

## SCOTLAND'S RENEWABLE ENERGY INDUSTRY Supply chain impact statement 2021, a snapshot



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### **DEPLOYMENT OF NET-ZERO ENERGY TECHNOLOGY IS GROWING RAPIDLY ACROSS SCOTLAND**

With the UK's Net-Zero Strategy setting out our decarbonisation vision across power, heat and transport it is no wonder that activity in our local supply chain is beginning to ramp up across the energy transition landscape.

With renewables providing the equivalent of 97.4% of Scotland's electricity consumption, progress has been made but we still have work to do. As more and more green energy projects emerge to combat climate change, companies from the northern islands to the Borders are utilising their expertise, skills and capabilities to grasp the economic and environmental benefits arising from the sustainability pipeline.

This year Scottish Renewables' Supply Chain Impact Statement has been expanded to highlight the impressive suppliers working across all renewable technologies and is testament to the increasing volume of opportunity on the horizon.

Local projects like Moray East Offshore Wind Farm, Scotland's first hydrogen train in Bo'ness, Morven community hydro scheme and the Queens Quay river source heat pump as well as international projects further afield, all require services as diverse as media production, fabrication, safety and survival, remote monitoring and environmental management.

With the support of our headline sponsor SSE Renewables the third edition of this annual publication brings together a snapshot of the expert companies supporting the deployment of green energy technology and highlights the fantastic work being delivered across this growing sector.

This document also features the offshore wind clusters in Scotland and presents recent work delivered by the Offshore Wind Cluster Builder which demonstrates the depth and breadth of the economic impact renewables projects can have on our indigenous supply chain companies.

It is clear there are many dedicated suppliers Scotland can be proud of and despite the world being impacted hugely by the COVID-19 pandemic all of these organisations have managed to 'stay the course', thrive and even grow through this time which evidences the resilience, strength and talent of the businesses and their people.

Claire Mack Chief Executive

Scottish Renewables

# **BEYOND COMPLIANCE** WHY LOCAL SCOTTISH SUPPLY CHAIN CONTENT MAKES GOOD BUSINESS SENSE

There is no question, procuring the sheer volume of products and services required to deliver a renewable energy project is no mean feat.

Identifying suppliers with the capabilities, experience and expertise needed to deliver complex scopes of work relies upon skilled procurement teams who must orchestrate project deliverables like a world class symphony.

This is especially true as our energy mix begins to shift towards clean technology and as we work to deliver our net-zero goals.

Recent policy development has brought the supply chain further into the spotlight across the energy transition landscape.

Support mechanisms, targets and industry recommendations are all driving attention to one imperative point. We must harness the opportunity of local energy transition projects and ensure the associated benefits are realised in Scotland.

Local content, however, offers more to projects than just a tick box compliance exercise on the road to meeting contractual obligations. Working with local supply chains offers a whole host of benefits to projects. Advantages that tend to fly under the radar in local content conversations provide a strong business case for cultivating a homegrown supplier network.

Below we take a look at the benefits of using local companies and unsurprisingly, there is no shortage of reasons to favour

- **Control and Efficiency** Selecting a local supplier provides the opportunity for a closer relationship through frequent enables better collaboration resulting in an all-round
- Partnership Close proximity enables buyers to have an increased understanding of their suppliers. This partnership approach is known to deliver positive project outcomes.

- **Resilience** Awarding work to local suppliers fundamentally offers more flexibility. Suppliers can be more reactive and responsive to unforeseen demands.
- **Sustainability** Reduced logistics and travel minimises a projects environmental impact and carbon footprint. Strong relationships forged in local supply chain networks also allow clients to influence supplier policies from a sustainability perspective.
- **Economic** Local resource is more likely to be employed when using native suppliers. This positively impacts the economy and community. This means the creation of jobs and spending in local shops, cafes, hotels and transport.
- Value Add Using local suppliers can reduce project costs. Whilst it is difficult to compete with contractors in Europe and Asia, local suppliers can add value with their cultural, native knowledge and relationships with other local companies creating a competitive
- Future Proofing Developing local supply chain capabilities not only sets up those suppliers for supporting future work successfully, it creates a
- **Reduced International Risk** Using local suppliers reduces the international risks from possible import tariffs as well as employment challenges, financial exposure, exchange rates and other political and ethical considerations.

It is clear that local sourcing makes good business sense and although this trend is growing across the procurement community there is an increased recognition that as a sector we should be doing more to grow our regional supply chain.

### **OFFSHORE WIND CLUSTER BUILDER SUPPLY CHAIN SURVEY RESULTS OVERVIEW**

### **INTRODUCTION**

Xodus as the Offshore Wind Cluster Builder has undertaken a survey on behalf of Scottish Enterprise and partners to collect information about the capabilities, experience, views and support requirements of the Scottish offshore wind supply chain. The following is a brief overview of the results and insights of the survey which had over 300 respondents.

No. of companies active across the OSW lifecycle

survey respondents 35 Highlands & 179 North East 69 🔴 28 Central Belt South East 15 South West Scottish Borders

Location for

Current experience and commercial track record in offshore wind of companies active in other industries



Current experience and commercial track record in offshore wind of O&G companies relative to their O&G experience/track record



## PROFILE

supply chain profile in Scotland available wind work

## **SUPPLY CHAIN**

The survey indicated the existence of a diverse to undertake offshore

25

services

3



company 37

gital service

provider

38

installation

company

42

No. of respondents per type of organisation

Project Development

Transport and Installation (T&I)

Operation and Maintenance (0&M)

Manufacturing

End of Life (EoL)

Sector Support

Sector Coupling

**ENERGY TRANSITION** 

many players active in offshore wind also being active and involved particularly noticeable for project development, O&M and sector support work in offshore wind. The the know-how and learnings from other sectors can be helpful or offshore wind.

### **EXPORT**

More than a third of respondents are exporting to offshore wind clients overseas. Interestingly, more than half of respondents noted that offshore wind exports is a priority to their business right now and/or in the next two to five years. The profile of most of the survey respondents would seem to indicate that there is potential to further increase this figure and have other Scottish firms exporting their offshore wind capabilities.

