

# CONTENTS

- INTRODUCTION 4
- **SUPPLY CHAIN INSIGHT** 5
- **ONSHORE WIND SHOWCASE** 6
- 8 **ONSHORE WIND PIPELINE ANALYSIS**
- 9 **OFFSHORE WIND PIPELINE ANALYSIS**
- INTRODUCING THE CLEAN ENERGY CLUSTER 10
- DOCUMENT SPONSORS 12
- **SUPPLIER CASE STUDIES** 16
- INDUSTRY GROUPS 48
- 50 AWARD WINNING SUPPLIERS
- 51 **UPCOMING EVENTS**

#### 1 **1STOPWIND**

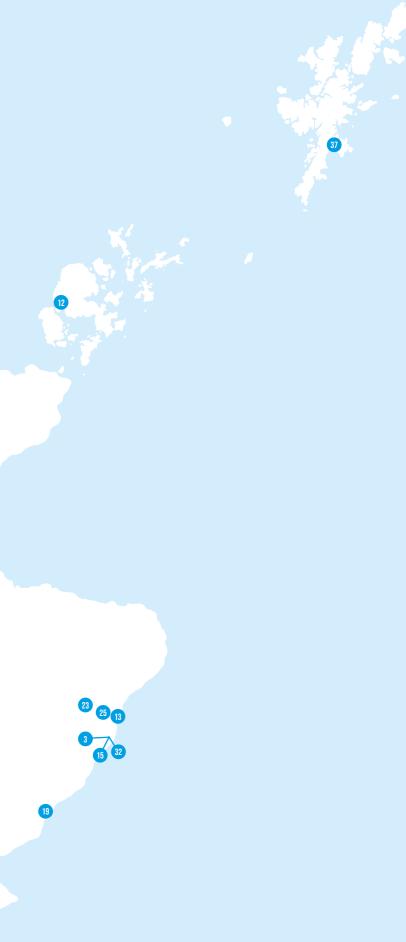
- **AIRA HOME** 2
- 3 APOLLO
- BLACK BAWKS DATA SCIENCE 4
- BRIGGS MARINE 5
- 6 **BVG ASSOCIATES**
- 7 CAMMO SOLAR SOLUTIONS
- ECO HIRE 8
- 9 EDGE SOLUTIONS 10
- EMTEC ENERGY
- 11 EMR RENEWABLES
- 12 EUROPEAN MARINE ENERGY CENTRE
- 13 FIRST MARINE SOLUTIONS
- 14 GCE
- 15 GQS 16
- GRAVITRICITY 17 HAVENTUS
- LOCOGEN
- 18
- 19 MONTROSE PORT AUTHORITY
- 20 MUIR CONSTRUCTION

- 21 NORDEX 22 PICT OFFSHORE PIER SOLUTIONS 23 24 QUOCEANT R&B SWITCHGEAR GROUP 25
  - 26 REAMP
  - 27 RES
  - SARENS PSG 28
  - SLR CONSULTING 29
  - STORR ACCESS 30
  - TTI MARINE RENEWABLES 31
  - TERNAN ENERGY 32
  - 33 THINKHIRE
  - 34 VENTERRA
  - **VI RENEWABLES** 35
  - VITAL ENERGI 36
  - 37 VOAR
  - 38 WASTECARE
  - **39** WOOD THILSTED PARTNERS



2
1 27 6 26 1 36 33

4



Scottish Renewables' Supply Chain Impact Statement | 3



Scotland's renewable energy industry and its supply chain are powering ahead, driving the transition towards a cleaner, more secure energy system.

#### **Claire Mack | Chief Executive**

Our supply chain are critical partners in the delivery of Scotland's energy ambitions.

Scotland has ambitious goals to achieve 11GW of offshore wind and 20GW of onshore wind by 2030. The increasing activity in marine, solar, low-carbon heat and green hydrogen is a major economic opportunity for the country's clean energy supply chain.

Each year, I look forward to reading the latest Supply Chain Impact Statement to learn more about the businesses that are front and centre of Scotland's efforts to tackle climate change. These organisations are not only supporting the move to a clean energy system but are fuelling economic growth and delivering jobs across the country.

From heat pump suppliers and training providers to mooring specialists and blade recycling, hundreds of organisations are tapping into the growing opportunities our industry has to offer.

Suppliers working across offshore and onshore wind, energy storage, green heat, wave, tidal, green hydrogen and battery technologies continue to invest in their skills, capabilities and facilities to meet the demands of a world moving away from the use of fossil fuels.

Globally, the renewable energy landscape is continuously evolving and the past year has seen many major developments.

In December 2024, the UK Government unveiled its Clean Power Action Plan, outlining how it aims to deliver a clean energy system by 2030. This has focused attention on the urgent need to build more renewable energy infrastructure and reaffirmed the crucial role of the supply chain in delivering these ambitious targets.

The past 12 months have shown that Scotland's renewable energy industry continues to attract major investment, with a wealth of announcements centred on the supply chain:

• Japanese manufacturer Sumitomo Electric broke ground on its £350 million subsea cable facility at the Port of Nigg.

- More than £55 million awarded to the Port of Cromarty Firth through the UK Government's Floating Offshore Wind Manufacturing Investment Scheme.
- As part of the Scottish Government's £500 million commitment to develop the offshore wind supply chain:
- A £20 million investment from the Scottish National Investment Bank in XLCC's cable factory in Ayrshire.
- Highlands and Islands Enterprise (HIE) approved • £10 million of funding for the Port of Nigg to develop its Inner East Quay.
- HIE also awarded £5 million to support the • development of the Scapa Deep Water Quay in Orkney.
- Scottish Enterprise granted £3.2 million to Montrose Port Authority to expand its renewable energy operations.

These major investments demonstrate how key steps are being taken to prime the growth of the supply chain. enhance infrastructure, foster innovation and generate thousands of green jobs, ensuring Scotland remains at the forefront of the renewable energy revolution.

The supply chain has shown it is ready to rise and meet the opportunities that lie ahead. However, amid an uncertain policy landscape, increasing material costs and international competition, continued collaboration between governments, investors and industry remains essential to achieving Scotland's energy and climate goals.

With the support of our document sponsors, this publication shines a spotlight on the businesses driving the push toward a net-zero nation. The case studies in this year's Supply Chain Impact Statement provide a snapshot of the suppliers leading the charge in economic growth and the future of Scotland's renewable energy industry.

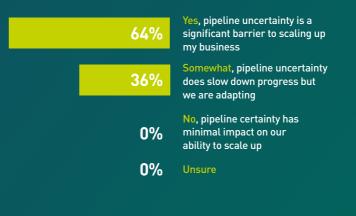


# **SUPPLY CHAIN INSIGHT**

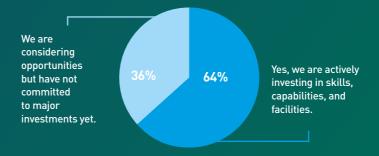
As part of this year's Supply Chain Impact Statement, we sought to capture a view of current industry sentiment, including both the progress made and barriers that persist.

We asked our members a series of questions to gauge how they think the renewable energy industry is performing in Scotland. Here are the results:

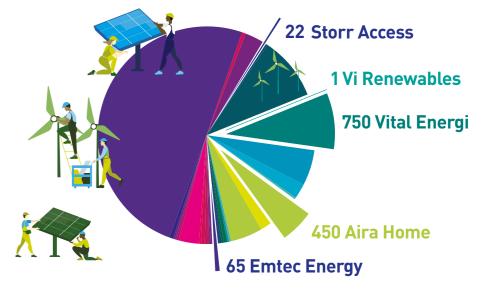
Is uncertainty in the renewable energy pipeline hindering your ability to scale up your business in the renewable energy industry?



Is your business investing in skills, capabilities and facilities to capitalise on Scotland's renewable energy

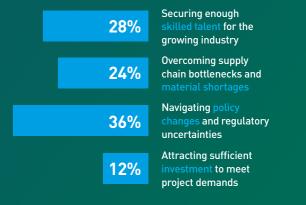


The organisations in these pages represent more than 9.706 renewable energy jobs across Scotland and beyond.

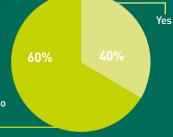








Are the UK and Scottish **Governments enabling the** right market conditions for Scottish businesses to compete and secure contracts on renewable energy projects?



# **ONSHORE WIND SHOWCASE**

### The economic impact of local content

### Scotland is on the cusp of a major economic transformation, driven by its ambitious clean energy targets.

One of the technologies leading the charge is onshore wind, with projects delivering clean electricity to businesses and homes across the country. This growth is set to continue as the sector works to deliver the Scottish Government's target of 20GW of operational onshore wind by 2030.

The construction, installation and operation of these projects require the skills and experience of hundreds of supply chain companies, many of which are already providing products and services to the market in Scotland.

By utilising local expertise, these developments create thousands of jobs, foster innovation and drive economic growth around the country.

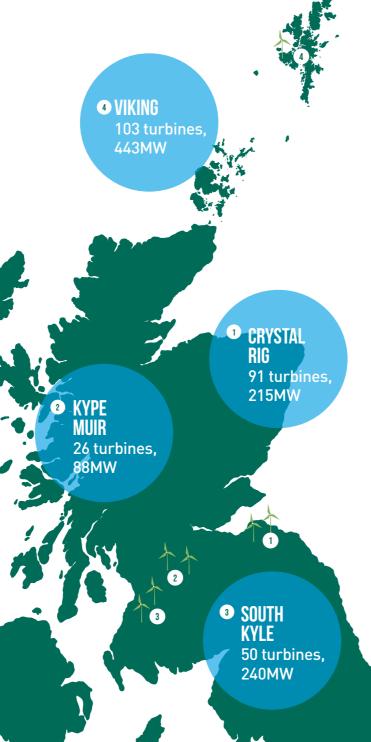
Beyond the economic benefits, investing in the local supplier network enhances project efficiency, strengthens relationships and decreases international risk. It also reduces carbon emissions, prepares the industry for the future and delivers long-lasting benefits to local communities.

To improve engagement with the local supply chain, developers are removing barriers for businesses with no prior experience in the sector and implementing measures to ensure organisations can access the opportunities arising from onshore wind projects. Early and proactive engagement strategies allow companies to understand contracting processes and offer advice on how to get involved.

