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OFFSHORE WIND CONFERENCE 8 & 9 MARCH 2022 GLASGOW

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Claire Mack Chief Executive Scottish Renewables



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ORGANISED BY







Claire Mack Chief Executive Scottish Renewables



Michael Matheson MSP Cabinet Secretary for Net Zero, Energy and Transport

ORGANISED BY







From opportunity to delivery: securing offshore wind's place in the Scottish economy



Colin Palmer

Director of Marine, Crown Estate Scotland

Andy Hogg

Deputy Director, Energy Industries, The Scottish Government

Audrey Maclver

Director of Energy Transition and Net Zero, Highlands and Islands Enterprise

Jamie Maxton

Head of External Relations (Scotland), SSE Renewables

Andrew Jamieson

Chief Executive, ORE Catapult



VISIT THE EXHIBITION



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Perspectives on innovation for successful market breakthrough: taking concepts to commercial reality



Sian Lloyd Rees UK Managing Director Aker Offshore Wind



Philip Taylor Managing Director Pict Offshore



Perspectives on innovation for successful market breakthrough: taking concepts to commercial reality

Pict

Getting Started

- The problem: Carbon Trust OWA competition (2011)
- Funding: Scottish Enterprise SMART innovation grant
- Testing: Strathclyde NAME data applied to CTV simulator
- ORE Catapult 'Game Changer' with LDT
- Awareness: Socialised prototype testing on CTV simulator and LDT

Pici

Timing: Caught Orsted's attention

Offshore Trials

• 2018/2019: Offshore Trials at Orsted UK windfarms Development of specs/ features/ procedures to ensure transferee safety for ladderless TP **⇔Pict**

- powering from CTV
- back up power
- rescue / evacuation

Mechanical Design

≎Pict

• 2019/2020 - Integration of hoist and electronics into mechanical design for HOW02

• Development of new features to facilitate usability/ serviceability

• Fail fast, fail forward (learn by doing)

Standards, standards, standards

What happens if ...?

≎Pict

• Be prepared for FMEA/ bow-ties/ HAZID till you drop

HR

- Testing data critical
 - CTV Simulator
 - HALT
 - Environmental chamber

Production

14k' test and assembly facility in Inverkeithing, Fife 2020/21: Assembly and testing of x165 systems for HOW02

1 11 185

WLL 150 kg

CUS

Offshore commissioning

≎Pict

2021/22: GUS system used alongside W2W and heli-winch access at HOW02
Second contract for GUS with 3 Orsted USA windfarms
Developing proposals to allow it to be used as primary access and cargo transfers

OWGP funding assistance



Questions?

ALLELL .

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(HI)

TOMA

SIF



Carol Sheath Engineering Programme Manager Renewable Parts

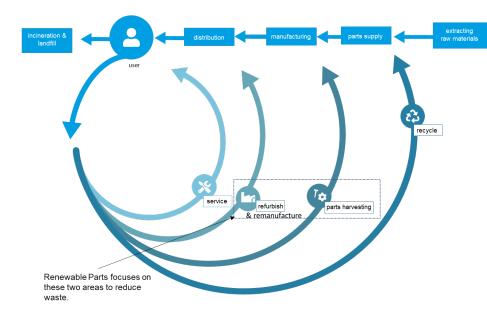


Renewable Parts Ltd. A Circular Economy for the Wind Industry

Scottish Renewables Offshore Wind Conference

08 March 2022

The circular economy



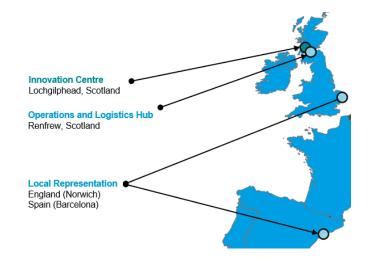




The wind industry is a green energy source, but the aftermarket remains largely nongreen Linear procurement practices remain deeply ingrained for minor parts

The opportunity to embed greater sustainability within the aftermarket has substantial benefits But this requires a complete change of culture and a willingness to invest in circular economy technology

What we do



- Parts supply & inventory management - to minimise lead time and maximise turbine availability
- Development and production of sustainable solutions – refurbishment, remanufacture, reuse and redesign of parts to provide a more sustainable alternative to new



How we do it



Research & development: in-house, with academic partners & with trusted third parties



Parts ordered as alternative to new, in most cases with a likefor-like warranty



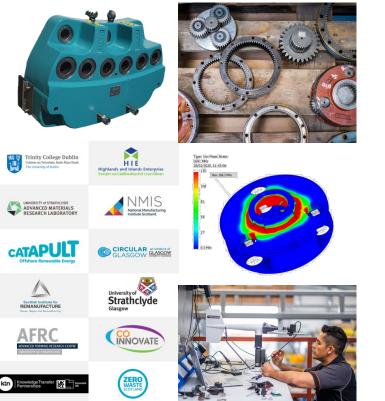
Return of used part a condition of supply

Reverse logistics; custom frames and packaging Scalable - Sustainable - Innovative









Contributors to success







Thank-you



Ty Burridge-Oakland Co-Founder Director of Product Development Cognitive Business





