressed through one of the supply chain support programmes that ORE Catapult offers.



**ZELIM**  
NATURE WILL NOT TAKE THEM

Edinburgh-based Zelim is developing the world's first unmanned search and rescue vessel to improve safety for offshore wind farms. Zelim aims to revolutionise 'far from shore' operations by introducing remotely piloted lifesaving daughter craft, to provide emergency response with no additional risk to personnel.

In 2019, Zelim was one of the original National Launch Academy cohort, with Sam Mayall, founder of Zelim, saying the programme put a 'turbo charger into our commercialisation'. With the Launch Academy expert support, Zelim secured investment and won two grants to support our technology development as well as establish an IP strategy and better articulate its value proposition to the offshore wind sector.

Since then, the company has gone from strength to strength, receiving funding for follow-on projects with ORE Catapult and the Offshore Wind Growth Partnership (OWGP) to further develop the unmanned rescue vessel technology. In less than three years, Zelim has gone from two employees at the start of the Launch Academy programme to ten and progressed its vessel from Technology Readiness Level (TRL) 2 to 6. Its first vessel will start sea trials in Spring 2023.

Launched in 2020, JET Connectivity is delivering 5G communications networks and live streamed data collection for remote, offshore environments to enable safe and secure, sustainable, smart operations.

In 2021, JET was part of an OWGP cohort, receiving a share of £3.5 million funding pot to accelerate their growth in the offshore wind supply chain.

In March 2022, JET then successfully secured a spot on Launch Academy. Since joining the technology accelerator, the company has secured over £500,000 in grant funding from both UK Research and Innovation and in commercial contracts. It has also successfully launched a floating 5G base station platform, hired seven new staff members, and opened a workshop facility for engineering development.







For over 20 years, MJR Power and Automation has successfully delivered projects to the marine, offshore energy and renewable sectors providing consultancy, engineering, construction and installation expertise to a global customer base from its headquarters in Teesside.

MJR joined forces with ORE Catapult back in 2021 through the Clean Maritime Demonstration Competition to help develop a world-first offshore vessel charging system taking power from an offshore wind farm. These projects helped pave the way towards a future of zero-emissions shipping with clean vessels and alternative fuels.

To further enhance its offshore renewable energy offering, MJR was successful in its application for our Launch Academy technology accelerator programme. Since taking part MJR have experienced a marked increase in customer enquiries and requests for quotes (RFQs) from wind farm owners and operators, as well as vessel builders. It now boasts eight new active prospective customers, with new enquiries running at two per week.



Aberdeen-based energy services company, THREE60 Energy, is transferring its knowledge and expertise gained from years of work within oil and gas to offshore renewables.

To become more competitive in the offshore renewables industry, THREE60 Energy took part in the Fit 4 Offshore Renewables (F4OR) programme as part of the North-East Scotland cohort where it was reviewed based on its business-specific and industry-specific capabilities. THREE60 had the opportunity to learn about the wind sector and significantly enhance its understanding of the lifecycle and challenges of an offshore wind farm development.

As a result of the insight and understanding gained through the programme, THREE60 proceeded with an acquisition of a Scottish onshore wind operations and maintenance business. The capability and technical expertise that this onshore wind acquisition brings, coupled with its existing offshore capability and F4OR 'Granted Status', sets its strategic intent in supporting the onshore and offshore wind markets, both in the UK and internationally.



# REALISING THE OPPORTUNITY

Behind every successful industry is a strong, competitive supply chain providing the innovation, products and services needed for global success.

The challenge is how do we ensure the offshore renewable energy sector can capitalise on the opportunities for extensive supply chain growth?

In this article we explore how the development of skills, a circular economy, and a revamped consenting process could ensure a strong and sustainable supply chain for offshore renewables.

## Skills Development

This first area of supply chain development focuses on the people within our industry. To deliver on the UK's ambitious offshore wind targets, we are likely to need a new and advanced national skillset- not to mention the sheer number of people who will need to be employed in the offshore wind supply chain.

This skills challenge has been recognised by the industry, with the Offshore Wind Sector Deal targeting 27,000 people within the workforce by 2030. But how do we make this a reality?