Developers are also working closely with tier 1 contractors to host meet-the-contractor events which offer networking opportunities and provide suppliers with direct access to procurement teams.

6 | Scottish Renewables' Supply Chain Impact Statement

These endeavours have led to many success stories and while continued collaboration between governments and industry is essential to support the growth of ambitious home-grown businesses, our Onshore Wind Showcase highlights the positive impact onshore wind farms can have on the communities in which they operate.



### **STRAIGHT FROM THE SUPPLIERS**

"The support for our business through the construction of the Viking wind farm and Shetland HVDC link has been a vital lifeline, particularly through the covid pandemic when visitor numbers rapidly reduced to Shetland.

"The projects have provided a predictable and reliable income to our company and staff members over the past few years, and we've been able to grow, reinvest and increase our fleet as a result.

"The projects have supported not only our 26 car-hire employees but the wider company and Bolts' supply chain of local providers and services, which we are incredibly grateful for as a small, islands-based business."

John Garriock, Managing Director, Bolts Car Hire Limited

 CRYSTAL RIG WIND FARM: The Crystal Rig project has created 190 construction jobs and 89 long-term operations and maintenance roles, alongside signing £324 million in contracts with Scottish businesses since June 2024.

**KYPE MUIR WIND FARM:** Over the project's lifetime, it expects to spend £125 million and generate 544 job years in Scotland. Of this, nearly £26 million and 75 job years are expected to benefit the surrounding area in South Lanarkshire.

These four projects demonstrate the significant positive impact that onshore wind can have on businesses across Scotland. With 270 turbines generating more than 986MW, they are on track to create more than 1,978 jobs and employ a substantial cohort of local, home-grown talent.

The statistics outlined by onshore wind developers provide a clear view of the economic potential presented by the 11GW onshore wind pipeline, highlighting the tangible benefits of using regional and national suppliers - not only for the energy sector but for Scotland as a whole.

"As a local Scottish contractor operating for more than 70 years, engaging with the local supply chain has been critical in our success. In addition, developer support in prioritising local supply chains through meet-the-buyer events, supplier registrations and project publications has consistently proven invaluable.

"By leveraging developer support, we ensure that local employment and suppliers receive the greatest possible value. This includes engaging local hire companies, material suppliers and creating full-time job opportunities. These efforts not only strengthen the local economy but also generate sustainable growth within communities, reinforcing the long-term benefits of each project."

Paul Colebourn, Agent, RJ McLeod

SOUTH KYLE WIND FARM: The South Kyle development is expected to generate £93 million and 720 jobs in Scotland over the course of the project's lifetime. Of this, £44 million and 270 jobs are forecast to benefit the South West Scotland region.

VIKING WIND FARM: 70 Shetland-based companies have benefited from the Viking project through construction with an £80 million spend to date in the local economy. At peak construction, Viking created around 400 jobs with an additional 35 full-time local operations and maintenance jobs expected throughout its lifetime.

# **SCOTLAND ONSHORE WIND PIPELINE ANALYSIS**

#### In September 2023, the Scottish Government, Scottish Renewables and the onshore wind sector came together to launch the Scottish Onshore Wind Sector Deal.

This landmark collaboration outlines a comprehensive action plan to turn the vision of 20GW of operational onshore wind in Scotland by 2030 into a reality.

To achieve this 2030 goal, Scottish Renewables commissioned BVG Associates to build a detailed database and carry out a pipeline analysis for onshore wind projects across Scotland.

The analysis provides a comprehensive view of the projected capacity to 2030 and beyond, effectively tracking new, life-extension and re-powering projects progress through key stages of development. Crucially, the market intelligence will improve decision-making in the years ahead and help the supply chain to fully grasp the abundance of opportunities in Scotland's growing onshore wind sector.

The figures below provide a summary of the latest pipeline analysis published in December 2024.



Figure 2 Expected timeline to 2033 for Scenario 2



Deeper analysis shows that the ability to deliver 20GW by 2030 is likely to be limited by current resource constraints. To achieve this target:

- Onshore wind projects consented by the Energy Consents Unit will need to at least double for three of the next five years.
- By 2029, Police Scotland's ability to manage abnormal loads must increase by up to four times its current maximum capacity.
- Contracts for Difference (CfD) allocations for onshore wind will need to increase from 0.9GW to 2.4-3.5GW per year on average.
- The electricity network will need to substantially increase its connection capacity from 2027.

"This pipeline analysis highlights that Scotland's onshore wind capacity is expected to nearly double by 2030. The Scottish Onshore Wind Sector Deal outlines an ambitious pathway to stimulating supply chain growth and securing the full potential of onshore wind through our transition to a clean energy economy. Scottish Renewables is working hard to support the supply chain and build investor confidence by providing greater visibility of pipeline opportunities in the years ahead."

Morag Watson, Director of Onshore, Scottish Renewables

> Scan to find out more and read the latest pipeline analysis:



# **SCOTLAND OFFSHORE WIND PIPELINE ANALYSIS**

Scottish Renewables commissioned BVG Associates (BVGA) to undertake an analysis of Scotland's offshore wind pipeline which reiterates how Scottish projects will play a pivotal role in supporting the UK and Scottish government's climate ambitions.

The analysis underlines the enormous opportunity these projects could offer supply chain businesses across the country.

The analysis reflects the current status of the offshore wind industry mapping out scenarios for when projects are expected to be consented and deployed. To meet their net-zero targets the report highlights that both the UK and Scottish governments need to urgently deliver infrastructure investment, an appropriate policy framework and support the growth of the supply chain. The analysis has identified the size of the supply chain opportunity and how much infrastructure, including

#### Figure 1: Summary of Scottish offshore wind pipeline opportunities

#### Summary

Between 2025 and 2040, the current Scottish offshore wind pipeline will currently provide:

- Almost 43 GW of new offshore wind capacity
- Around 2,900 turbines:
  - 1,400 with fixed foundations, and
  - 1,500 with floating foundations
- 11,600 km of transmission cable:
- 8,600 km of HVAC, and
- 3.000 km of HVDC.
- 12,600 km of array cable.
- 89 offshore substations (80 HVAC and 9 HVDC)

"This pipeline analysis underlines the potentially huge opportunity that awaits the Scottish supply chain as offshore wind projects move toward construction. By providing visibility into timelines and highlighting the scale of Scotland's offshore wind potential, this analysis should help organisations as they look to scale-up operations and make strategic investments which will help capture these growing market opportunities."

Colin Palmer, Director of Offshore, Scottish Renewables

port capacity, the offshore wind sector will need to reach its full potential. The analysis also highlights what the demands of the pipeline will be on key supply chain areas including cables and turbines, and the opportunities the pipeline provides in terms of jobs. Grid connection and supply chain readiness are two key enablers that could impact how fast project build-out will occur.

Scottish Renewables will use this analysis to help guide engagement with key stakeholders, such as local communities and the fishing industry, and inform policy and planning discussions.

#### Other notable numbers

- 8,700 blades totalling just over 1,000 km end to end (the distance by road between Cardiff and Wick) [a]
- Almost three million tonnes of steel for towers [b]
- Over three million tonnes of steel for fixed foundations (including transition pieces (TPs)) [c]
- Almost eight million tonnes of steel for floating foundations + TPs [d]
- Over 5,700 km of anchor chains roughly the distance from Gibraltar to Moscow - with a total mass of almost five million tonnes.

- [a] 116 m per blade
- [b] 800 tonnes per tower (fixed), 1,200 tonnes per tower (floating)
- [e] Jacket with 15 MW turbine in 60 m depth
- [d] Semi-sub (steel) with 15 MW turbine
- [e] Catenary style steel chains in 400 m depth

# **INTRODUCING THE CLEAN ENERGY CLUSTER**

### Scotland's offshore wind supply chain cluster



The Clean Energy Cluster is the national voice of Scotland's offshore wind supply chain.

Behind every industry success story is a strong, secure and competitive supply chain of diverse businesses. Together, they provide the services, skills, products and innovations that create skilled jobs and drive economic growth.

In offshore wind, suppliers delivering work packages as varied as munitions clearing, robotics and subsea inspection to mooring design, port services and clothing supply demonstrate remarkable entrepreneurial spirit, and they are an essential component of the green energy revolution. From ports and large-scale contractors to the complex ecosystem of small and medium enterprises, The Clean Energy Cluster promotes, connects and guides the many suppliers across the country looking to succeed in the sector.

As a key point of contact for businesses with ambitious offshore wind growth plans, the cluster will to enhance business development opportunities, foster innovation, facilitate knowledge transfer, drive skills development and boost the global competitiveness of the Scottish renewable energy supply chain.

Supported by the Scottish Offshore Wind Energy Council and through strong relationships with Scotland's suppliers, enterprise agencies and academic institutions collaboration is placed at the at the core of the cluster.



#### National voice. regional growth

The Clean Energy Cluster brand and name were designed to encapsulate the perspective of the complex and diverse ecosystem of suppliers in Scotland. It is adaptable to support the wide range of companies seeking to harness the opportunities arising from the offshore wind sector. The aim was to make it memorable, distinctive and relevant.

Aligned with key government strategies like the Clean Power 2030 Action Plan, the brand is designed for future growth, enabling cross-sector collaboration and innovation.



**BEBAS (REGULAR)** BEBAS (REGULAR)

#### Sign up on the website



Whether you're a supplier, innovator or aspiring business in the renewable energy sector, The Clean Energy Cluster offers valuable connections, resources and opportunities.



### **OUR MISSION**

To support and supercharge the growth of Scotland's offshore wind supplier network.

### **BECOME A MEMBER**

#### Be part of Scotland's clean energy future and join the cluster today!

Membership: FREE for all organisations working in Scotland's renewable energy industry.

> Amplifying regional strengths, the cluster's membership includes organisations from all corners of the country, from the Borders to the Highlands and Islands.

Since its launch in January 2025, the cluster now has more than 654 members representing 433 organisations:

### **OUR VISION**

To build a sustainable, prosperous and world-class Scottish offshore wind supply chain.

# **DOCUMENT SPONSORS**

Scottish Renewables would like to thank the following organisations for their continued support of the Supply Chain Impact Statement 2024/25.