Almost another third of respondents are in fact exporting but for clients in other industries – these players may be well placed to leverage their market know-how and international presence to address the needs of an offshore wind market that is increasingly more international.



### Main Barriers to Growth (weighted)

Difficulty

teams

sector pipeline) identifying and engaging with procurement

> Difficulty exporting goods or services

### Main Types of Support Needed (weighted)

- Match-making and networking support for partnership collaborations
- offshore wind support initiatives
- **3** Better understanding of the offshore wind sector (activities, structure and/or technologies)
- **4** Support with market intelligence
- 6 Support with developing and bringing to market innovations specific to offshore wind
- 7 Support with achieving local content
- 8 Support for accessing export markets

Overall, the survey results indicate that most companies with offshore wind experience have successfully secured offshore wind work via a competitive process in the last three years. This is reassuring of both the technical capabilities and commercial competitiveness of Scottish players. Nonetheless, there are more players still trying to secure offshore wind work or trying to get into the offshore wind business.

### Lack of market knowledge (overall

nderstanding of Sco upply chain capabilit

### Lack of knowledge of specific procurement opportunities

Contractual (e.g.warranties, nds, insurance risk. pavment term

### **SUPPLY CHAIN** SUPPORT

Respondents were asked to rank different barriers to growth and support needs in terms of relevance to their business. The main barriers and preferred types of support identified are recurring themes in the offshore wind sector particularly for new entrants and maturing markets, highlighting the importance of ensuring ongoing market visibility, market support, collaboration opportunities and cluster building.

## **DOCUMENT SPONSORS**

## Scottish Renewables thanks the following organisations for their support and sponsorship of this document.

Below they share their methods of supporting the local supply chain and how they are encouraging collaboration, innovation and improved performance across their projects.

### **SSE RENEWABLES**

### Powering scotland and creating jobs

Scotland needs green manufacturing jobs. And the world needs green energy. That's why SSE Renewables is working tirelessly to make it happen.

As a national renewable energy champion and a world leader in offshore wind SSE Renewables is using the strength of its enviable 8GW-plus Scottish offshore construction and development pipeline – from the 1.5GW Seagreen and Seagreen 1A projects to the 4.1GW Berwick Bank and now its 2.6GW ScotWind floating project – to make supply chain investment happen and provide real opportunities for Scottish workers to make the transition from oil and gas to renewables.

One such investment is SSE Renewables' backing for NOW – Nigg Offshore Wind, a new offshore wind turbine tower factory in the Scottish Highlands that is the most significant localisation of offshore wind supply chain manufacturing ever seen in Scotland and the UK. The new state-of-the-art factory will be built by Global Energy Group and Haizea Wind Group at the Port of Nigg near Inverness at a total investment cost of over £110m, backed by £15m in debt funding from SSE Renewables to make it happen.

Once operational in 2023, NOW will employ 400 people on a full-time direct basis manufacturing up to 135 towers each year for the next generation of fixed and floating offshore wind turbines. Its activities will support another 1,800 indirect jobs in the Scottish and UK supply chain.

SSE Renewables has played a central role in securing this world-class development and is the largest single UK backer behind these exciting plans. This investment shows SSE is willing to put its money where its mouth is to support the development of a competitive Scottish manufacturing supply chain and create local jobs. That's powering change.



World-class: SSE CEO Alistair Phillips-Davies at the announcement of NOW – Nigg Offshore Wind with Roy MacGregor, Chair of Global Energy Group, Nicola Sturgeon MSP, First Minister of Scotland, and Tim Cornelius, CEO of Global Energy Group



### **EDF RENEWABLES UK**

EDF Renewables UK is active in Scotland delivering both onshore and offshore wind projects. Through these activities, we are supporting the Scottish supply chain and local communities. This can be illustrated through the Neart na Gaoithe (NnG) project, which we jointly own with ESB.

The NnG offshore wind farm will be located 15.5 km off the Fife coast covering an area of approximately 105 km. With a capacity of 450MW the project entered the onshore construction phase in November 2019 while work offshore got underway in August 2020.

2021 saw a significant boost to the offshore wind industry in Scotland when Harland & Wolff was awarded a contract to carry out the fabrication and load-out of eight of the project's wind turbine generator foundation jackets at its newly acquired Methil facilities in Fife, creating around 290 direct and indirect Scottish jobs.

Muir Construction, based in Fife, has designed and is currently building NnG's three storey, 1,040 square metre main Operations and & Maintenance building and its storage warehouse at Eyemouth Harbour while Moray-based Inland

### **INCH CAPE OFFSHORE LIMITED**

The growth of offshore wind presents an incredible opportunity for Scotland's economy, with billions of pounds to be spent on development and construction over coming years. Inch Cape Offshore Limited alone will invest some £2 billion in Capex between now and commissioning in 2025, and more than £1 billion in Opex over the project's lifetime.

Inch Cape is a ground-breaking project in many ways: we will deploy 'next generation turbines', use the largest monopiles of any UK project to date, and are actively considering the use of hydrogen-fuelled 0&M vessels.

We are also doing things differently when it comes to engaging with the supply chain. We want to harness the competitiveness, commitment and creativity that smaller suppliers can bring to the project, and are committed to opening up as many opportunities as possible to Scottish suppliers. We are actively engaging with the market and working closely with partners such as the enterprise agencies, the Forth & Tay Offshore cluster and local councils. and Coastal has designed, manufactured and is currently installing a new pontoon on the harbour's marine side. The project has also awarded contracts to Ashtead Technology, an Aberdeenshire firm, to support with various work scopes in the Firth of Forth during the construction and installation phase of the project and, since October 2019, Perth-based I & H Brown has been constructing NnG's onshore substation which is set to be completed in 2022. In addition, the project is working with Forth Ports in both the Port of Dundee for marshalling of turbine components, and the Port of Rosyth for storage of spare export cable and to provide secure quayside storage and warehousing for all the spare onshore and offshore export cables and cable accessories required for the operational phase of NnG. In support of the Scottish supply chain, EDF Renewables UK is an active member of the Forth & Tay and Deep Wind Clusters, working collaboratively with the supply chain and other Developers to enhance the opportunities for participation in the offshore wind industry in Scotland.