Firstly, we need to build on what the UK already has. For example, it's imperative that skills and knowledge from the oil and gas sector gets captured so that we can see a strong energy transition, which continues to create opportunities for the UK workforce. There are a lot of similarities between oil and gas and offshore wind, but there are clear differences too. By maximising the benefits of the former, and better understanding the latter, we can put the UK on the front foot to retain our skilled workforce and world-leading position.

Although this transfer of skills is vital, it is not the only tool we will need. For us to achieve the targets set out, a paradigm shift in our workforce is required. Engaging with the potential workforce from an early age through STEM activities and engagement ensures the future generation of offshore wind skills are being developed in tandem with the growing industry. Not only that, it paves the way for entirely new careers to emerge based on the skills demanded by the energy revolution, such as data and digital, robotics and AI, and sustainability.

## Circular Economy

Secondly, we need to look at how the offshore wind sector can become more sustainable as it expands. To meet our targets, we are going to need an extraordinary amount of wind turbines. Over time older turbines require repair or come to the end of their operational life, and thus create a huge opportunity for supply chain within a circular economy for materials derived from decommissioned turbines.

Our 'End of Life Materials Mapping for Offshore Wind in Scotland' report highlighted the potential for a circular economy around the offshore wind sector that could slash carbon emissions by 34% and provide an extra 20,000 jobs around the UK. It showcased the huge supply chain opportunity created by the volume of growth we're likely to see in years to come, and how a circular economy could be created.

Investment in a circular economy is essential to building capability and capacity to recycle wind turbines domestically and meet the target of 60% UK content for future offshore wind developments.





## Consenting

**But like most things, this challenge can be turned into opportunity.**

**Bringing in all stakeholders, including developers and statutory bodies, early on to identify common ground will ensure that consenting is fast-tracked.**

Finally, we need to closely examine how improved consenting processes can facilitate supply chain growth. The UK Government has set ambitious climate change and carbon reduction targets to achieve Net Zero by 2050. To achieve this, it is crucial the consenting process for offshore developments is fit-for-purpose to enable the necessary work in appropriate timescales.

Currently, it takes an estimated 3-5 years for a wind farm developer to go from pre-application to final determination of necessary consents. When other factors involved in the development process are factored in we have seen projects take around a decade to get from being awarded a site to having their wind farm up and running.

If the UK is to deploy the scale of offshore wind, particularly floating wind, that is required for the Net Zero targets, this time needs to be slashed.

But like most things, this challenge can be turned into opportunity.

Bringing in all stakeholders, including developers and statutory bodies, early on to identify common ground will ensure that consenting is fast-tracked.

These three factors are just a handful of the challenges that exist for companies operating in and looking to

move into the offshore wind sector. However, they are all challenges which can and must be turned in to opportunity. Through programmes like OWGP, Fit 4 Offshore Renewables and Launch Academy, ORE Catapult is helping the UK supply chain realise its full potential, and through our testing and validation facilities we are de-risking the next generation of UK projects.

We are committed to playing our role in finding the solutions which will turn opportunity into reality for the UK offshore wind supply chain.







# HOW LEASING ROUNDS PROPEL GROWTH

The leasing rounds developed across the UK in the past few years have positively impacted the offshore wind supply chain opportunity in a number of different ways.

They have provided a specific focus for the sustainable long term project pipelines that we need to see if the UK is going to make the most of our offshore wind potential.

The scale of opportunity these leasing rounds have created can hardly be over exaggerated. Over 30GW of potential offshore wind projects came through The Crown Estate's Round 4 leasing and Crown Estate Scotland's ScotWind Leasing. If any current or potential supply chain company in the UK was under any illusion as to the scale of the next ramp up in the expansion of offshore wind, and the opportunities that will bring, it has now been spelled out for all to see. Offshore wind is primed to be a huge part of the UK's future economy.

It is not, of course, the job of leasing bodies to make commercial and business decisions. Theirs is to create the opportunity for these technologies to develop, and by that measure, both processes passed with flying colours.

As well as the establishment of this major project pipeline, there were two other eye catching developments within these leasing rounds which have the potential to be hugely significant for UK supply chain providers.