Ty Burridge-Oakland



Ty Burridge-Oakland, Managing Director, Cognitive.Business Ltd

2008: Invented Machine Learning Technology at E.ON
2009-2011: Led Pilots and Business development for ACM at E.ON
2012-2014: Led the Global Roll Out
2012: Invented Maintenance Strategy Optimisation (MSO) Tech
2012-2016: Led Analytics and Machine Learning Innovation
2014-2018: Led Pilots and Business Development for MSO

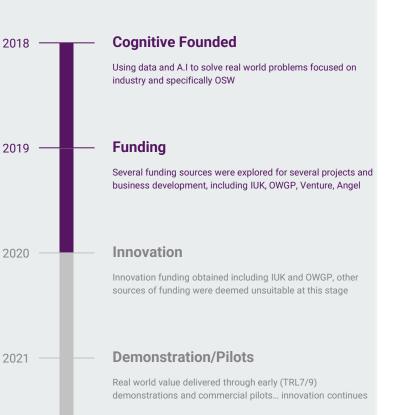
2019: Several Patents Granted for ACM technology **2021:** MSO Technology Becomes a Flagship Product at Uniper

E.ON Undergraduate 2007 Developed automation in IIOT data M&D and then through a final year project looking at vibration invented a machine learning solution for Advanced Pattern Recognition which became ACM **Global Competition** 2012 ACM was pitted against the world leader in APR **Uniper Formed** 2016 E.ON split into E.ON and Uniper Left Uniper 2018 To start a new company



The Cognitive Founders:

2018: Co-Founded Cognitive
2018: Market Analysis and Stakeholder Engagement
2019: Invented Cloud Historian Technology
2019: Invented Next Generation Advanced Pattern Recognition Technology
2019: Obtained OWGP Funding for New Technology WAVES
2019: Obtained IUK Funding for Wind AI
2020: Invented WAVES
2020: Invented Next Generation Wind Performance Technology, Wind AI
2020: Onboarded first WAVES Customer
2020: Obtained OWGP Funding for New Technology WAVES 2.0
2021: Started Commercial Pilots WAVES 2.0
2021: Started Commercial Pilots Wind AI
2021: Obtained IUK Funding for New Technology APR2.0/AI Analyst
2022: Patent Granted for Next Generation Wind Performance Technology



We:

- Learn about problems from the bottom up
- Invest to increase our own potential
- Know that anything can provide an opportunity for innovation
- Realise that not every innovation has a practicable business model
- Realise that some problems are transient
- Have tenacity and patience
- Do the hard work at the right times
- Focus on real-world live demonstration
- Always build a multi-tier value proposition
- Obtain support early and continuously
- Work with the right people at the right moments
- Have a business model and a strategy
- Understand the innovation to BAU process (it's long... build into the model)
- Use investment
- Use marketing
- Use luck/probability/risk appropriately
- Understand our tech tree
- Are fast when it matters
- Iterate





Ty Burridge-Oakland



Andrew Macdonald Programme Director Offshore Wind Growth Partnership



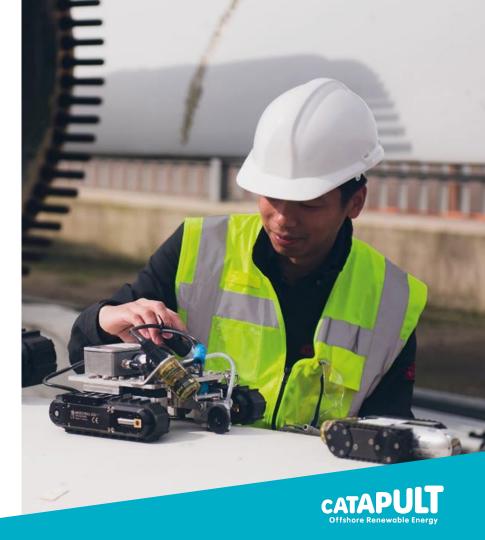
Enabling Innovation and Supply Chain Growth

Andy Macdonald Director, Offshore Wind Development and Operations 8th March 2022



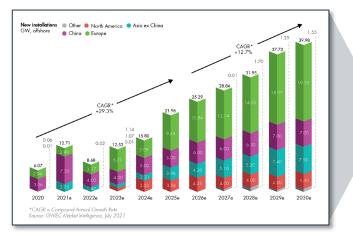
AGENDA

- Growth of the Offshore Wind Supply Chain
- Enabling company growth
- Launch Academy
- Fit 4 Offshore Renewables (F4OR)
- Offshore Wind Growth Partnership

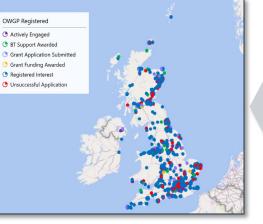




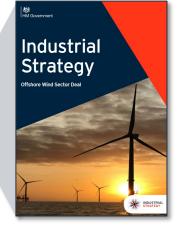
Growth of the Offshore Wind Supply Chain