Likewise, our multi-contracting strategy will see us contract directly for up to 25 principal works contracts, with smaller suppliers able to tender directly for a number of work packages which would normally sit under a major Tier 1 contractor.

Last year we met with more than 200 UK-based businesses as part of our supplier engagement programme and our doors are still very much open – if you think you have the skills, capabilities and experience we are looking for, then get in touch via - www.inchcapewind.com

We look forward to working with Scottish Renewables and others to deliver the Inch Cape Offshore Wind Farm and to achieving our shared aim of a growing and vibrant offshore wind supply chain here in Scotland.



## **SUPPLIER CASE STUDIES**

The following case studies showcase the diverse range of Scottish suppliers delivering their expertise to the renewable energy market.

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

HYDRO		WIND
WAVE AND TIDAL		HYDDROGEN
OFFSHORE WIND		STORAGE
SOLAR	( <b>4</b> )	OTHER
HEAT		



Innovative safe marine practices firm sees global growth in the last year despite the Coronavirus pandemic

Ace Aquatec is the sole global stockist of FaunaGuard and developer of species-specific devices which emit safe levels of sound causing a behavioural response in marine fauna creating temporary exclusion zones around offshore construction sites.

Due to the effectiveness of its devices, the firm has seen significant growth in the last year having increased its team from 5 to 35 employees worldwide, including graduates and modern apprentices.

The Dundee-based organisation has opened a new local suite of offices and a service centre in addition to opening branches in Norway, Australia and Chile whilst expanding its Canada office.

In the past year, Ace Aquatec have engaged in multiple offshore projects, including providing protective measures on the 1500MW Hollandse Kust Zuid in the Netherlands, Saint-Brieuc offshore wind farm in France and Kailia, the first offshore wind farm in Italy.

### BALLARD MOTIVE SOLUTIONS

Developing Scotland's first hydrogen train

Ballard Motive Solutions, previously Arcola Energy, is leading the Scottish Hydrogen Train Project in partnership with Transport Scotland, Scottish Enterprise and the University of St Andrews.

At the core of the project is the conversion of a retired class 314 electrical train to hydrogen traction. The project is underpinned by objectives focused on leading to the creation of opportunities for the Scottish supply chain through skills development, new technology and job creation.

The conversion also demonstrates the potential of repowering existing rolling stock to decarbonise Scotland's geographically diverse network, connecting communities and contributing to a green economic recovery.

In addition to the newly-classified hydrogen-powered train, the recent Bo'ness showcase, which took place during COP26 - The UN Climate Change Conference, also included Ballard Motive Solutions hydrogen refuse collection vehicle and a hydrogen bus.

### "WE LOOK FORWARD TO Developing our suite of Modules further with partners That share our green ethos."

Andrew Gillespie, Business Development Lead, **Faunaguard** 



"THE SCOTTISH HYDROGEN TRAIN PROJECT IS A BEST-PRACTISE EXAMPLE OF A PARTNERSHIP BETWEEN GOVERNMENT, INDUSTRY AND ACADEMIA. WE ARE DELIGHTED TO WORK WITH OUR PARTNERS ON THE PROJECT'S PRIMARY OBJECTIVES OF DRIVING LOCAL SUPPLY CHAIN OPPORTUNITIES, ENHANCING TECHNICAL SKILLS AND PROMOTING NEW JOB OPPORTUNITIES." Dr Ben Todd, CEO, Ballard Motive Solutions



Innovative floating wind solution reduces installation times by 70%

For more than 40 years Balmoral has been providing engineered buoyancy, protection and insulation product solutions to the harshest subsea environments in the world. Widely used in the Oil and Gas sector, the company's technology is now being applied in the renewables sector, particularly offshore wind. For a recent project Balmoral was asked to significantly reduce costs incurred during the pilot phase of a North Sea floating wind development. The companies technical team designed an innovative solution which reduced the quantity of subsurface buoyancy modules required. The project also utilised Balmoral's patented clamping system that slashed installation times by an impressive 70%.





FES GROUP

From heat to hydrogen, family-owned business is delivering the energy transition.

FES Group has seen significant activity across the energy transition landscape and as a result has appointed a staggering 50+ trainees and apprentices into the company in 2021.

The Stirling-based company has delivered a range of projects including: installation and ongoing maintenance of the nation's largest hydrogen fuel cell at The Event Complex in Aberdeen; solar powered low-carbon vehicle charging hubs in Falkirk and Stirling and Scotland's first fifth generation heating network at the country's advanced manufacturing innovation district in Renfrewshire.



If that wasn't enough, FES has also been working on sewage heat recovery systems at Stirling and Dalmarnock. The Dalmarnock project delivers low-carbon energy and also includes additional sustainable innovations through the use of over 414kg of plastic waste to create the site access road, offsetting more than 730kg of carbon emissions. The plastic tarmac was manufactured and supplied by local Lockerbie-based firm MacRebur.

Ensuring its work positively impacts lower tiers of the supply chain FES has engaged with the supply chain on all of these projects. Its Meet the Buyer Events provide opportunities for local companies wishing to be involved in the delivery of the works.



Scotland's largest port group makes renewable energy a reality and creates thousands of jobs in the sector.

Forth Ports operates seven strategically located ports - Grangemouth, Leith, Dundee, Rosyth, Burntisland, Kirkcaldy and Methil.

Forth Ports Dundee is a significant economic driver for the city and has facilitated the development of five major offshore wind farms in Scotland: Beatrice, Seagreen, Aberdeen Bay, Neart na Gaoithe and Kincardine offshore wind farms. Forth Ports Dundee is also supporting the delivery of marine renewables having launched the Orbital Tidal Turbine in April 2021. The turbine was towed from the Port of Dundee, where it was manufactured, out to a site off the coast of Orkney where it will now supply energy locally to 2,000 homes for up to 15 years.

In addition to the success at Dundee following the significant £40 million investment in 2019, the group has announced a further £20 million investment into the Port of Leith to create a renewables hub for the future.