Our sponsors are committed to strengthening the local supply chain, promoting collaboration and driving innovation. By playing a vital role in enhancing the performance and competitiveness of the renewable energy industry, our sponsors are helping to shape a sustainable future for Scotland.

### **EDF RENEWABLES UK**

EDF Renewables UK operates renewable energy projects across the UK, with an expanding portfolio in onshore and offshore wind, battery storage and solar. In Scotland, a team of more than 230 people is bringing complex projects to fruition across onshore and offshore wind.

Its Scottish portfolio consists of 11 onshore wind farms generating around 530MW of clean power, with a further 2GW in planning and development.

A key project for EDF Renewables UK is its flagship 450MW offshore wind farm, Neart na Gaoithe (NnG), in the Firth of Forth. Local and Scottish businesses, including Briggs Marine, I&H Brown, Port of Dundee and Muir Construction, have played a crucial role throughout the project's development and construction.





At Eyemouth Harbour, the operations and maintenance base for NnG is becoming a hub of activity, with 27 employees - many from the local community - supporting the project.

#### Over its 25-year lifespan, the site will support around 50 high-quality jobs, reinforcing EDF Renewables UK's commitment to long-term investment in the region.

EDF Renewables UK has a track record of working with local suppliers across its projects, creating jobs for local people and boosting local and national supply chains.





benefit funding.

It has also created 866 jobs and contributed £466 million to the Scottish economy. Additionally, the company has awarded £920 million in contracts to Scottish businesses, strengthening local supply chains.

Through ongoing collaboration with communities and stakeholders. Fred. Olsen Renewables continues to have a meaningful impact on Scotland's renewable energy landscape.

### **X** Fred. Olsen Renewables

### **OCEAN WINDS**

Ocean Winds is driving significant investment, industrial capability and economic development with the delivery and operation of projects like the Moray East and Moray West offshore wind farms. Forecasts suggest that over its lifetime, Moray West will directly contribute £800 million of expenditure to the Scottish economy.

More than 64 direct contracts have been awarded within Scotland during the construction of Moray West, with many more awarded indirectly through its supply chains.





Its next project in the pipeline, Caledonia, has committed £46 million of supply chain-enabling investment to be directed towards building critical competencies that are competitive and supported by the necessary skills.

Ocean Winds plays a proactive role in supply chain initiatives such as the Launch Academy, which is supporting 10 Scottish companies in business growth, and the Fit 4 Offshore programme.



### SCOTTISH ENTERPRISE

Scottish Enterprise, Scotland's national economic development agency, is supporting businesses to innovate and scale to help transform the Scottish economy.

The energy transition will be the single most significant growth opportunity across Scotland's manufacturing supply chain for decades to come, and Scottish Enterprise is working with companies to help them be part of this.

Growth in offshore wind, clean heat, hydrogen and tidal energy could double the number of companies operating across the energy sectors, bringing 40,000 new jobs and an additional £1.5 billion of exports annually.



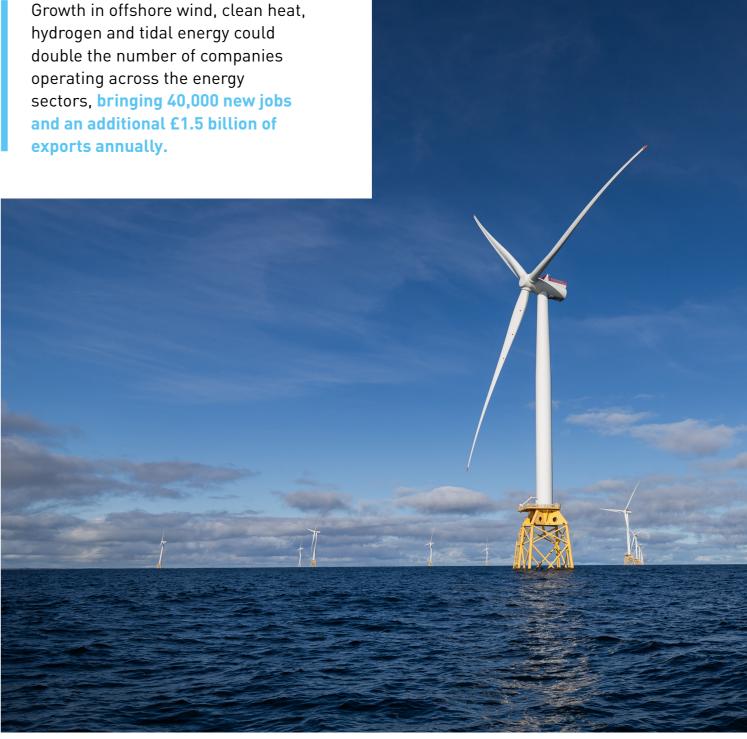
ORE Catapult champions the industry's development as the UK's largest clean growth opportunity. With unique facilities around the UK, incorporating worldleading research and engineering capabilities, ORE Catapult brings together industry and academia to drive technology innovation and commercialisation, and to grow the capability and competitiveness of the UK supply chain.

ORE Catapult supports supply chain activities across Scotland through support programmes such as Fit 4 Offshore Renewables and Launch Academy. It also offers access to the Levenmouth Demonstration Turbine, one of its most important research and development assets. This provides unique opportunities for research and innovation in offshore technologies. Located at Energy Park Fife, it is the world's most advanced open-access offshore wind

turbine for research, boosting the region's profile as a centre for energy and related industries, and supporting efforts to engage local people in STEM career paths.

Following access to the Levenmouth Demonstration Turbine, an SME secured a joint venture deal with a wind farm developer and contracts to supply its wind farms in the United States.





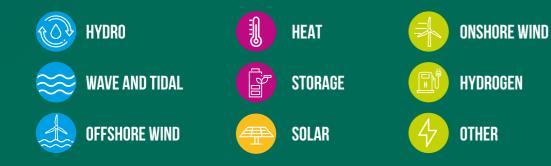
Scottish Enterprise is uniquely placed to help businesses focus on these high-growth opportunities. Through a combination of support services and advice, access to funding and investment and industry networks at home and overseas, its team of experts help companies diversify and grow to take advantage of these opportunities.



# SUPPLIER CASE STUDIES

The following case studies showcase some of the talented and entrepreneurial suppliers who are bringing their expertise to Scotland's renewable energy market.

Scotland's green energy suppliers provide their services to renewable energy technologies including:





### 1STOPWIND 🄙 ቶ

### A catalogue of circular economy capability

1StopWind delivers blade repair, maintenance and recycling services that extend the lifespan of wind turbines and minimise downtime by using advanced techniques such as rope access, platform solutions and drone inspections.

Supporting long-term sustainability, the company is expanding its role in the wind sector's circular economy, offering solutions for blade decommissioning, removal and material recovery. By transforming retired turbine blades into reusable components, such as blade protection enclosures called 'cowling' which can be made with up to 62% recycled material, the company reduces waste and lessens reliance on virgin materials.

Operating across the UK, Europe and North America, 1StopWind collaborates with manufacturers, developers and operators to maintain blade integrity and enhance efficiency.

Launching soon, its innovative new Blade Component Catalogue will showcase reprocessed materials for reuse and will help to shape a greener, more circular future for the industry.

"For the first time in the industry, the 1StopWind wind turbine blade cowling is manufactured using 62% recycled glass, reinforced plastic and materials from decommissioned turbine blades. This represents a true circular economy solution, repurposing end-of-life blades into durable, high-performance blade components for future maintenance repair and upgrades all while avoiding landfill waste"

Thomas Evans, Technical Manager – Blades, 1StopWind



#### Transitioning heat one home at a time

Aira is a fast-growing clean energy tech company providing an all-inclusive approach to heat pump installation.

In May 2024, Aira opened a new hub in Stirling creating 30 highly skilled clean energy jobs in the local area. The 14,494 sg ft hub serves as the first Scotland-based Aira Academy dedicated to delivering high-quality heat pump training for sales teams, designers, installers and electricians.

Aira has been collaborating with local businesses to expand its capacity, with plans to recruit apprentices in 2025 and create 300 new green heat jobs over the next three years.



While rising consumer demand is promising, we'll continue to lobby for improved grant and loan access to drive broader adoption across the country."

Nicola Mahmood. Head of Region (Scotland), Aira Home



#### Testing tomorrow's technology today

Apollo delivers project development support, technical analysis, design and consulting services for offshore structures, marine systems, moorings and subsea cables.



"Our work this year demonstrates Apollo's commitment to tackling the industry's biggest challenges with practical, innovative solutions. From advancing floating offshore wind to pioneering marine EV charging, we're proud to drive progress that supports Scotland's net-zero ambitions and strengthens global renewable energy capabilities".

With its activity focused on working closely with industry partners, Apollo's 2024 highlights include:

- Delivering reports for ORE Catapult on gigawattscale floating offshore wind farms, identifying bottlenecks and solutions for transportation, installation and tow-to-port operations.
- Trialling the PALM Quick Connection System for dynamic cables to deliver more than 20 successful disconnect and reconnect operations in Scapa Flow, with funding from Wave Energy Scotland.
- Testing a pioneering marine electric vehicle (EV) offshore charging system that can service operating vehicles and crew transfer vessels. Funded by Innovate UK, the project was a collaborative exercise with EMEC and Leask Marine and was covered in the media by BBC Orkney.
- Being shortlisted in three categories at Scottish Renewables' Green Energy Supply Chain Awards.
- Expanding its operations by opening new premises in Edinburgh and Aberdeen, increasing activity in Wales and southwest England and reaching international markets with enquiries from Japan, India and the USA

### BLACK BAWKS DATA SCIENCE 😂 📥 🐴

#### The science of seabirds

Black Bawks Data Science specialises in ecological data science to support renewable energy projects.

Playing a key role in the Caledonia offshore wind farm, the company delivered model-based density and abundance estimates for key seabird species. Data from 24 monthly digital aerial surveys provided critical insights into bird populations within the wind farm and its surrounding area. The information gathered informed the environmental impact assessment, guiding collision risk modelling and seabird displacement analysis. Leveraging data collected from the adjacent Moray East wind farm, the Black Bawks team applied a machine learning approach to assess potential displacement impacts.