Market Pull



Supply Chain Growth

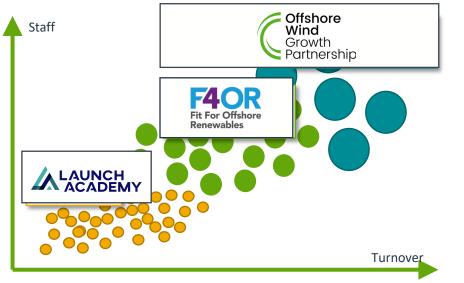


Regulatory Push

- To maximise supply chain growth the UK needs:
- Start-ups and Scale-ups
- 2 New market entrants
- Increased competitiveness



Enabling company growth



Factor	Requirements for growth	Enabler
People	Skills, training and leadership	Investor in People Skills Development Scotland OWGP
Market	Analysis and insights, market intelligence	ORE Catapult/OWGP SE/HIE
Product	Innovation, test and validation	ORE Catapult
Finance	Investment, cashflow, warranty, bonds	Grants (IUK, OWGP) Export (UKEF) VCs/Angels/Crowd/ Banks

Different requirements at each stage but always underpinned by **ambitious leadership**, **market need** and **cost effective solution**.



Start-ups and Scale-ups



- ORE Catapult's Flagship Technology Accelerator Programme
- Driven by challenges or themes from industry sponsors
- Short-listed finalists attend a Pitch Event with a panel of industry experts from the sponsors
- Winning cohort of 10 companies
- 9 months of support provided
 - Technology development and business case analysis expertise from ORE Catapult
 - Pro-bono support from professional services specialists (legal, accountancy, banking, IP)
 - Business growth expertise from leading delivery partners (sales, marketing, investor readiness, story-telling)





Improving Competitiveness

To increase the **competence**, **capacity** and **competitiveness** of the UK offshore renewable energy supply chain

- Identifies high potential supply chain organisations, with a strategic interest in the Offshore Wind industry;
- Addresses barriers to entry for UK supply chain companies, and increasing UK content by providing sector specific support, underpinned by business excellence
- Help companies **build capability**, **know how to apply it to win business**, and support **sustained continuous improvement**

Strand 1 – Business Excellence	Strand 2 – Sector Specific
People	Sector Knowledge
Strategy and Leadership;	Cost Reduction and Competitiveness
Process and Operations	Capacity and Sector Specific HSE
Design and Project Delivery	Technical Risk Management
Health, Safety and Environment	Commercial Risk Management
Quality	
	People Strategy and Leadership; Process and Operations Design and Project Delivery Health, Safety and Environment



Industry Advisory Group



Offshore Wind Growth Partnership

OWGP is a **£100 million programme** to accelerate growth and develop a stronger UK supply chain in offshore wind.

Grant Funding

to develop new products and services and build capacity.

Business Transformation

programmes with tailored support to increase competitiveness and efficiency.



- Innovation Grants (up to £100k)
- Development Grants (up to £1m)
- Wind Expert Support Toolkit
- (WEST)
- F40R
- Sharing in Growth

Funded by







CONTACT US

Email us: info@ore.catapult.org.uk Visit us: ore.catapult.org.uk

Engage with us:

GLASGOW BLYTH LEVENMOUTH GRIMSBY ABERDEEN CHINA LOWESTOFT PEMBROKESHIRE **CORNWALL**



Sian Lloyd Rees UK Managing Director, Aker Offshore Wind

Philip Taylor

Managing Director, Pict Offshore

Carol Sheath

Engineering Programme Manager, Renewable Parts

Ty Burridge-Oakland

Co-Founder Director of Product Development, Cognitive Business

Andrew Macdonald

Programme Director, Offshore Wind Growth Partnership

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Making the most of the project pipeline

AkerSolutions

Joanne Allday Strategy and Business Development Manager Port of Cromarty Firth

AkerSolutions

Jason Brown UK Head of Renewables Aker Solutions



Supply Chain Opportunities for the UK

Glasgow, March 8th, 2022 Jason Brown, SVP – Head of UK Renewables

Complementary supplier capabilities - stronger offering

Creating a leading **execution partner** to deliver low-carbon oil and gas and renewables projects

KV/ERNER

A leading provider of engineering, procurement and construction (EPC) services to the energy industry

AkerSolutions

A leading global provider of products, front-end, engineering, project management and services to the energy industry



Ambitious Energy Transition Targets

Renewables and **Low Carbon** to Become our Biggest Business in 2030

Renewables and Low Carbon¹

J.G.-

1/3 of revenues by 20252/3 of revenues by 2030

Reducing Emissions 50% by 2030² Net zero by 2050



We solve global energy challenges for **future** generations

AkerSolutions

Status I Strong tailwind with several recent awards



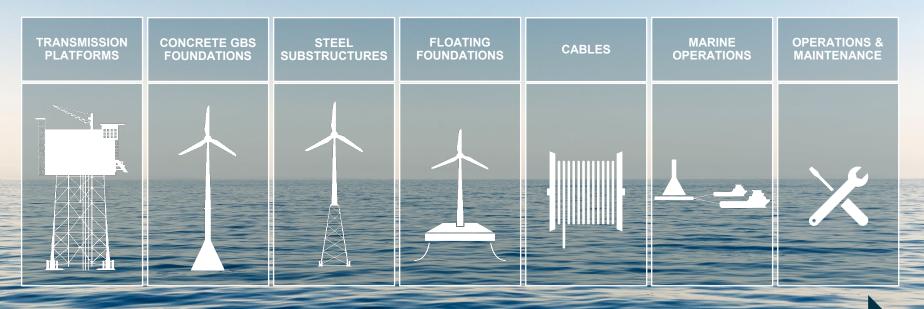








The offshore wind value chain will required collaboration



UK Supply Chain Integration

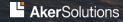
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Challenges facing the Industry