This latest transformation will support up to 1,000 high quality direct jobs and 2,000 indirectly from manufacturing and supply chain activities, creating jobs in Scotland for generations.





FOUNDOCEAN 👍 😂

Award-winning West Lothian supplier has developed into the world's largest dedicated offshore construction grouting company.

FoundOcean is a Scottish global success story as a main contributor to the offshore energy industries for nearly 60 years.

Through its work in offshore foundation grouting, FoundOcean adds value by offering life extension solutions and providing rehabilitation design services for assets around the world. In the UK FoundOcean has worked on many offshore wind farms including: Gwynt Y Mor, West of Duddon Sands, Race Bank, Burbo Bank, Ormonde, Humber Gateway, Dudgeon, Beatrice, East Anglia One and is currently supporting two large projects off the east coast of Scotland.

The Livingstone company delivered all of these projects with the help of its local suppliers, providing everything from materials and logistics to electric motors and PPE.

FoundOcean has also successfully expanded its presence out of Europe into Asia and is positioned for future projects on the east coast of America.



Aberdeen-based inspection provider supports landmark offshore wind farm projects.

Fulkrum's most recent success in the offshore wind market is the award of a global contract with a major wind turbine original equipment manufacturer. The inspection provider will ensure conformity and quality of key wind turbine components to be used on all three phases of the Dogger Bank wind farm. Using its expert UK-based Quality Assurance and Quality Control personnel across sites in Europe, China and the UK, Fulkrum will ensure the project follows its local content pledge and will provide further employment in the UK.

This latest win builds on their track record of supporting major European landmark offshore wind projects including Moray East, Seagreen, Hornsea, Galloper, Courselles-sur-Mer to name a few.

### GLEN HYDRO CONSULTING 🙆

Financial returns boosted for local community owned hydro scheme

Glen Hydro has been working on hydroelectric scheme development since 2010 and specialises in the evaluation, development, project management and operation of small and medium scale hydroelectric schemes.

The company has built more than 20 schemes under the feed-in tariff regime and is particularly proud of its involvement in the 1.6MW Barr River scheme in Morvern. The team embarked on exploring the potential for the community owned hydro scheme in the West Highlands in 2013.





## Industry leading equipment distributor plans global expansion

Gibb Group specialise in the supply of vital PPE and maintenance repair and operational equipment and within the last year has secured several large contracts in offshore wind. Headquartered in Aberdeen and operating out of more than 20 countries Gibb are not stopping there. The company is entering an expansion phase across the UK, Europe and further afield.

The expanision has created the demand for new roles across the company and its ongoing recruitment drive includes the development of an apprenticeship program as well as engagement with local colleges.

"RECENT CONTRACT AWARDS FOR GIBB GROUP EVIDENCES OUR CAPABILITIES AS A LEADING SUPPLY CHAIN SOLUTIONS PROVIDER TO THE SECTOR. WITH AN EVER-GROWING REPUTATION FOR OUR CUSTOMER FIRST APPROACH, WORKING ON THESE PROJECTS WILL PROVE INVALUABLE FOR US AS WE MOVE FORWARD TO AN EXCITING FUTURE."

Lee Sparkes, European Sales Manager, **Gibb Safety & Survival** 



Construction of the scheme took place during 2020 and 2021 using predominantly local contractors and the turbine was commissioned in July 2021. The project was delivered significantly below budget with the repayment of the most expensive debt sooner than expected, increasing the financial return to the community.

Glen Hydro also support a portfolio of operational hydro projects and have worked with the Upper Suileag scheme for the past three years.

Richard Tulloch from the Fassfern Estate said: "Glen Hydro's work on our Suileag scheme resulted in a significant increase in annual production due to their successful work with SEPA on the projects licencing conditions".

### GLOBAL ENERGY GROUP

Port of Nigg supports Scotland's offshore wind farms and announces UK's largest tower manufacturing facility

2021 has seen Global Energy Group delivering preassembly, storage, and marshalling works for two of the country's largest offshore wind farms: Moray East and Seagreen.

Global's Port of Nigg facility bid farewell to the final components for the Moray East project, having successfully completed the entirety of the wind turbine generator pre-assembly works. The port welcomed every blade, tower and nacelle for the project which were offloaded, marshalled, and readied for installation before being loaded out to their final destination.

The facility received the jacket foundations for the Seagreen project in August 2021. The company is to work with project owners, TotalEnergies and SSE Renewables throughout the entirety of the 12-month installation campaign, supporting up to 141 skilled jobs at the Port of Nigg.

With growing aspirations in the industry, Global Energy Group also made an exciting announcement in 2021 confirming plans for a significant investment to create the UK's largest offshore wind tower manufacturing facility at Port of Nigg.

# UIR CUMUIED STRATEGIC INVESTMENT AT

### "OUR CONTINUED STRATEGIC INVESTMENT AT OUR PORT OF NIGG FACILITY DEMONSTRATES GLOBAL'S COMMITMENT TO LEADING THE DEVELOPMENT OF AN OFFSHORE WIND ENERGY HUB IN SCOTLAND, CREATING JOBS AND OPPORTUNITIES FOR THE ENTIRE SUPPLY CHAIN FOR GENERATIONS TO COME."

Iain Sinclair, Executive Director of Renewables & Energy Transition, **Global Energy Group** 

### HYDRASUN LTD 🔬 🗊

## Turnkey solutions for mobile hydrogen refuelling

With four offices in Scotland and 450 people employed across the globe, Hydrasun is focused on delivering the energy transition through its expertise in the provision of integrated fluid transfer, power and control solutions.

One area of specialty for Hydrasun is mobile hydrogen refuelling stations. The units offer a low-cost path to the delivery and dispensing of transportation-grade fuel at point of use. Their mobility and ease of rapid deployment is a key selling point as it avoids the need for expensive permanent infrastructure.