### BRIGGS MARINE 🔞 😂 🐴

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#### Energising the islands through specialist subsea operations

Family-owned Briggs Marine has more than 50 years of experience providing marine and environmental services. The company specialises in port and marine operations, subsea and offshore wind support, as well as vessel charter.

Based in Burntisland, with offices in Liverpool, Montrose and Aberdeen, Briggs employs approximately 750 people in the UK. The company has supported many aspects of offshore wind for over a decade, providing a range of marine services across the construction and operations and maintenance phases.

Briggs began working with EDF Renewables UK and ESB on the Neart na Gaoithe (NnG) offshore wind farm in 2019.

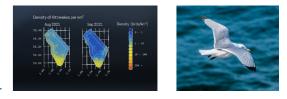
> "Briggs Marine is dedicated to supporting the renewable energy sector with our extensive range of marine services. Our expertise and commitment to excellence ensure reliable operations and the protection of the environments we work in."

Rob Baker,



"Data has the power to change how we interact with the natural world; we can explore its complexities and nuances then make changes for the better. At Black Bawks Data Science we excel in bridging the gaps between data and decision making in order to build a more sustainable planet for our children and grandchildren."

Dr Grant Humphries, Director, Black Bawks Data Science

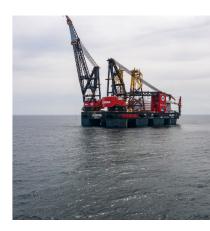


Since then, it has provided crew transfer vessels for the project and recently signed a three-year contract to continue supporting the operational phase of NnG.

At the end of 2024, Briggs announced a collaboration with Global Energy Group to fabricate two 20-metre, 80-tonne, subsea cable storage baskets. The baskets provide critical subsea cable storage for Scottish and Southern Electricity Networks (SSEN), ensuring rapid response capability for network repairs or replacements. Further success has seen Briggs install and energise new subsea electricity cables for SSEN, between Orkney mainland and Shapinsay and between Islay and Jura, ensuring a reliable electricity supply to the islands.

Recognising its focus on sustainability, Briggs was presented with an award from SSEN for its commitment to protecting the ecologically important 'machair' vegetation on the Isle of Mull.







### Shaping the global wind industry with strategic expertise

BVG Associates (BVGA) provides strategy consulting, helping governments, suppliers and developers to innovate and solve problems in the wind energy sector. More than half of BVGA's work is based outside the UK, applying its expertise to offshore wind growth initiatives in Australia, Azerbaijan, Philippines, Romania, the USA and Vietnam.

BVGA also works closer to home, having played an integral part in the development of the Scottish Onshore Wind Sector Deal, which outlines a set of commitments from the Scottish Government and the wind industry to deliver 20GW of operational onshore wind by 2030 by 2030.

The growing business expanded its Scottish team by 60% in 2024 and has successfully delivered work for Scottish clients including Energy Transition Zone, Crown Estate Scotland, ORE Catapult, Scottish Enterprise, Scottish National Investment Bank and Scottish Renewables. By sharing its economic expertise, BVGA allows project developers to highlight the positive economic impact of wind projects and has helped many Scottish suppliers identify and pursue wind market opportunities at home and abroad.

"I really value BVGA's focus on enabling change in the global wind industry and seeing Scotland export its expertise to emerging wind markets. It is a great source of pride and satisfaction for us. Working with inspiring colleagues, clients and partners who share this vision provides a great sense of camaraderie and purpose."

> Neil Douglas, Director, BVG Associates



### CAMMO SOLAR SOLUTIONS 🕀

#### Start-up shines a light on solar

Founded in 2024, Edinburgh-based Cammo Solar Solutions focuses on monitoring solar photovoltaic (PV) installations for new homes and businesses.

The start-up was established when its founder began assisting homeowners facing challenges with solar PV systems. From troubleshooting to advising on exporting energy and understanding the environmental benefits, the goal was to make solar power simple and effective for everyone. The business tailors its services to maximise energy savings and efficiency for each client. Its customerfirst philosophy is focused on making green energy both accessible and affordable.

Cammo Solar Solutions has already secured more than 31 customers with only a year under its belt and is currently engaging with individuals, businesses, factoring companies and housing associations to promote cleaner, greener energy solutions and provide services to support them.



### ECO HIRE 🔞 🔿

### Transforming site welfare with solar power

ECO Hire was established to transform site welfare. Through significant investment in technology, its range of solar welfare cabins reduce carbon emissions and provide the construction sector with an option to run site offices and welfare facilities on green energy.

Since July 2024, ECO Hire has provided RJ MacLeod with four generator-free, solar-only welfare cabins at Pencloe onshore wind farm. The cabins feature an extendable solar roof and vertical wall-mounted





solar panels, designed to capture low winter light and maximise energy gain all year round.

Between September and February 2025, the cabins at Pencloe wind farm saved more than 8,171 litres of fuel, avoiding 25.8 tonnes of CO2 emissions while delivering a cost saving of over £17,500. It is forecast that over the lifetime of the project, 100 tonnes of CO2 emissions will have been saved from entering the atmosphere. This is just one example from more than 50 ECO Hire projects which are expected to save 700 tonnes of CO2 emissions this year compared with traditional welfare solutions.

ECO Hire was recognised for its commitment to sustainable solutions at The Scottish Green Energy Supply Chain Awards 2024, with the company winning the Sustainable Supplier Award.









Cutting-edge blade protection

Edinburgh-based Edge Solutions provides blade protection solutions for onshore and offshore wind farms.

As wind turbine blades get longer the speed at which the blades rotate increases, resulting in blade erosion, which reduces performance and increases turbine downtime. To combat this growing challenge, Edge Solutions has developed Armour Edge, a patented custom-fitted modular shield. The system uses a bespoke thermoplastic material to repair and protect the leading edge of a wind turbine blade, which can be fitted quickly and lasts the lifetime of the turbine.

Launched commercially in 2020, the company's order book is growing across the globe, with major success in the USA and the recent completion of its first Scottish



"Early years blade erosion is a growing challenge which is driving new approaches - including inwarranty repairs and pre-installed blade protection."

David Urch, Managing Director, Edge Solutions

offshore wind installation. Customers include RWE and the German offshore wind farm, Riffgat.

Driven by continued growth, the company recently opened a new production and training base in Edinburgh and is working with maintenance providers to train technicians to install the Armour Edge system.

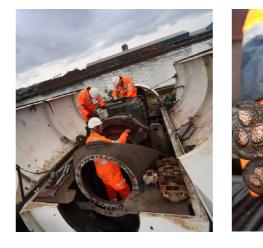
Taking things to the next level, Edge Solutions is engaging with original equipment manufacturers to explore how factory fitting Armour Edge could change the economics and operations and maintenance regimes of future wind farms.



#### Circular economy centre - where old becomes new

Building on its experience supporting the recycling, reuse and repurposing of materials from the construction, automotive and transport sectors, EMR Renewables has established a decommissioning hub for wind turbines in Glasgow.

The state-of-the-art Wind Turbine Processing Centre takes a circular economy approach to handling the growing number of decommissioned renewable energy





EMTEC ENERGY 🕋 😭

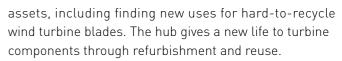


#### Solar solutions for Scotch

For more than 13 years, Emtec Energy has been a trusted solar and battery storage solution provider across the UK.

In 2024, Emtec Energy and business partner SAS Energy, EDF Renewables UK's commercial and industrial solar business, collaborated on a solar project for The Macallan Estate near Craigellachie in Moray. The development started construction in September last year and is due for completion in early 2025.

Looking to the future, Emtec Energy remains focused on empowering businesses across the manufacturing, commercial and public sectors to make impactful energy transitions, meeting today's demands while planning for a more sustainable tomorrow.



The centre is also home to the Re-Wind project, which is pioneering dismantling and recovery methods to secure rare earth elements from magnets contained in directdrive offshore wind turbines.

In onshore wind, EMR Renewables offers a decommissioning service and supports other renewable energy technologies, such as solar and battery energy storage systems.

"EMR Renewables' new Wind Turbine Processing Centre is bringing together some of the most exciting research when it comes to reusing or recycling wind turbines, ensuring this green technology is even more sustainable."

Dr Charlotte Stamper, Strategic Partnerships Manager, EMR Renewables





### EUROPEAN MARINE ENERGY CENTRE 📚 📥 📴 🕮

#### Technology testbed

The European Marine Energy Centre (EMEC) provides ocean energy technologies with testing and demonstration facilities. Set up in Orkney in 2003, more marine energy devices have been tested at EMEC than at any other site in the world.

Today, the centre is pioneering developments in green hydrogen for synthetic fuels, island decarbonisation and leading innovation projects to explore offshore and floating wind technology.

Operating as a plug-and-play facility, EMEC facilitates a smoother path for companies looking to commercialise their products and has fostered a cluster of activity in Orkney that enables other companies to develop and thrive.

Harnessing the abundant resources available in the Highlands and Islands, EMEC is supporting the transition to a clean energy future and creating economic benefits in peripheral coastal communities. "EMEC was set up in 2003 to kick start an ocean energy sector in the UK and boost economic development in the Highlands and Islands. The activity that has taken place in Orkney over the last 20 years due to the presence of EMEC has been a catalyst for economic development, creating jobs and a world-leading supply chain now exporting skills and knowledge around the globe."

Eileen Linklater, Corporate Affairs Director, European Marine Energy Centre



### Driving decision-making in mooring design

First Marine Solutions (FMS) specialises in mooring solutions for floating offshore wind foundations. The company offers a full service, from system design and analysis to equipment supply and management, through to all aspects of the installation and operations.

FMS recently completed a project for Flotation Energy to explore and understand the mooring requirements for the Green Volt floating offshore wind farm. FMS compared several types of floating structures and used metocean data from previous work at the project's location to provide results from day one. The study delivered an overview of mooring and anchoring technology, ancillary systems and operational requirements guiding the developer's decision making for the project design.

### GCE 🔙 🕾 🐴

#### Resilience for renewable energy

GCE delivers specialised grouting, construction and engineering solutions for onshore and offshore wind farm projects.

Recent opportunities from key onshore wind projects in Scotland led the growing company to establish a new operations base near Edinburgh. Building on this success, GCE has delivered project management and consulting activities for an offshore wind farm project in the USA.