Supply Chain Collaboration

Enabling Innovation

Government Policy





ScotWind - size of the opportunity



1660

Total number of Turbines (estimated - based on 15MW turbines)

41

Transmission Substations (estimated - based on area configuration) Provide power to 66% of UK Homes 25GW of electricity produced by ScotWind (estimated - based on 1GW = 750,000 homes).

2.75 Billion LED's

25GW of electricity produced by ScotWind (estimated – based on an A19 lamp producing 91 lumens per watt).

Glasgow to Singapore 11,200 KM of cable required for ScotWind (estimated – based on combination of export & array).

9

Convertor Substations

(estimated - based on area configuration)

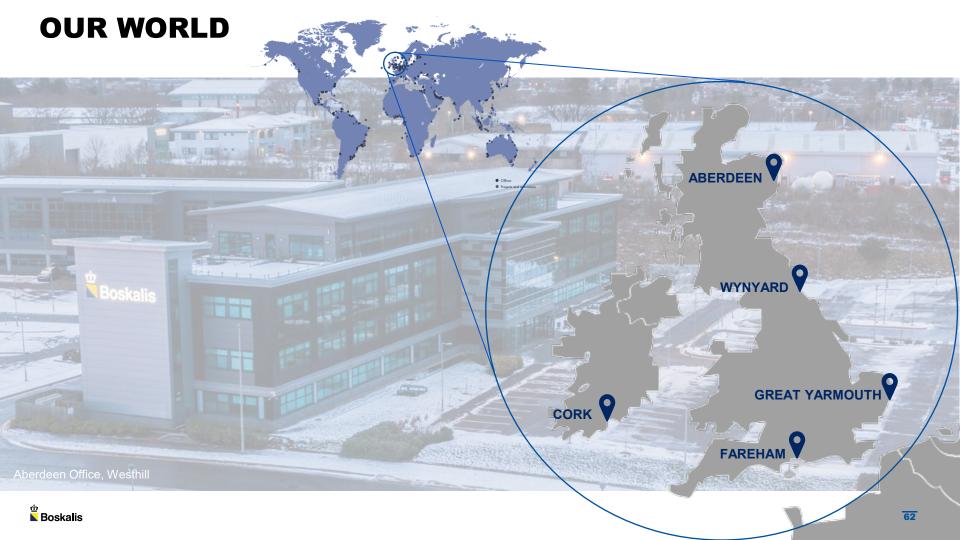
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AkerSolutions

Stuart Keeble Commercial Manager Boskalis

CREATING NEW HORIZONS IN SCOTLAND

STUART KEEBLE COMMERCIAL MANAGER SCOTTISH RENEWABLES OFFSHORE CONFERENCE MARCH 2022



ENABLING THE ENERGY TRANSITION WITH OUR SUPPLY CHAIN, WE'RE GETTING READY TO MOVE RENEWABLES INTO DEEPER WATER

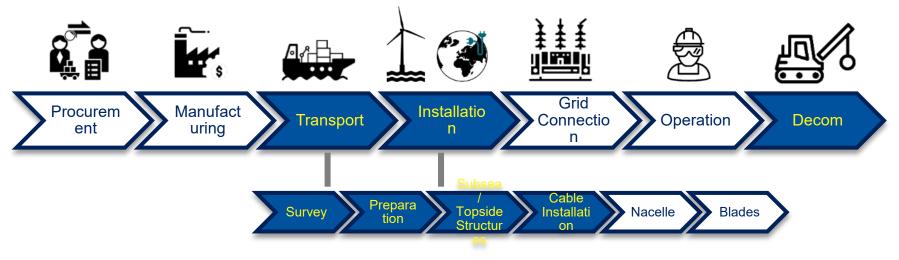
BOSKALIS OFFSHORE WIND LANDSCAPE



A FUNNEL FOR OPPORTUNITY



BEING A PART OF THE WIDER VALUE CHAIN PEOPLE, INFRASTRUCTURE, EQUIPMENT





•	Consulting & Engineering
<u>70</u>	Administration
	Education & Training
Supporting	Policy & Permitting
Functions	Financing
	Research & Development

WORKING WITH BOSKALIS OUR QUALITY PROCESS

Boskalis has established a standard and transparent prequalification process that suppliers need to complete prior to doing business with Boskalis.