Recently Hydrasun provided a turnkey manufacturing solution producing refuelling units for a leading renewable

### IMS HEAT PUMPS LTD 🕕

From domestic homes to sporting estates, IMS Heat Pumps is upskilling its workforce to deploy low-carbon heat solutions across Scotland

From its office in Perth, IMS Heat Pumps designs, supplies, installs, services and maintains ground, air and water source heat pumps for customers building or renovating their own homes.

Recently, the company has been increasingly asked to support larger projects. Exciting work for this year has included ground source heat pumps for cottages on a large sporting estate, as well as a replacement for electric radiator heating on a castle just outside Edinburgh and air source heat pumps for luxury holiday lodges in Dundee.

This growing success means an increase in its subcontract groundwork to its drilling contractor based in North Ayrshire, ATB Drilling, and its underfloor heating equipment supplier, UHM, based in Perth. The expansion also means the growth of the IMS Heat Pumps team, which now consists of 12 staff in Scotland, a new apprentice and two advanced plumbers who are upskilling to be able to install heat pumps instead of fossil-fuel boilers. energy client. The work encompassed the supply of product, panel assembly, the integration of sub-systems and associated system pipework as well as the installation of the electrical, safety and control systems. The complete unit was then fully tested and commissioned prior to undergoing third-party approval and certification.









### 



Creating a safe base for offshore wind farm operations and maintenance crew

Last year, Inland and Coastal Marina Systems won the contract to design and build bespoke crew transfer vessel berthing facilities for Moray East Offshore Windfarm Limited. The scope was to provide a safe 'all-in-one' base for the daily servicing, refuelling and usage of the vessels during the ongoing maintenance of the wind farm.

Inland and Coastal worked closely with Moray East Offshore Windfarm Limited, the Harbour Commissioners and multiple other partners to deliver the best value solution for the project. The key drivers were all-weather operation and turnaround time for the vessels. Inland & Coastal Marina Systems delivered a solution enabling a 25-minute turnaround time - including refuelling, change out of consumables and water resupply.

The organisation has also delivered and installed bespoke pontoon solutions for Seagreen, Aberdeen Bay, Kincardine and Neart na Gaoithe offshore wind farms.





### Reducing carbon emissions with specialist ground source heat pumps

Kensa Group is the UK's leading ground source heat pump specialist and its installations have saved more than a million tons of carbon since 1999.

The company opened a dedicated office in Glasgow in 2021 and demonstrated its heat pump ambitions at COP26 with the launch of its Green Street proposal.

Kensa has been actively engaging with energy suppliers, the UK and Scottish governments, and other leading organisations to showcase and implement the Green Street heat network solution across the UK.





**"SCOTLAND WAS THE FIRST COUNTRY IN THE UK** TO LEGISLATE TO SUPPORT THE GROWTH OF HEAT NETWORKS, THROUGH WHICH CLUSTERS OF HOMES AND BUSINESSES GET HEATING FROM A CENTRAL **RENEWABLE SOURCE. FROM 2024, IT IS PROPOSED** THAT ALL NEW HOMES IN SCOTLAND SHOULD ONLY **USE HEATING SYSTEMS WHICH PRODUCE ZERO DIRECT GREENHOUSE GAS EMISSIONS AT POINT OF USE, SO** KENSA'S HEAT PUMPS WILL BE VITAL. NOT JUST IN **DELIVERING EFFICIENT, LOW CARBON HEATING THAT ALLEVIATE FUEL POVERTY IN RURAL AREAS, BUT ALSO** IN TOWNS AND CITIES."

Matthew Black, Business Development Manager, Kensa

### KISHORN PORT LTD 🕂 🔁 💭 💮 💿

West coast port looks to the future with renewables facility improvement plans

Located on the North West coast of Scotland, Kishorn Port and Dry Dock has huge potential to support the manufacturing, laydown and assembly of offshore wind and marine energy projects.

Kishorn Port Limited has exciting site improvement plans in the pipeline, with Highland Council granting planning permission to expand the dry dock to accommodate vessels of up to 250 metres in length, and for the reclamation of foreshore ground.

This investment will also increase the area of laydown land available for renewable energy operations alongside day-to-port activities including oil and gas vessel decommissioning/maintenance, aquaculture support and port services. It will provide many hectares of suitable land including extensive hard standings and lay down areas.



Despite having only recently restarted operations in the dry dock, 2020 alone saw three new major contracts for Kishorn including the decommissioning of the MV Kaami, where 99.57% of the vessel was recycled or reused.



Startup becomes global service provider in just three years thanks to offshore wind

Since 2018, environmental service company Legasea has been specialising in a range of electrical, hydraulic, and mechanical engineering services. Promoting sustainability

"IN SCOTLAND, WE HAVE AN ENVIABLE ARRAY OF OPPORTUNITIES WITH REGARDS TO RENEWABLE ENERGY. EXISTING EXPERIENCE, COUPLED WITH THE INGENUITY OF THE ENERGY SUPPLY CHAIN, MEANS THAT SCOTLAND IS PERFECTLY POSITIONED TO PLAY A PIVOTAL ROLE IN THE TRANSITION TO NET-ZERO, AND WE LOOK FORWARD TO CONTINUING TO SUPPORT THE RENEWABLES SECTOR IN THE YEARS AHEAD."

Ray Milne, Operations Director, **Legase** 

and reuse of subsea equipment, Legasea is reducing costs and carbon emissions for a wide range of global clients.

Legasea designs, assembles, and tests a range of equipment within its facility near Aberdeen, for all areas of the energy sector.

Recent projects completed include: the testing of subsea battery storage cells in a 1.2 million litre test pit, the modification of sub-sea production trees for a tidal project and the building and testing of dredging tools for the piling activity on an offshore wind farm in Taiwan.

Throughout 2021, the company has more than doubled its headcount and plan to have a team of 30 by the end of 2022.







Three Scottish founders create a multi-award-winning international renewable energy firm

Since 2009 Edinburgh-based Logogen has grown significantly having won awards, secured industry certifications and expanded internationally into France.