> "At GCE we're proud to support the renewable energy transition with innovative solutions that prioritise sustainability and durability. From our ultra high strength grouting, low-carbon grouting innovation and advanced waterproofing to corrosion protection, we're not only building for today but securing the resilience of tomorrow's energy infrastructure."

> > Pauric Whelan, Director, GCE

"Since the inception of our renewable energy consultancy in 2020, we have been consistently developing mooring and survey capabilities in the offshore energy industry to provide the floating offshore wind market with a comprehensive consultancy service designed to drive forward landmark projects."

> Steven Brown, Managing Director, First Marine Solutions

The company places a focus on sustainability and innovation through investment in the development of low-carbon grouting. GCE has also established a new partnership with Bolt Armour to advance corrosion protection and marine growth prevention, which is designed to ensure the resilience and longevity of offshore and onshore assets.



### GQS 🄙 🕋 🐴

#### Mitigating global supply chain risk

GQS is a worldwide provider of inspection, auditing and quality assurance services to the renewable energy industry.

The company has an office in Aberdeen as well as a network of international offices in Senegal, Singapore, Malaysia, Vietnam, India, Taiwan, China and Australia.

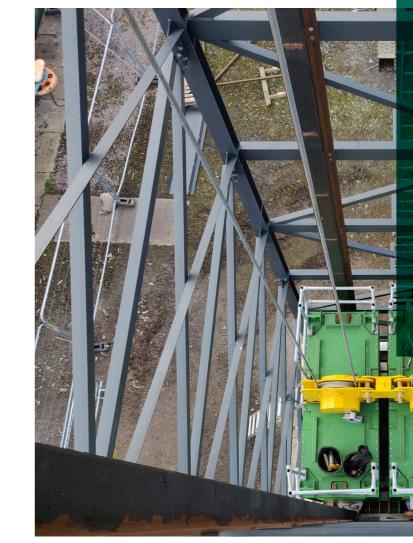
Its global reach has allowed GQS to provide support to several major renewable energy projects around the world in the past year. The organisation's highlights from 2024 include:

- Managing all worldwide inspections for the Hydrogen Refueller project, operated by Woodside Energy Technologies in Western Australia.
- Providing full onshore and offshore inspection services for the Hai Long offshore wind farm in Taiwan.
- Delivering supervision and technical support for the construction of Tokyo's first cable-laying vessel which is set to be used for the assembly of Japanese offshore wind farm projects.



"GQS has been providing services to the renewable energy sector for several years and we continue to build our expertise to meet the needs of clients operating in the existing and emerging renewable energy sectors. We are successfully delivering on major, multi-million-pound projects around the world, helping our clients meet their objectives efficiently, safely, on-time and within budget."





### GRAVITRICITY

### From past to present: developing the energy storage solutions of tomorrow

Edinburgh-based Gravitricity utilises the power of underground shafts to deliver long-life, grid-scale energy storage technology.

In 2024, the company made significant progress towards commercialising its technologies. It announced a collaboration with mine hoist developer ABB which will see both companies investigate how gravity energy storage technology can help mining companies extend the life of their mine shafts.

Gravitricity will also work with Baker Hughes to accelerate the development and commercialisation of its large-scale energy storage projects.

The company's research and development activities have also progressed with the evolution of a new gravitational energy storage system focused on longer"We were delighted to announce the signing of a memorandum of understanding with leading energy technology company Baker Hughes earlier this year. Baker Hughes bring the capability to provide technical expertise, commercial development, equipment and services that will enable the two companies to identify cost-effective and timely solutions to enhance, commercialise, construct and operate Gravitricity's underground energy storage solutions."

Martin Wright, Executive Chairman, Gravitricity

duration markets. The system brings significant environmental, social and governance benefits by using repurposed mine hoists.

From gravity to hydrogen, Gravitricity continues to develop its H2FlexiStore underground hydrogen storage solution. Working with National Gas on an Ofgem funded project, the company explored the feasibility of using the technology to provide system flexibility in the gas network as it transitions to hydrogen. And it doesn't stop there - the storage specialist is now looking to further advance the H2FlexiStore by deploying a demonstrator project.



### HAVENTUS 📥

Preparing to open Scotland's largest dedicated offshore wind facility

Development of Haventus' Ardersier Energy Transition Facility is progressing strongly, with the 450-acre offshore wind deployment site aiming to open during the second half of 2025.

Designed specifically for offshore renewable energy developers and the supply chain, Ardersier Energy Transition Facility provides all round capability, from marshalling and storage to largescale assembly and manufacturing. Situated on the Moray Firth, the site is ideally located to serve fixed and floating offshore wind projects, notably the ScotWind and INTOG developments.

The redevelopment is supported by a £300 million equity commitment from Quantum Capital Group and a £100 million joint credit facility from The Scottish National Investment Bank and the National Wealth Fund.







### LOCOGEN 🚗 🛧 📴 🗊

Bespoke consultancy support for renewable energy generation

Locogen provides expertise across the renewable energy project lifecycle, helping its clients to design, develop, build and operate projects. It has experience in onshore wind, ground mounted solar, energy storage and green hydrogen technologies.

Locogen has assisted many projects throughout 2024, including helping Ripple Energy purchase and build the Kirk Hill wind farm, the largest shared ownership wind farm in Scotland. The project is now operational with more than 5,600 members sharing in its ownership.

The business also worked for its clients and partners to secure a grid connection, planning consent and Contracts for Difference (CfD) for



the 85MW Benthead solar farm and co-located battery storage - the largest to date in Scotland. Through detailed site planning, Locogen mitigated complex peat risk with the final design providing a valuable roadmap for future large solar projects in Scotland.

Another highlight was securing funding for Arbikie Distillery to become the world's first distillery powered by green hydrogen. Locogen led the project through feasibility, consenting, design and construction.

> "We are creative and passionately impactful, delivering a future where renewable energy is maximised through innovative solutions. We are driven by a purpose to lead the way in the renewable energy transition, offering assurance, trust and tailored expertise to help our clients achieve their objectives and make a positive environmental impact."

> > Andy Lyle, CEO, Locogen



### MONTROSE PORT AUTHORITY 🎄

#### Pioneering shore power for offshore energy vessels

In April 2024, Montrose Port Authority launched Plug Montrose, Scotland's first large-scale shore power facility, which provides 100% renewable electricity to offshore energy vessels through the port's electricity grid.

The £1 million self-funded initiative, developed through a joint venture partnership with Norwegian shore power specialist Plug, enables berthed vessels to switch from diesel engines to a cleaner energy source for onboard functions.



reducing our environmental footprint but also positioning Montrose Port operations. With Plug Montrose now live and our ability to track emission reduction through Plug's bespoke administration system, we are excited about the potential of expanding this facility to all berths at our port."

By allowing vessels to power essential functions such as lighting and heating from the shore, Plug Montrose reduces fuel consumption, noise pollution and the port authority's scope three emissions, which primarily come from visiting vessels.

Early results show more than 200 tonnes of CO2 savings, with a first-year target of 400 tonnes. The facility delivers multiple benefits including cleaner air around the port for the local community, reduced operating costs for shipowners and a safer working environment for crew members, who can now perform maintenance tasks more efficiently without ear defenders.

Montrose Port plans to expand the service across all berths and hopes to set the precedent for greener port operations in the UK.

### MUIR CONSTRUCTION 🔬 🚗 🐴 🕕

#### Laying the foundations for green energy infrastructure

Over the past two years, family-run Muir Construction has spearheaded the delivery of several renewable energy projects across Scotland. These projects include:

- Construction of Scotland's first district heat network at Queen's Quay in Glasgow, which uses a water-source heat pump to draw energy from the River Clyde.
- Construction of EDF Renewable UK's Neart Na Gaoithe offshore wind farm's operations and maintenance (O&M) base in Eyemouth.
- Construction of Ocean Winds' O&M base in Fraserburgh which can handle up to 100 vessel movements each week.

Based in Inverkeithing, the business is focused on adding value to the local economy through local employment and building valuable supply chains in Scotland.

To drive its own decarbonisation efforts, Muir Construction has invested in generating certified aggregates at its Rosyth recycling depot, installing 400 solar panels at its head office and developing an innovative carbon calculator tool.



#### Boosting jobs, training and local supply chain

For 30 years, Nordex UK & Ireland has been providing turbines and services for renewable energy projects worldwide. With more than 100 employees based in Scotland, Nordex is committed to growing its workforce by at least 10% each year over the next five years, focusing on roles in servicing, maintenance and supply.

In 2025, the company will launch a new apprenticeship programme to create more opportunities for young people and build careers in renewable energy.

In the past year, Nordex has worked with more than 20 Scottish suppliers and 14 local contractors, strengthening regional businesses in areas such as haulage, plant hire and crane installation. This helps ensure that Scotland's wind sector benefits the local economy and provides more opportunities for Scottish companies to be part of the green energy movement.



Building on this, Muir Construction also invested £500,000 into Celtic Renewables' research and development facility where patented technology is used to convert low-value byproducts, waste and residue into valuable, green chemicals.



"Going forward, we are excited to continue to build upon our relationships with both new and existing clients in the renewable energy sector and continue to lead the construction industry towards a sustainable future."

> David Fairweather. Business Development Director, Muir Construction

To further support skills development, Nordex will soon open a new training centre in Scotland for onshore wind. This centre will offer hands-on courses, advanced equipment and internationally recognised certifications, preparing the next generation of workers for careers in renewable energy. Through these ongoing efforts, Nordex is ensuring that local communities and businesses play a vital role in Scotland's renewable energy future.





### Safely lifting offshore wind to new heights

Fife-based Pict Offshore develops, delivers and supports innovative access and lifting solutions that contribute to the growth and safety of offshore wind.

Pict's first product, Get-Up-Safe (GUS), is an active heave-compensated personnel lifting solution designed to ensure safer and more reliable transfers of technicians between crew transfer vessels (CTV) and offshore turbine foundation platforms. Using sensors to track vessel deck motion, the GUS system automatically adjusts the line position to safeguard technicians during transfer, even if the vessel deck moves suddenly.