PROCESS STEP	START OF PRE- QUALIFICATION	CHECK APPLICATION	SOURCE NECESSARY INFORMATION FROM SUPPLIER	PQ1 REGISTRATION	PQ2 PREQUALIFICATION	PQ3 PROJECT QUALIFICATION/AUDIT
WHO	(Project) Buyer	Procurement Manager	PQ Administrator	PQ Administrator	Assessors/PQ Administrator	(Project) Buyer
WHAT	 Checks if Supplier is already prequalified Fills in Supplier Application Form Determines PQ level 	 Checks PQ level Consults with (Project) Buyer if needed 	✓ Invites and expedites Supplier to upload necessary information into Supplier Management System	 Basic registration and financial information Signed Boskalis Supplier Code of Conduct 	 Basic registration and financial information Signed Boskalis Supplier Code of Conduct Supplier personalized questionnaire with subjects: Capacity/ Supply Chain Management, Quality and Finance 	 Basic registration and financial information Signed Boskalis Supplier Code of Conduct Supplier personalized questionnaire with subjects: Capacity/Supply Chain Management, Quality and Finance Audit report

STANDING OUT

KNOW YOUR CUSTOMER

BE DIRECT

- Personal Contact (LinkedIn / Email)
- Connect and follow up with a call / meeting
- Who would you like to talk to about it?

BE CLEAR

- How can we work together?
 - Is the product / service new or differentiated?

BE PERSISTENT

- Pre-qualify
 - Follow up with any new updates



2

3

PLEASED TO MEET YOU





Stuart Keeble Commercial Manager Subsea Cables Stuart.keeble@boskalis.com



Malou Wagner Commercial Manager Offshore Heavy Lift Malou.wagner@boskalis.com

AkerSolutions

Roy van Loveren Area Manager UK and Ireland Van Oord Offshore Wind





Doing business with Van Oord / MPI Offshore

Ci la

Conference

Offshore Wind

Glasgow March 2022



Roy van Loveren

Area Manager IIK and Ireland



UK Head Office in Stokesley (North Yorkshire)

20 years experience in offshore wind (North Hoyle 2003 to Sofia 2024)

EPCI Contractor based in NE England

Contracting, procurement, preparations and execution:

Offshore Wind Farm Construction for UK and Ireland

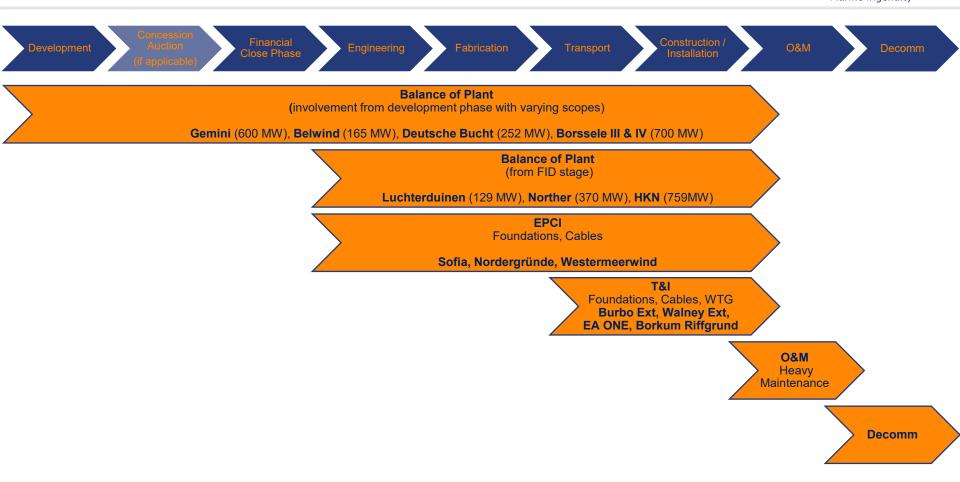




- Offshore Wind Sector Deal
- UK content
- Strengthened international wind organisation
- Clusters

Van Oord Offshore Wind in the Value Chain





Opportunities to work with Van Oord / MPI



Projects in hand up to 2024

Opportunities / pipeline (UK & Ireland) up to 2030

Sofia Offshore Wind Farm (FOU & IAC) - 2024

Baltic Eagle (FOU & IAC) - 2023

St. Brieuc (FOU) – 2021/2022

Hollandse Kust Noord (BOP) – 2022/2023

Greater Changua (IAC & EXC) – 2021/2022

Taranto (FOU) – 2021/2022

Various OWF **O&M** (heavy maintenance) UK & Europe – 2021-2024

Allocation Round 4 - 2022

Scotwind (bottom fixed & floating) - 2022

Offshore Wind Leasing Round 4 UK - 2021

RESS 2 Auction Ireland - 2022

How to engage with us?