With specialists across almost all renewable energy technologies, the team delivers both commercial and community projects. Recently the company

"WE BELIEVE TOTALLY IN A FAIR AND INCLUSIVE TRANSITION TO A LOW-CARBON ECONOMY. TO DATE IN 2021 WE HAVE SECURED MORE THAN 120 CONTRACTS AND MANY OF THESE INVOLVE SIGNIFICANT SUPPORT FROM OUR SUPPLY CHAIN. IT'S GREAT TO SEE SO MANY TRADES AND PROFESSIONS BENEFIT FROM RENEWABLES: EVERYTHING FROM TRANSPORT AND PLANT COMPANIES TO BUILDING CONTRACTORS, VIDEO PRODUCERS, ECOLOGISTS AND EQUIPMENT MANUFACTURERS."

Andrew Lyle, CEO, locogen

secured contracts to decarbonise a number of Scottish distilleries, including the development of new renewable power assets to deliver green hydrogen.

Locogen continues its growth journey and has recently been awarded Green Jobs Funding from the Department of Business, Energy and Industrial Strategy to grow its internal team and support emerging technology projects around ports on the west coast of Scotland. This will explore development of new power generation to feed green hydrogen production for use locally. The projects will engage with a wide range of partners, including local supply chain companies.





Media specialists use renewable energy technology for remote film capture

From offshore filming in Orkney to interviewing Fortune 500 companies in London, MBP has established a strong presence in the renewable energy sector, delivering media content for clients across the UK.

Using its knowledge and connections in the sector, MBP successfully repurposed the UK's first remote renewable energy camera surveillance system for remote monitoring stations.

The monitoring solution was initially implemented to provide sustainable power to track the progress of a major highways infrastructure project and can be used to power various equipment configurations.

After 28 months of using solar and wind powered off grid generators, MBP has captured over 700,000 images and four million megabytes tracking the progress of the now-completed road building project.



During the pandemic, MBP has proudly reduced its carbon footprint, particularly by using remote filming solutions with dial-in access for clients.

Contracting freelance filmmakers and editors for renewables projects has also been a huge success and contributed to the Scottish economy.



Scottish-based Motive Offshore launches a regional renewables hub in Taiwan in 2021

Headquartered in Boyndie and with bases on three continents, Motive Offshore Group has secured framework agreements within renewable energy markets over the past 12 months.

The group has fulfilled various major cable lay, transpooling and equipment supply contracts for Moray East and Kincardine, whilst also securing its first major contract in Norway delivering a cable lay package for the TetraSpar Demonstrator floating wind turbine installation.

Motive was also delighted to be selected for participation in the Fit 4 Offshore Renewables North East Scotland Programme 2021.

In its drive to deliver sustainability for the future, Motive has made significant investments developing a clean energy product range of Renewable Hybrid Power Containers. These mobile, off-grid systems are enabling the industry to make the necessary changes to meet environmental targets on the road to net-zero.

Further afield, Motive launched a new Regional Renewables Hub in Taiwan this year. Motive has been active in every landmark offshore wind project in Taiwan to date and this facility acts as their new flagship Far East base.



OPTIONS
ORATED
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VARIOUS POWER OUTPUTS
OFFSHORE AND ONSHORE VERSIO
OTIOV, 240 OR 3 PHASE AVAILABLE

### NATURAL POWER

### Scottish firm worked on 3,748 renewable projects in the past 12 months

From its Dumfries & Galloway headquarters, where over 300 employees are based, Natural Power has expanded its global reach, with 14 offices located around the world that have delivered projects in 69 countries.

In the past 12 months it has worked on 3,748 renewable projects from its core markets of the UK and Ireland, France and the US to 12 new countries including Burkino Faso, Vietnam and Saint Helena.

Natural Power provided technical due diligence services and energy yield assessment for the financing of the largest offshore wind farm in Finland, the 404MW Mutkalampi. Most of the electricity produced will supply Google, Heineken, Nobian, Philips and Signify through 10-year corporate PPAs. To ensure that as much of the contract value for renewables developments stays in the local area Natural Power's procurement process endeavors to contract with local companies wherever possible. It currently works with100 active suppliers based in the South of Scotland ranging from engineering firms to tool hire companies and local hospitality providers.







### NORTH STAR RENEWABLES LTD

Transitioning to offshore wind after 135 years in the North Sea

Initially established to support the fisheries industry in 1886, North Star Group has been operating in the North Sea for 135 years.

Since diversifying into the oil and gas sector in the 70s and more recently transitioning into the renewable energy sector, the group now proudly has the largest, whollyowned UK-based vessel fleet. Comprising of 44 offshore support vessels and 63 daughter craft vessels, this is the largest emergency response and rescue fleet of this type in the world. The Group has three strategic bases in the UK, in Aberdeen, Newcastle and Lowestoft, and employs around 1,400 people in the UK. Its continued focus on workforce health and safety has seen North Star being awarded the British Council Safety Award for the past 14 consecutive years.

In 2021, the North Star Renewables division successfully confirmed its position in the UK's growing offshore wind market after securing its first contract to build a fleet of its service operation vessels, which will be delivered from 2023 and be leased for 10-year terms.

### OPPORTUNITY CROMARTY FIRTH 👍 🗊

Private and public sectors collaborate with academia to create strategic renewable energy hub

Opportunity Cromarty Firth (OCF) is a collaborative partnership of private, public sector and academic bodies committed to ensuring the Cromarty Firth becomes a strategic renewable energy hub.

Established in August 2020, one of OCF's first moves was launching The PowerHouse, a centre of excellence in applied R&D within the fields of floating offshore wind and green hydrogen. The centre will also act as a specialist educational hub to provide training for school children, students and workers interested in renewable energy.

Another key OCF focus is green hydrogen. This led to the establishment of the North of Scotland Hydrogen Programme, a collaboration aiming to create a green hydrogen hub to provide a viable, carbon-free fuel for regional industries, as well as storing and transporting it to other locations within Scotland, the UK and abroad. "OCF IS COMMITTED TO BUILDING A PROSPEROUS FUTURE FOR THE HIGHLANDS, BASED AROUND RENEWABLE ENERGY. THROUGH OFFSHORE WIND, FLOATING OFFSHORE WIND AND GREEN HYDROGEN, WE WILL CREATE SKILLED JOBS AND HIGH-WAGE OPPORTUNITIES. POOLING OUR RESOURCES LIKE THIS HELPS BUILD THE INFRASTRUCTURE, TECHNOLOGIES AND SKILLS NEEDED TO REALISE OUR DREAM OF REACHING NET-ZERO BY 2045."