In 2021, GUS was selected for Ørsted's Hornsea 2 offshore wind farm, replacing traditional access solutions and eliminating the need for boat landings and access ladders on all 165 wind turbine foundations. By June 2024, the system had facilitated more than 10,000 safe technician transfers. "We're very proud of the way Pict has met the challenges of developing and implementing an entirely new type of personnel access at the world's largest offshore wind farm. The deployment of the GUS systems enhances the safety and flexibility of offshore wind operations, and the need for this will grow as wind farms go further offshore and into harsher sea-state environments."

HB M10

Philip Taylor, Managing Director, Pict Offshore

Crossing the Atlantic, the GUS system was deployed on three of the first commercial-scale wind farms in the USA: Southfork, Revolution and Sunrise. All three projects have now fully removed boat landings from foundation design.

Looking ahead, Pict is developing the nextgeneration GUS system which incorporates cargolifting functions. In collaboration with monopile specialist Sif, the company is integrating this enhanced system into the new transition pieceless foundation concept 'Skybox', offering further cost savings for offshore wind projects.



### Charging ahead with battery energy system storage solutions

Renewable energy activity has seen Kintore-based Pier Solutions expand its capabilities, create jobs and invest in training.

In the past two years, the business has successfully supported a variety of technologies including battery energy storage systems (BESS) and hydrogen.

One notable achievement is the urgent replacement of a 1.5MW BESS unit in England. The team handled the



"The growth of renewable energy projects in Scotland is not just about reducing carbon footprints; it's about building a robust supply chain that supports local economies and creates jobs for the future. Investing in renewable energy is an investment in Scotland's future. It empowers local businesses, drives innovation and positions us as leaders in the global energy transition."

> Jordan Ferguson, CEO, Pier Solutions

transport, installation and testing of the system, ensuring minimal disruption to operations and demonstrating its expertise in tackling complex, time-sensitive challenges. Through its projects, Pier Solutions integrates innovation, cutting-edge technology and sustainable practices to enhance safety and efficiency in energy systems.

In 2024, the modular solutions provider further expanded the business by securing strategic partnerships, including the acquisition of V-TES and V-TES Renewables, as well as collaborating with H2scan, which brings the latest generation of hydrogen sensing technology to Europe.

Going forward, Pier Solutions is focused on growing its capabilities in hydrogen, offshore wind and carbon capture technologies.







### QUOCEANT 📚 📥 🚺 😭

#### Connecting the dots for offshore wind, wave and tidal

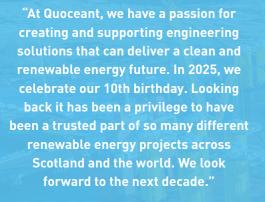
From just outside Edinburgh, Quoceant's engineering consultants provide services in design, analysis, modelling and operations planning. With a focus on fixed and floating offshore wind, wave, tidal and energy storage, Quoceant combines technical expertise with a fresh perspective to tackle complex challenges through innovation, design, analysis and cost-effective implementation.

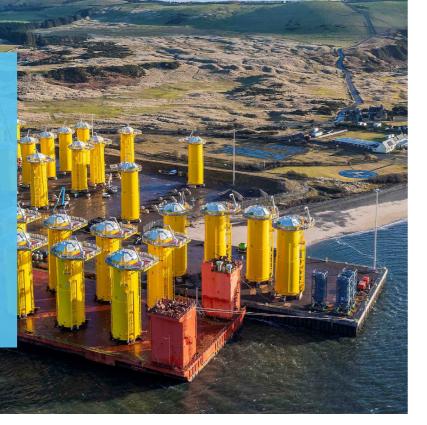
In the past year, Quoceant has supported a diverse range of clients to deliver flagship projects and technology, including:

- Providing engineering support to Ocean Winds' Moray West offshore wind farm
- Helping advance Marine Power Systems' floating wind platform
- Supporting wave developer Carnegie Clean Energy with engineering services
- Providing support to Scottish heat storage innovator SynchroStor.

Quoceant's innovation extends beyond consultancy, with the development of the Q-Connect series of marine guick connectors. Q-Connect connectors provide rapid installation and disconnection to floating offshore wind, wave and tidal technology. The Q-Connect can be used for both mooring and electrical cable connections, supporting operational efficiency.







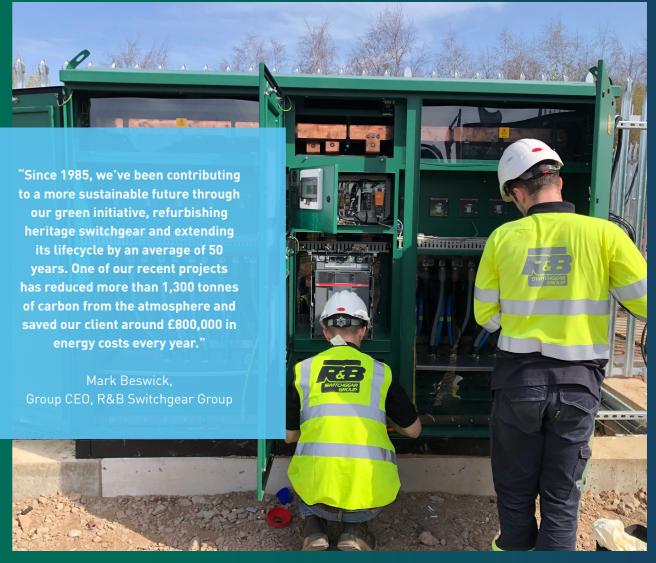
### R&B SWITCHGEAR GROUP 🚗 [

#### Flipping the switch for a transitioning energy system

For four decades, R&B Switchgear Group has been a trusted supplier in designing, manufacturing, installing and maintaining low-voltage (LV) and high-voltage (HV) switchgear.

R&B's advanced electrical solutions are tailored to sustainable power generation and play a vital role in renewable energy projects across the UK, from solar farms and government infrastructure to critical facilities such as His Majesty's prison network. A recent standout project is the company's contribution to a £2.5 billion transformation of a manufacturing facility in southern England into a hub for electric vehicle production.





R&B is also aiding the decarbonisation of the oil and gas sector through its work on innovative technologies such as arc flash protective relays, which help prevent switchgear faults, enhance safety, boost energy efficiency and reduce electrical system downtime.

The company's expertise spans packaged substations, feeder pillars, surge protection, cabling and battery storage infrastructure, with its engineers refurbishing and upgrading systems to maximise efficiency and extend asset lifespan.

Internally, R&B is striving to achieve carbon neutrality by 2040. In partnership with Positive Planet, it has begun implementing a radical reduction plan across its office network and manufacturing facility which includes installing electric charging points and solar panels.

### REAMP CONSULTANCY 🔞 😂 🌜 🌒 Æ 😰 🐴 😰

#### Supporting the journey from feasibility to fruition

Since its inception, ReAmp Consultancy has made significant strides in the renewable energy sector, delivering expert advice to wind, solar, grid and energy storage projects. Specialising in project design, feasibility studies, regulatory compliance and environmental assessments, the company provides tailored technical guidance to renewable energy developers.

ReAmp has delivered several wind farm feasibility studies, consenting strategies and planning services to clients, and recently secured new contracts for wind energy projects in Scotland, England and Wales.

These successes are a result of ReAmp's commitment to quality and its ability to forge strong partnerships with local suppliers. By collaborating closely with stakeholders and local communities, the consultancy enhances project outcomes and minimises environmental impacts.

Innovation is at the heart of ReAmp's work, with the introduction of new products and services to enhance renewable energy project performance, including digital tools to improve project management and streamline client communication.

The company is committed to reducing its own carbon footprint and workforce training remains a focus to ensure the organisation continues to expand and develop a skilled team for the future.

> "ReAmp is a technical consultancy that strives to provide first-in-class consenting, policy and regulatory advice to our clients to enable their projects to be successful."





#### New operations hub strengthens supply chain capability

Based in Glasgow, RES provides comprehensive operations and maintenance (O&M) and asset management services which enhance the performance and longevity of renewable energy assets.

To address O&M challenges and support more than 450MW of projects across 11 sites, RES has established a new, centrally located O&M base in Bellshill, North Lanarkshire. The facility includes a warehouse, workshop and training facilities for its expanded team.

The facility accelerates the availability of components and parts while improving logistical and operational efficiencies across the Scottish supply chain.

"With our new warehouse, workshop and training facility, we're establishing a central logistics and training hub. This facility will enable the efficient procurement of crucial components, from minor parts to larger corrective elements, helping to shorten lead times and drive efficiencies and cost savings across the entire supply chain."

#### Brian McDaid. Head of Operations (Wind), RES



"Our engineering capability, in equipment and people, means we are confident we can deliver on our anywhere in Scotland."

Steve Clark,



### SARENS PSG 🔞 😂 📥 🕂 🗊

#### Heavy handling highs

Sarens PSG specialises in heavy lift operations, offering comprehensive services for the handling, marshalling, assembly, deployment and integration of major components in ports and renewable energy hubs. The company combines engineering, planning, supervision and execution within a single in-house capability.

With headquarters in Moray, an engineering hub and operational base in Aberdeen and support facilities in Glasgow, Sarens PSG operates across Scotland, tackling projects in some of the country's most remote and challenging locations.

As the wind industry continues to scale up, with components becoming heavier and more complex, Sarens PSG provides the resources, equipment and skilled personnel necessary to ensure safe and efficient handling across all foundation, power and turbine technologies.

Across 2023 and 2024, Sarens PSG successfully marshalled 62 monopiles at the Port of Invergordon as principal contractor for Ocean Winds' Moray West offshore wind farm. Each monopile was 10 metres wide, 93 metres long and weighed 2,000 tonnes - the largest monopiles in the UK. Despite the considerable logistical challenges, Sarens PSG delivered with precision and continues to support the wind industry, one heavy lift at a time.



### SLR CONSULTING 🔞 😂 🌗 🖝 😰 🐴 💷

#### Growing expertise through acquisition

In 2024, Wardell Armstrong, ITPEnergised and MacArthur Green joined SLR, strengthening its renewable energy capabilities. These acquisitions have bolstered SLR's expertise by enhancing its support for clients with strategic investment decision-making and across the full lifecycle of renewable energy projects.