Register at our supplier portal at vanoord.com

Oord	む	Expertise	Û	Updates	റ	Careers	Ø	About us	0	Contact	×
		Land reclamation		All updates		Working at Van Oord		Van Oord in brief	>	Our offices	
		Maritime infrastructure		Projects		Vacancies		Activities	>	Partners and suppliers	
		Coastal protection		Sustainability		Traineeship		Key projects	>	Press and media	
		Offshore wind		Publications		Internship & graduation		Equipment			
		Offshore infrastructure				Ingenious people		Sustainability programme			
		Dutch infrastructure						Safety			

- \rightarrow vanoord.com
- \rightarrow Contact

Van

- \rightarrow Partners and suppliers
- \rightarrow Information and registration for suppliers
- \rightarrow Register as a new supplier





Conclusions







Doing business with Van Oord / MPI Offshore

- Almost 20 years in UK offshore wind
- Solid pipeline OW installation and heavy maintenance
- Firmly embedded in the UK
- Offshore Wind Sector Deal
- Regional approach in a global company
- Competitive supply chain in a competitive market













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Contact us:

General:

10221

O&M:

Recruitment:

Procurement / Supply Chain UK: Procurement / Supply Chain Global: Casper Canton (casper.canton@vanoord.com) Ben Robinson (ben.robinson@mpi-offshe

Let's stay in touch!

roy.vanloveren@vanoord.com

SESSION SPONSOR

AkerSolutions

Stuart Thornton Business Development Manager Seaway7





Stuart Thornton| 8th March 2022



Seaway 7

Subsea 7

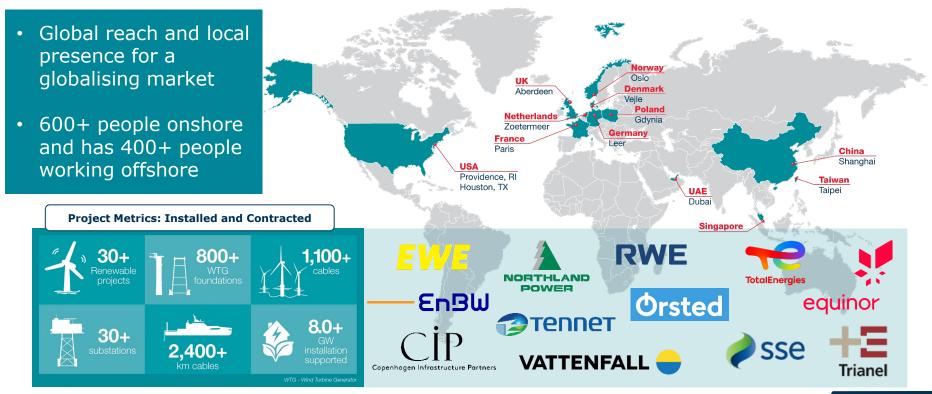
- A listed, pure-play renewables company focused on bottom-fixed offshore wind
- Our vision is to lead the way in the delivery of bottom-fixed offshore wind farm solutions, contributing to an efficient and sustainable energy supply for the future.
- First day of trading: 1 October 2021
- Subsea 7 own 72% and OHT 28%
- Market-leading combination of assets, capabilities and track record

- Floating wind
- Offshore facility electrification
- CCUS
- Hydrogen





Seaway 7





Fast moving Market



Hywind Scotland (2017)

- 30MW
- World's first floating offshore wind farm

Beatrice (2018)

- 588MW powering 450,000 homes
 - 84 wind turbine foundations
 - 120,000+ tonnes of steel
 - 91 inner array cables (165 km)
 - T&I of 2 substations

Seagreen - under construction

- 1.1GW powering 1.6 million homes
 - 114 wind turbine foundations
 - 240,000+ tonnes of steel
 - 116 inner array cables

www.seaway7.com



Supply Chain Challenges

• Fast growing market x Supply Chain catching up

• Large scale orders x supplier's capacity

• Technology development x security





Seaway 7 impact on supply chain

- Well established supply chain supporting us. Our supply chain database has more than 1,300 approved companies based in the UK
- We give local companies the opportunity to tender for work
- Beatrice and Seagreen have enabled us to support Scottish companies to successfully transition into the renewables market
- Too many to name all:



87



Beatrice - Examples from the Scottish Supply Chain

Atkins (Glasgow) - Structure design Bifab (Burntisland, Methil, Arnish) - Structure fabrication Foundocean (Livingstone) - Grouting system Port of Cromarty Firth (Invergordon) - Installation support and marine base Ecosse Subsea Systems (Banchory) - Boulder clearance Fathom Systems (Portlethen) - Electrical distribution equipment Scottish Fisherman's Federation (Aberdeen) - Guard vessels GAC Services (Grangemouth, Aberdeen) - Shipping and logistics support Malin (Renfrew) - Internal platforms and ladders Bauer Renewables UK (Stirling) - Relief drilling Green Marine (Stromness) - CTV services Leask Marine (Kirkwall) - Multicat services Delta Marine (Lerwick) - A2N deployment

Global Energy Group (Nigg) - Commissioning services - Wind turbine marshalling facilities Canyon (Aberdeen) Array cable trenching Monitor Systems (Aberdeen) - SCADA switch panels Signs Express (Grangemouth) - Signage Edgen Murray (Edinburgh, Bellshill) - Primary steel, TP Plates, Materials SPS (Dundee) - Grout pipe Hvdrasun (Aberdeen) - Flexible hoses Regal Rubber (Lochgelly) - J-tube neoprène lining Eblast (Inverurie) - Painting jacket tubulars Gray Fabrication (Cupar) - J-tube guides NHV Helicopters (Aberdeen) - Helicopter support operations Windhoist (Irvine and Stirling) Wind turbine support CS Wind (Machrihanish) - Wind turbine towers SG Access (Edinburgh) - Rope access services