> Bob Buskie, Chief Executive, Port of Cromarty Firth





### ORBITAL MARINE POWER 😂 🗊

The world's most powerful tidal turbine, the O2, built and installed in Scottish waters by Orkney firm

Manufactured and launched in Dundee earlier in the year before being towed up to Orkney, the O2 is Orbital Marine Power's first commercial turbine and represents the culmination of more than 15 years of world-leading product development in the UK.

Orbital is targeting dramatic cost reduction by incorporating learning from similar applications across mature energy sectors, where increases in blade lengths and component reliability have delivered plummeting generating costs.

For the build of the O2, Orbital engaged a supply chain here in the UK that delivered more than 75% (by value) of the turbine. Here is how that breaks down:

- Working steel from Motherwell
- Layering composites for rotors in Gosport
- Casting iron in Scunthorpe
- Fabricating in Llangefni
- Fabricating in Thurso
- Machining hydraulic cylinders in Sheffield

- Assembling mechanical systems in Workington
- Welding in Fife
- Wiring electrical connectors in Southampton
- Installing offshore infrastructure in Orkney
- Assembly in Dundee
- Project insurance secured from Clark Thomson, Perth

A carbon assessment of the O2 tidal turbine concluded that while the machine can run for 20 years, the carbon emitted by the project will be offset within just one year and four months.

> "A CENTRAL STRAND TO THE Development of our 02 technology was a vision for the future and to ensure we created a product which is well futureproofed for ongoing innovation."

> Andrew Scott, CEO, Orbital Marine Power

### PENTAGON FREIGHT SERVICES (4)(4)



2021 a year of standout accomplishments despite the global pandemic

Against the odds, 2021 has been a breakthrough year for Pentagon Freight Services. Its Scottish offices are seeing the volume of renewables work soar despite the global pandemic.

Some stand-out accomplishments this year have been:

- Partnering with offshore installation companies to transport 'walk to work' gangways to their installation vessels
- The award of a five-year contract for global freight forwarding and logistics support from a major offshore wind farm

- Providing air and sea freight shipments to Taiwan from Scottish companies
- Supporting a UK manufacturer delivering to Brest and Fene for a 496MW capacity offshore wind farm off the coast of Brittany, France
- Working with many survey companies as their sole logistics provider where a large proportion of their work in 2021 involved the renewables sector
- Providing customs consultation services to a number of renewable energy clients

The success seen in 2021 has not only been great for Pentagon Freight Services in Scotland but also for its local suppliers. The company also premiered its apprenticeship programme, recruiting five apprentices who are currently progressing through a structured in-house training programme.



MONTROSE PORT AUTHORITY

Supporting, engaging and educating the local community

SSE Renewables selected Montrose Port Authority to be the home of the Seagreen Offshore Wind Farm Operations and Maintenance base in 2019.

Construction of the base was completed in 2021 and some existing facilities have been regenerated as part of efforts to contribute to the circular economy - more than 54 tonnes



### RENEWABLE PARTS

Scottish success story now supports more than 2,600 wind turbines across the UK and Europe

Originating in Lochgilphead, Renewable Parts has seen huge success since it was formed 10 years ago. This established supply chain company is providing critical support to wind farms across the UK and Europe, supplying new parts and components, as well as running a unique circular economy focused parts refurbishment service.

There has been continued support for the community in Lochgilphead as Renewable Parts has grown with increased investment in a new premises in the town - four times the size of its previous location - and the introduction of a graduate scheme with local schools and colleges to create new technically-skilled jobs through Modern Apprenticeships.

The company now employs 30 people and has opened a second site in Renfrew following its success.

of steel was reused which saved around 99 tonnes of CO2. Continuing its recycling efforts, the communications mast for the project was also repurposed from having previously served the Moray East Offshore Wind Farm.

Montrose-based Pert Bruce was appointed as the main contractor for the site, safeguarding 30 jobs over the year within the business and wider supply chain. The company subsequently contracted another Montrose-based business, Harry Maiden, to erect the steel structure.

As well as local businesses benefitting during the construction phase, Seagreen will also support a £1.8 million community benefit fund which will be divided between local community councils.

Ensuring the community has been involved in the project has been key for Montrose Port Authority. The company produced a kids activity pack during lockdown 2020 and are currently collaborating with local schools to help them learn more about the renewable energy industry and name the 0&M building.

Renewable Parts is on an exciting journey as it invests heavily in research, and the organisation will soon be providing a wider range of components and technologies to meet the growing consumer demand for greater sustainability in green energy technology.





### Long-standing Scottish business keeps local economic benefit at the forefront of its operations

RJ McLeod has operated for 70 years as a Scottish civil engineering construction business.

Renewable energy construction has greatly contributed to providing the work required to allow RJ McLeod to maintain and invest in its workforce in Scotland, and that of its local supply chain. It has also been able to provide opportunities for individuals to progress through the company as well as continuing to recruit several engineering graduates and apprentices year on year. In 2021, RJ McLeod has continued its contribution to the local community through:

- Increased employment and training of individuals in priority groups
- Training and mentoring of young people
- CSR engagement with local communities and suppliers
- Supporting local suppliers through training, meet the buyer events, procurement portals and collaboration with the Supplier Development Programme

With its longstanding history in Scotland, RJ McLeod's renewable energy experience dates back to the large hydro schemes of the 1950s. Fast forward to 2021 and it has built more than one hundred Scottish onshore wind farm projects – an impressive 3600MW constructed or in construction since 2005.





### SAFELIFT OFFSHORE LTD

Oil and gas success lifts profile to enter renewable energy sector

Established in 1994, Safelift Offshore's client base has been largely oil and gas but now it is supporting national and international renewable energy projects.