The first of these was the entry into the UK market of major oil and gas companies like bp, Shell and Total. The transition of major oil and gas companies, via these leasing rounds, offers a huge opportunity for the UK to build on its long standing expertise in that industry and adapt it to power the race to net zero.

The second element is the commitments, through ScotWind, that developers were required to have as part of their applications via the Supply Chain Development Statement process. This led to billions of pounds worth of supply chain commitments for Scottish and UK supply chain providers and has encouraged early engagement between developers and suppliers.

Looking down the line, we have further leasing processes under way in different parts of the UK.

North of the border, the Innovation and Targeted Oil and Gas (INTOG) leasing process is well under way, with the successful bidders being announced soon. It offers a fantastic opportunity for offshore wind farms to be linked up to oil and gas infrastructure in order for them to run their operations through renewable power, and can help fast track the North Sea transition.

At the other end of the country we have the Celtic Sea leasing opportunity, which is set to propel south Wales and south west England toward the benefits that other parts of the UK have gained through offshore wind.

The potential for an initial 4GW of offshore wind through the leasing process should provide a focus and an impetus for supply chain development and expansion across south Wales and the south west of England.

One thing all these leasing processes have in common is opportunity they create for the offshore wind sector to take the next step. That project pipeline in turn gives those involved in the supply chain, confidence that there is a sustainable, long term, commercial opportunity within the grasp of UK companies.

Between them, they create a roadmap for the UK supply chain to see where the opportunities lie, and what the timescale of those opportunities are. This means they can make the investment and resource decisions needed to realise new possibilities.



# FUTURE OPPORTUNITIES FOR THE OFFSHORE WIND SUPPLY CHAIN

# 2030

## UK Targets

- The UK Government has set a target to reach 50GW of offshore wind installed by 2030.
- The Scottish Government aim to generate 50% of Scotland's overall energy consumption from renewable sources by 2030 including up to 11GW of Scottish offshore wind capacity.

## Innovation and Targeted Oil and Gas (INTOG)

- Leasing results issued 2023 that will support projects that directly reduce emissions from oil and gas production (up to a total capacity of 5.7GW) and drive commercialisation and innovation in offshore wind (up to a total capacity of 500MW).

## Contracts for Difference Allocation Rounds

- The UK Government Contracts for Difference (CfD) Allocation Round 5 opens in March 2023

- The first CfD Allocation Round 4 projects are due to come online in 2023-2024.
  - This will see a variety of technologies supported through AR4 include tidal stream and floating offshore wind for the first time, as well as established solar, onshore and offshore wind technologies.
  - At least 7 GW of new offshore wind projects in the waters around England and Wales by 2030
    - enough to power more than six million homes.

## Celtic Sea Leasing

- The leasing process could see rights awarded by the end of 2023, with projects delivered from early 2030s
  - The Crown Estate's leasing round for floating offshore wind leasing in the Celtic Sea hopes to unlock up to 4GW of new clean energy capacity in England and Wales

## ScotWind Leasing

- Scotwind projects are expected to begin build out before the end of the decade (late 2020s).
  - There are currently 20 ScotWind projects with seabed option agreements that last up to 10 years. Crown Estate Scotland will offer a full seabed lease (enabling projects to be built and operated) once developers have secured the necessary consents, licences, and finance. 13 of the 20 projects are for floating rather than fixed wind turbines.

## The Global Landscape

### USA

President Biden has set a goal of deploying 30GW of offshore wind by 2030 - enough to power 10 million homes with clean energy, support 77,000 jobs, and spur private investment across the supply chain. The administration will focus on developing new floating offshore wind platforms in deep waters along the West Coast and in the Gulf of Maine.

### China

China has become the world's largest offshore wind market. In 2021, the country erected 16.9GW new turbines offshore and the cumulative installed capacity of offshore wind is just under 26.4 GW.

Chinese local regulators plan to add at least 60GW offshore wind capacity between by 2025, according to plans established by local governments.



**CONTACT US**

✉ [info@ore.catapult.org.uk](mailto:info@ore.catapult.org.uk)

[ore.catapult.org.uk](http://ore.catapult.org.uk)

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