SLR has been advising clients for more than 30 years, with expertise in wind, geothermal, solar photovoltaic, biomass, tidal, combined heat and power and energy-from-waste projects.

SLR recently played a key role in the development of Awel y Môr offshore wind farm in Wales, serving as the onshore consenting lead. Through its ongoing partnership with and acquisition of Wardell Armstrong, which delivered the onshore cable design, SLR has brought together significant collective design and environmental assessment expertise.

With consent now granted for Awel y Môr, SLR continues to provide pre-construction environmental support to ensure the project is delivered successfully.



### Scotland to Scandinavia: Scaling up to meet domestic and international demand

Storr Access, a supplier of specialist access solutions for the wind industry, has experienced impressive growth in recent years. The company offers a range of services, including rope access, maintenance, inspection and repair work for both onshore and offshore wind farms, ensuring safe conditions for turbine inspectors.

Over the past few years, Storr Access has expanded its presence across the UK, Germany and the Netherlands.

"Scotland is poised to become a world leader in wind energy, and with our headquarters in the Highlands and a new office soon opening in Esbjerg, I can't think of two better places to be right now!"

> Cailean MacLeod, Managing Director, Storr Access

"Through SLR's acquisition of Wardell Armstrong, ITPEnergised and MacArthur Green, we are excited to offer an even broader range of services to our clients while expanding our global reach and reinforcing our commitment to sustainability. Together, we will continue to support our clients in tackling the critical environmental issues of today and tomorrow."

Richard Jardine, Suropean Energy Sector Lead, SLR Consulting



Its team has grown rapidly, doubling in size as the company successfully supports major contracts for wind turbine maintenance and inspection.

Headquartered in the West Highlands, Storr Access remains dedicated to its roots with the local community making up the majority of its workforce. This strong connection to the Highlands has been a driving force behind its success and continued growth.

As Storr Access expands further, 2025 is set to be its biggest year yet, with the company opening a new branch in Esbjerg, Denmark, to capitalise on the growing global offshore wind market.



### TTI MARINE RENEWABLES 😂 📥

Optimising the mooring design for offshore renewable energy

A specialist in offshore engineering, TTI (Tension Technology International) Marine Renewables leads the design, installation and lifecycle analysis of the mooring systems used for floating offshore wind, wave and tidal energy projects.

In 2024, the company completed a study for ORE Catapult's Floating Offshore Wind Centre of Excellence assessing the risks and failures of the mooring systems used in floating wind turbines.

Mooring lines are used to secure floating offshore wind turbines to the seabed. Failure of these lines can lead to cable damage and cause loss of electricity production. The study explored different mooring types, including chain catenary, semitaut and taut mooring systems, and evaluated different configurations over two different water



#### depths. To optimise the vast number of parameters TTI utilised its multi objective optimisation mooring design tool.

TTI analysed the short-term impacts of mooring failure, such as increased turbine movement and assessed long-term risks, over a 25-year lifespan. Factors such as weather, vessel costs and site distance from port were all considered as part of the analysis.

The findings highlighted that when the consequence(s) of mooring line failure(s) are considered, decisions made to increase the reliability of the mooring system during the design stage can minimise costs over a project's lifecycle. The study emphasised the need to carry out analysis on multiple designs to provide insight and recommendations across the floating offshore wind industry.



"As experienced offshore engineers and mooring system designers, we adopt a comprehensive system engineering approach to analyse the performance and suitability of all constituent parts of the mooring system. This includes detailed aspects from material selection and component characterisation using our own in-house testing facility to fully coupled global analysis of floating structures and arrays via our advanced mooring optimisation tools".

Stephen Banfield Managing Director, Tension Technology International Group





"Our continued success is down to our team's relentless dedication to providing our clients and the offshore energy sector with a high-quality service based on our independent spirit, honesty, integrity and innovative thinking. We are excited by the growing opportunities in Scotland and the role we'll play in helping to deliver on the energy transition."



#### Seabed service success

Aberdeen-based Ternan Energy provides technical services to the offshore renewable energy sector, specialising in geotechnical, geophysical and survey management solutions. Over the past year, the company has grown its team by 20%, promoted staff across disciplines and opened a new office in South Queensferry to support its expanding client base in Central Scotland.

In the past 12 months, Ternan has contributed to more than 100 offshore renewable energy projects, many of which are in UK and Scottish waters. Working with several new clients, the company has seen a 50% increase in revenue from renewable energy projects compared to the previous year.

Recent offshore wind farm project wins include:

- Site investigation survey management support for Caledonia
- Geophysical site investigation package management for Ayre and Bowdun
- Geotechnical foundation engineering for Buchan
- Development of the integrated ground model for Morecambe
- Delivery of the cable burial route assessment for Moray West.

Ternan is also collaborating with the Hartree Centre to develop an AI-driven tool for seabed interpretation and object detection. This technology aims to enhance the speed and accuracy of data analysis, enabling faster and more informed decision-making for the offshore renewable energy sector.



#### Renewable off-grid energy

Think Hire, part of the Think Energy Group, supplies renewable off-grid energy solutions across Scotland, driving sustainability, balancing power demand and supporting the country's net-zero ambitions. With more than 60 years of combined experience within the sector, the company provides a full turnkey service while continuing to develop improved renewable solutions.

Its award-winning flagship product, Solartainer Versatile, is the world's first adaptable solar hybrid generator. It offers a cleaner alternative to traditional generators, with one installation achieving a 77% reduction in fuel consumption at a site in Hunterston - saving more than 35,000 litres of diesel and preventing 96.2 tonnes of CO<sub>2</sub> emissions within six months. In some applications the Solartainer Versatile can reduce fuel use by up to 99% by operating primarily on solar power.



Think Hire's SiteGrid X45 takes renewables storage to the next level with its scalable battery capacity of up to 72kWh and charging speeds that are 150% faster than those of its competitors. Paired with the Solar SkyFrame, an adjustable solar panel that feeds renewable energy directly into the power system, these solutions ensure minimal generator runtime and reduced emissions.

Backing these innovations is the Think Energy Panorama, a machine-learning platform that enables realtime monitoring, data analysis and proactive energy management, optimising asset performance and reducing environmental impact.

"Think Hire is proud to play its part in helping Scotland meet its net-zero goals. We fully understand the pressing need for strict safety protocols, a 24/7 power supply and equipment with a small base footprint. Whatever the challenge, our knowledgeable team identifies the most

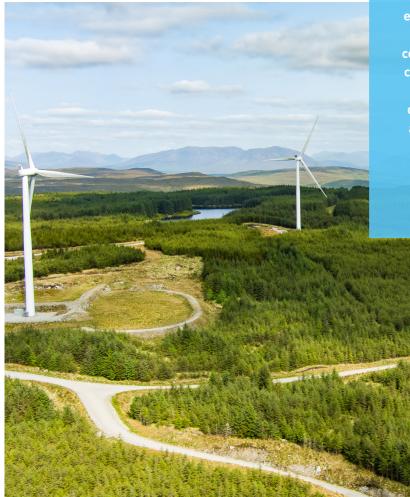
### VENTERRA 🔬 吾 🐴

#### Edinburgh expansion to support Scotland's renewable energy ambitions

In response to the increasing demand for its engineering expertise in the renewable energy sector, Gavin and Doherty Geosolutions, now Venterra, has expanded its operations with the opening of a new base in Edinburgh.

The company's Edinburgh team has doubled in size over the past two years and the new space will serve as a central hub for its Scottish design operation, supporting projects across the UK.

Venterra's work spans onshore wind, offshore wind, battery energy storage, solar, grid



improvement and port and harbour upgrades. The company's specialists support projects from design through to construction and operation.

Recent projects include:

- Civils design for SSE's 29-turbine Yellow River wind farm in Offaly, Ireland
- Detailed civils design for Timahoe solar farm in Kildare, Ireland
- Civils design for SSE's Aberarder wind farm in the Scottish Highlands.

"The new Edinburgh office marks a significant milestone for Venterra as we expand our support for Scotland's renewable energy ambitions. It not only strengthens our presence in Scotland but also allows us to deliver critical engineering solutions across a project's lifecycle, from design through to construction and beyond. We're proud to contribute to the transition to a greener energy future, working closely with our clients to drive sustainable growth across Scotland and the British Isles."

Alastair Lewis, Civil and Ground Engineering Director (Onshore), Venterra

### VI RENEWABLES 🔞 📥 🐴

#### Turbine training with a twist

Vi Renewables was founded to equip the renewable energy industry with the skills and confidence required to tackle the operational challenges of the energy transition – safely, sustainably and successfully.

Drawing on three decades of asset management expertise across thermal, nuclear and renewable energy generation technologies, Vi Renewables delivers bespoke training, technical coaching and innovative learning tools to bridge the gap between people, processes and equipment, optimising operations at every stage of a project.

Proudly rooted in Falkirk, a location tied to past energy revolutions, the Vi Renewables approach goes beyond traditional training, introducing cutting-edge adaptive learning techniques and gamification to improve knowledge and understanding.

To enable wider operational supply chain participation, Vi Renewables has developed several tools, including its Wind Turbine Safety Rule inturbine technical competency training and



assessment, as well as proficiency assessment programmes to ensure continued training and development.

Its latest project in Italy, developing bespoke training for a niche turbine type, demonstrates the team's ability to work across different languages and technologies.

With recent work in the USA, the organisation has ambitious plans to grow across the globe. Looking ahead to 2025, the company has been exploring opportunities in Japan, Brazil and Australia, and has aspirations in Europe as well as the Middle East.

> "Our mission is to help our partners develop the organisational competence and technical confidence required to meet the challenges associated with the energy transition. This extends beyond ensuring that they are equipped to deal with new and emerging technologies and includes a strong focus on managing ageing assets in a safe and sustainable manner so that the renewable energy industry can retain the confidence and trust of all stakeholders and cement its position as a core element of the future energy mix."

> > Lee Callaghan, Founder & CEO, Vi Renewables



#### Decades of decarbonising heat

Vital Energi has been providing innovative solutions for the decarbonisation of heat for more than 20 years.

Scottish operations for the low-carbon heat specialist continue to grow. In June 2024, the company more than doubled its office size to accommodate expanding activity and it welcomed three new apprentices, a graduate and a long-term work placement student.