Seagreen - Examples from the Scottish Supply Chain

Balmoral Comtec Ltd (Aberdeen)

- Cable Protection System

Dales Engineering (Peterhead)

- Grillage & Seafastening
- Mock TP
- Cargo Barge Outfitting
 Cable Solutions Worldwide Limited (Inverurie)
- TP Low Voltage Interface Cable Supply Ternan Energy
- Independent Foundation Review and Verification VOE Marine Engineering Ltd (Shetland)
- Inter Array Cable Engineering Support Scottish Fisherman's Federation (Aberdeen)
- Guard vessels
- Liaison Officers

Briggs Marine Contractors (Burntisland)

Navigation Buoys (Refurb, rental, deployment and recovery)

R&M Engineering (Huntly)

• FLT Guides

JGC Engineering and Technical Services (Caithness)

- Short Haul Grillage Access Platforms
 Chemserve Ltd (Livingstone)
- Operations Rep Grout
- Foundocean (Livingstone)
- Grout Services

Hiretech Limited (Aberdeen)

Generator Hirè

Global Energy Group (Nigg)

- Provision of Marshalling Yard
- Grillage & Seafastening
- Cargo Barge Outfitting
- Outreach Offshore
- Davit Crane Inspection and Commissioning
- Monitor Systems (Aberdeen)
- Fibre Optic Cabinets

Lofthus Signs Ltd (Aberdeen)

Signage

James Aiken (Aberdeen)

- Paddling pool assemblies
- OEG UK Offshore Ltd (Kintore)
- Contrainer Hire

Northeast Telecommunication Ltd (Aberdeen)

- VHF Radio Hire
- Montrose Port Authority (Montrose)
- Office and Storage Facilities

Clarksons Port Services Limited (Aberdeen)

Port Agent

ATR Lifting Solutions (Aberdeen)

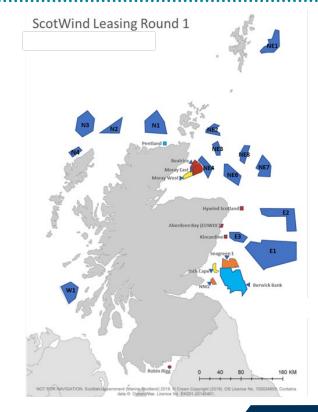
- SLR // anchor points certification Sulmara Subsea Ltd
- Survey Services Bolder Clearance AMOS Europe (Insch)
- Marine Gear (CB Outfitting Scope) Marinetronix (Aberdeen)
- Reflective tube targets



Future Opportunities

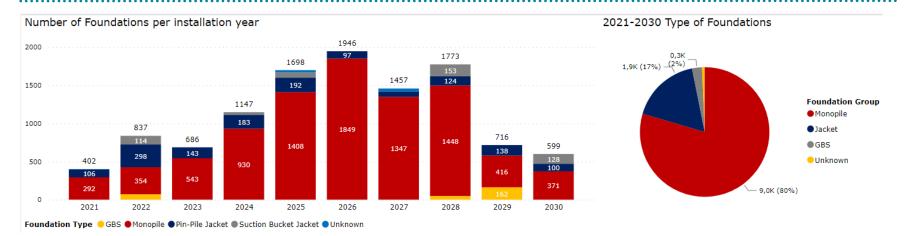
- Great local opportunities coming up through existing projects, Scotwind and energy transition
- Floating Wind is well suited to take advantage of the marine and logistics expertise embedded within the Oil & Gas business
- Opportunity to grow teams and "export" our knowhow as the industry expands globally







Seaway 7 ASA Closed to 1700 foundations to be installed in 2025 alone



- Datasource is C365
- 80% of the foundations are Monopiles
- Boom of the installation starting in 2025
- Topdown not added in 2029 & 2030

© Seaway 7 - 2021

THANK YOU

seaway⁷

Joanne Allday

Strategy and Business Development Manager, Port of Cromarty Firth

Jason Brown

UK Head of Renewables, Aker Solutions

Stuart Keeble

Commercial Manager, Boskalis

Roy van Loveren

Area Manager UK and Ireland, Van Oord Offshore Wind

Stuart Thornton

Business Development Manager, Seaway7

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Growing a vibrant new offshore sector for Scotland