From its base in Aberdeen, Safelift Offshore provides its offshore wind clients with specialist fixed and portable manual or mechanical handling equipment. Recent project experience has included deliveries for the Hollandse Kust Zuid and Seagreen offshore wind farms.

Safelift Offshore is delighted that its success in the offshore wind sector is having a positive impact on their team. It has enabled staff development, created new jobs and increased spending with the company's supply chain partners. "WE SEE OUR PARTICIPATION IN SCOTLAND'S RENEWABLE ENERGY SECTOR AS BEING IMPORTANT FOR OUR ORGANISATION AND WE ANTICIPATE IT WILL ACCOUNT FOR A SIGNIFICANTLY GREATER PERCENTAGE OF OUR TURNOVER IN THE SHORT TO MEDIUM TERM, ALTHOUGH THERE REMAINS WORK TO BE DONE."

> Hugh Ramsay, Group Sales Manager, **Safelift Offshore Ltd**

### SONARDYNE INTERNATIONAL LTD

### Understanding Scotland's marine environment through cutting edge technology

With origins in the North Sea in the early 1970s, Sonardyne now has a portfolio of vessel-based and complementary sub-surface technologies that support many different types of marine operation throughout the life of a wind farm.

From its service and operations base in Aberdeen, Sonardyne support offshore wind projects with the supply of equipment to survey contractors carrying out hydrographic, geophysical and geotechnical surveys for site characterisation, cable laying, and remote and autonomous vehicle navigation.

As part of its five-year strategic plan, Sonardyne is aiming to become carbon neutral by the end of 2025. Initiatives already in place include installing three photovoltaic arrays producing 533kW of power at its Hampshire headquarters and manufacturing premises, upgrades to electrical and building fabric, and implementing certified energy management systems throughout its facilities.







### Driving Innovation in Energy Storage

StorTera designs, develops and implements a range of energy storage solutions and its progress to date has resulted in an expected lifetime saving of 18,000 tonnes of CO2. The company has also expanded in 2021, with the hire of three new full-time employees.

One of StorTera's developments is the TRAICON, a system which uses artificial intelligence to optimise control systems by learning individual user behaviour and local weather information. "IT HAS BEEN A SUCCESSFUL YEAR FOR STORTERA WHERE WE ACHIEVED 2MWH OF INSTALLED SYSTEMS AND ARE SEEING A STRONG PIPELINE DEVELOPING. WE PLAN TO EXPAND TO MEET THIS DEMAND AND ARE PREPARING TO INSTALL THE NEXT GENERATION OF OUR FLOW BATTERY FOR PERTH AND KINROSS COUNCIL IN 2022." Gavin Park, CEO, StorTera Ltd

Fricod

In 2021, StorTera worked with a local distributor in Orkney to provide a solar and storage solution for eight residences which allowed homeowners to maximise use of their own Solar power generation in a highly constrained grid area.

StorTera also participated in the high-profile Power Forward Challenge competition in Nova Scotia, Canada, to demonstrate the future of energy grids by providing an Al software platform and controls alongside domestic and commercial energy storage systems. A bespoke StorTera system was also used to demonstrate peer-to-peer trading for the CommUNITY project in London, run by EDF Energy, Repowering London and UKPN.



The Scottish Government and Carbon Trust makes Vryhof's floating offshore wind mooring system a reality

Vryhof provides drag anchors and related mooring equipment for large floating structures to the offshore energy industries as well as for offshore civil applications.

The company recently supplied its latest product, Stevadjuster, to an innovative floating offshore wind project.

The Stevadjuster is an innovative, cost-effective and timesaving solution for chain adjustment, pre-tensioning of moorings and easy connection or disconnection of anchor lines



The development of Stevadjuster was funded by The Scottish Government through a grant agreement with the Carbon Trust as part of the Floating Wind Technology Acceleration Competition, and is now installed off the coast of Norway.

### ZELIM (

The world's first remotely-operated offshore search and rescue service. developed by Edinburgh company

Zelim's unmanned, remotely-operated rescue vessels are launched from a mothership, a harbour or in-field from a turbine foundation or substation. They are on permanent standby and can launch instantaneously, reducing the time taken to reach the person in distress, increasing the chances of recovering them alive.

The innovative technology - which has been supported by the ORE Catapult's Launch Academy accelerator programme and Scotland's exceptional test and demonstration facilities - will be demonstrated to industry in 2022 for commercialisation in 2023.

Zelim will also supply its patented rescue conveyor and casualty-detection system as a retrofit to manned workboats such as CTVs to improve their emergency response capability from early in 2022.

### "ZELIM'S MISSION IS TO MAKE **UNMANNED SEARCH AND RESCUE THE NORM, SO THAT** MARINERS ARE NO LONGER **REQUIRED TO RISK THEIR LIVES TO SAVE OTHERS.**"

Andy Tipping, Head of Commercialisation, Zelim



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

As part of the UK's Offshore Wind Sector Deal between government and the offshore wind industry, the Scottish Offshore Wind Energy Council (SOWEC) was formed.

Co-chaired by Scottish Government Minister for Business, Trade, Tourism and Enterprise Ivan McKee MSP and Brian McFarlane of SSE, its vision is to create a world-class offshore wind sector that underpins the transition to net-zero by 2045 and maximises the value to Scotland.

SOWEC Goals include delivering at least 11GW of offshore wind in Scottish waters by 2030, Establishing Scotland as a world-class offshore wind sector and developing a highly skilled and diverse workforce.



### **UPCOMING EVENTS**

PLANNING CONFERENCE

# WIND

23 FEBRUARY 2022 **GLASGOW** 

### MARINE CONFERENCE

25 MAY 2022 **EDINBURGH** 



### **CLUSTERS FOCUS**

The Forth & Tay and Deepwind offshore wind clusters were established to drive the growth of offshore energy across Scotland.

The groups are working to attract inward investment and promote the regional supply chain, ensuring Scotland can achieve greater benefit from the current and future development of offshore wind in the UK and internationally.

In the coming years we may also see emerging support clusters for other technologies. As we roll out low-carbon heat solutions. the use of green hydrogen and more marine technology, industry groups are looking to support the growth of the Scottish supply chain for these growing markets.





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