One notable Scottish project is the Queens Quay heat network in Clydebank, featuring one of the UK's first large-scale water source heat pumps. This groundbreaking system provides low-carbon heating to the surrounding Queens Quay development, showcasing the potential of renewable energy technologies in achieving Scotland's clean energy goals.

Further afield in the Tweed Valley, Vital is delivering a pioneering low-carbon energy centre at Simpson Malt's malting site. This facility integrates state-of-the-art electric and biomass boilers, making use of curtailed wind energy and reducing carbon emissions by 80% per year, cutting 25,000 tonnes of CO2. This project is



enabling sustainable malt barley production, reducing the whisky industry's emissions and helping distillers meet their net-zero targets.

With more than two decades of experience, Vital Energi works across public and private sectors including education, local authorities and healthcare. Offering guidance and support from funding and procurement through to design, build, delivery, operations and maintenance and asset management.

Vital Energi's dedication to decarbonising the built environment was recognised in November 2024 through the Retrofit Accelerator Award at the BE-ST Accelerate to Zero Awards for its work on the Torry Heat Network in Aberdeen.



### Creating a sustainable supply chain for Shetland

Voar is a Shetland-based consultancy, specialising in technical and policy support for renewable energy projects.

For the Arven floating offshore wind project, Voar worked with Ocean Winds to assess Shetland's port infrastructure and local supply chain. They explored how Shetland's businesses could tap into the opportunities presented by the 2.3GW project to ensure the region's infrastructure is fully harnessed.

Shetland has a long track record of supporting large energy projects, and Voar's insights helped map out how local companies can benefit from the offshore wind sector. Its work aims to boost the local economy at every stage of the project, from planning through to construction and operations.

Voar's role in the project draws on local expertise to ensure that the benefits of the project stay within Shetland's communities, supporting long-term, sustainable growth in the area. "We're a Shetland-based consultancy working across the UK, Norway and South America, predominantly on offshore renewable energy, ports, hydrogen and eFuels. Our team has decades of experience in these areas, most recently supporting clients like Ocean Winds, ESB and others with clear, practical advice, focused on maximising local content from the earliest stages of a project."

> Daniel Gear, Ianaging Director, Vo





### WASTECARE 📥 吾

### Waste not, want not: circular solutions across Scotland

WasteCare is a waste management provider specialising in recycling, reusing and repurposing waste from a range of commercial and industrial sectors, including renewable energy.

Operating since 1980, it now manages more than 70,000 tonnes of hazardous waste annually from more than 20,000 businesses across the UK. This includes materials such as waste oil from turbine maintenance, old paint and broken electrical goods.

In 2024, WasteCare strengthened its partnership with EDF Renewables UK to dispose of, recycle and repurpose waste from several of its Scottish wind farms, its service centre in Durham and its offshore sites in North East England. The two companies work closely together to improve waste segregation and optimise the collection process, maximising recycled materials while reducing EDF Renewables UK's carbon footprint.

This ongoing collaboration has allowed WasteCare to extend its operations across more rural areas in Scotland, increasing its waste collection services for local businesses. "Committing and supporting the development of renewable energy technologies means investing in a cleaner, more resilient future which has become the bedrock of our business model. With a little help from the sun, we aim to extract as much energy from the waste we treat, while promoting the waste hierarchy of reduce, reuse, recycle, recover, wherever we can. We continue to invest in innovative recycling and recovery initiatives, whilst reducing our dependence on finite resources, creating new job opportunities in green industries, while contributing to energy security for future generations.

WasteCare is committed to the long-term support of the renewable energy sector, eliminating landfill, while improving our productivity, maximising the recovery of energy and potential value on behalf of our customers'".

> Peter Hunt, Chairman, WasteCare

### WOOD THILSTED 🙏

Laying the foundations for offshore wind design

Wood Thilsted, an engineering consultancy specialising in offshore wind foundation design, played a key role in the development of the Caledonia offshore wind farm, leading the design of the wind turbine foundations from its Edinburgh office.

The team's work included reviewing the geophysical and geotechnical data to produce ground models and geotechnical interpretative reports that laid the foundation for both monopile and jacket foundations, including primary steel, secondary steel and foundation piles. It also advised on predicted scour protection and required protection, corrosion protection requirements, pile-drivability assessments and provided advice



on optimising future geophysical and geotechnical site surveys.

With deep-water conditions, large turbines and challenging ground conditions, this work is critical for assessing the construction, technical and commercial viability of the project.

The company has a historic experience in oil and gas structural design and integrity management, particularly in the North Sea. As the tides change in the energy sector in Scotland, the Wood Thistled team is proud to play its part in transitioning the basin into a green energy powerhouse by designing the next generation of offshore wind projects.

"Working closely with Ocean Winds, Wood Thilsted's Edinburgh team integrated geophysical, geotechnical and metocean assessments with turbine load evaluations and installation risk analysis to determine the optimal foundation solution for the Caledonia project. This project highlights the value of using local Scottish talent for Scottish projects, transferring skills and expertise from oil and gas to offshore wind, and adopting a holistic approach to foundation design, enhancing project delivery."

# THANK YOU



### to this year's Supply Chain Impact Statement case study contributors

























# **INDUSTRY GROUPS**

### THE SCOTTISH OFFSHORE WIND **ENERGY COUNCIL**

The Scottish Offshore Wind Energy Council (SOWEC) is a partnership between the Scottish public sector and the offshore wind industry, co-chaired by Dr Alasdair Allan, Acting Minister for Climate Action, and Claire Mack. Chief Executive of Scottish Renewables.

SOWEC has laid out ambitious goals including delivering 11GW of fixed and floating offshore wind in Scottish waters by 2030 developing a highly skilled and diverse workforce and establishing Scotland as a world-class offshore wind sector.



### **THE STRATEGIC INVESTMENT MODEL**

Scotland's Strategic Investment Model (SIM) is a collaborative initiative between Scottish offshore wind developers, the Scottish Government and its agencies. The SIM's objective is to secure investment in port infrastructure and supply chain to ensure the successful delivery of Scotland's offshore wind pipeline.

Building on work throughout 2023 and 2024 to identify priority supply chain development projects, the SIM launched a Milestone Map in 2025. The Milestone Map is a tool that provides up to the minute data from offshore wind developers involved in the SIM initiative in Scotland. It gives a wealth of data on each of the ScotWind and INTOG projects including project planning milestones.

### THE SCOTTISH OFFSHORE WIND PORTS ALLIANCE

The Scottish Offshore Wind Ports Alliance (SOWPA) is a progressive and collaborative forum of the country's leading port locations and enabling infrastructure facilities, targeted at optimising the opportunities from offshore wind.

SOWPA is actively developing opportunities to enhance regional competitiveness, drive efficiencies and fast-track the required expertise to support the UK's burgeoning offshore wind industry. This will be achieved by optimising largescale operations and addressing common & complex industry challenges through knowledge sharing and collaboration.



0 Ports SOWPA Locations

# Scotwind

Scottish leasing round for offshore wind and floating offshore wind developments.

### **ENTERPRISE AGENCIES**

Scottish Enterprise, Highlands and Islands Enterprise and South of Scotland Enterprise are key development agencies that support businesses to innovate and scale by fostering research and development, international investment and economic development.



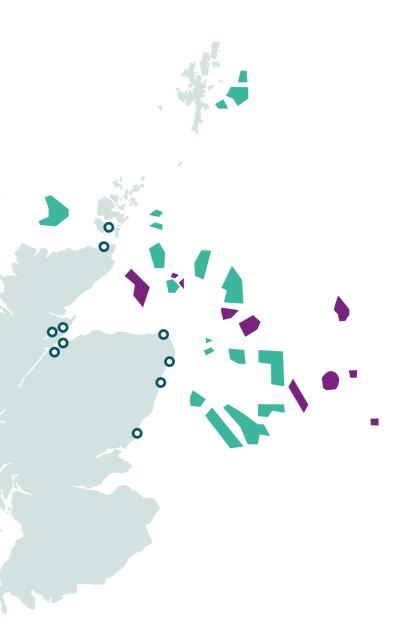
### Scottish Enterprise



scottish **renewables** 

### JOIN SCOTTISH RENEWABLES

Scottish Renewables is the voice of Scotland's renewable energy industry and is committed to realising the full economic, social and environmental benefits of renewable energy for the country. We invite you to join our business network and make your voice heard through the work we do on behalf of our members.



#### INTOG

Innovation and Targeted Oil and Gas leasing round aimed at the electrification of offshore oil and gas infrastructure.

**SCAN FOR MORE INFORMATION** 



# **AWARD WINNING SUPPLIERS**

Scotland's diverse and dynamic supply chain is driving clean energy technology forward and many pioneering organisations have taken home prizes from Scottish Renewables' award shows.

Both The Scottish Green Energy Awards and The Scottish Green Energy Supply Chain Awards celebrate the inspirational organisations, people and projects going above and beyond to drive our industry forward. Below is a list of the winning suppliers from 2024.





Think Hire **BEST INNOVATION AWARD -**SOFTWARE AND SERVICES **Energy Mutual** 

**BEST INNOVATION AWARD** 

- NEW TECHNOLOGY

PRODUCTS

**CARBON REDUCTION** AWARD Montrose Port Authority

CHAMPION OF **RENEWABLES AWARD** 360 Safety & Training

**CONTRIBUTION TO SKILLS** AWARD Aurora Energy Services

**OUTSTANDING SERVICE** AWARD **Royal HaskoningDHV** 



**BEST PRACTICE** 

AWARD





**res** 

**COLLABORATION IN ACTION AWARD** Offshore Wind O&M Partnership

**Montrose Port Authority** 

**DIVERSITY AND CULTURE** AWARD Res



**GREEN ENERGY** SKILLS AWARD **Renewable Parts** 



**GREEN BUSINESS GROWTH AWARD** Cairn Risk



OUTSTANDING SME AWARD Verlume



PETERSON 类

SUSTAINABLE SUPPLIER AWARD



ECO Hire **TECHNOLOGY & BUSINESS INNOVATION AWARD** 

**Peterson Energy Logistics** 

# **UPCOMING EVENTS 2025/26**



# **SCAN FOR MORE INFORMATION** AND TO BOOK NOW







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Scottish Enterprise







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