Morag Watson Director of Policy Scottish Renewables



Euan Smith Partner Eversheds Sutherland



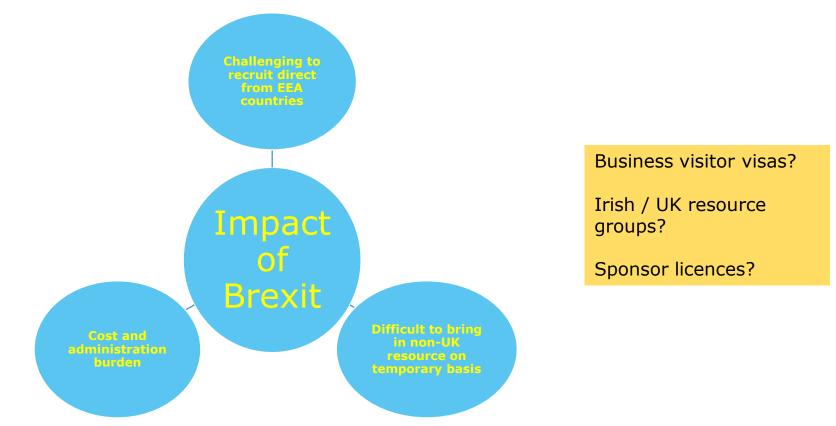
Scottish Renewables Offshore Wind Conference

Growing a vibrant new offshore sector for Scotland

Euan Smith

Partner

Short-term resourcing challenges



Short-term resourcing challenges



Multi-skilled employees?

Self-employed contractors grouping together?

Skills passports?

99

eversheds-sutherland.com

This information pack is intended as a guide only. Whilst the information it contains is believed to be correct, it is not a substitute for appropriate legal advice. Eversheds Sutherland (International) LLP can take no responsibility for actions taken based on the information contained in this pack.

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Rachael Mills Pathways to Growth Coordination Group Manager OWIC

Pathways to Growth (P2G)



P2G update Scottish Renewables Conference 2022

"Growing a Vibrant Offshore Wind Sector for Scotland"

8 March 2022; 15:15 – 16:30

What is P2G?



Sector Deal workstream focusing on environment and consenting challenges.

Collaborative working.

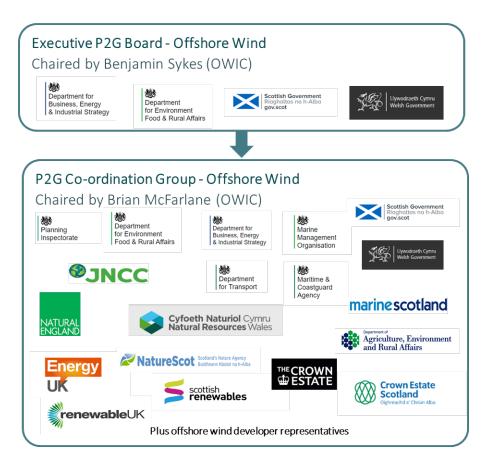
OffshoreWind IndustryCouncil



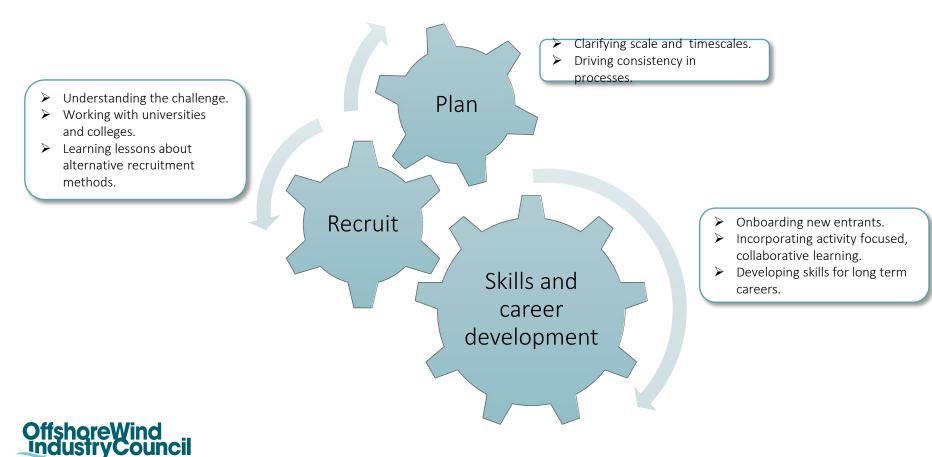
10 issues prioritised.



Increasing resourcing is one of the top 3 issues.



Navigating the resourcing challenge in P2G



Background only



Pathways to Growth: Prioritised Barriers

High priority		Medium priority				
1. Derogations	Coordinated approach by Gov., Regulators, NGOs and developers to agree approach to derogations (alternatives, IROPI, compensation)	8. Biodiversity	To consider the opportunities for mutual support across offshore wind and protection/restoration of marine biodiversity			
2. Resources	Solutions to increase resource in consenting across JNCC, Natural England, MMO, NatureScot, Marine Scotland, Natural Resources Wales, Marine Licencing Team Wales etc	9. Future Policy	Ensure overarching policy is conducive to OSW by informing existing and future policy			
3. Cumulative Impact Assessment: seabirds	Improve the accuracy/ reduce uncertainty of estimating cumulative impacts on seabirds during the construction and operational stages	10. Proportionat e EIA	Review of EIA process to focus on significant impacts only to ensure that EIA is more proportionate			
4. Underwater noise guidance	Resolution to issues on guidance on underwater noise management within harbour porpoise Special Areas of Conservation					
5. Strategic approach to data collection	Strategic studies for baseline characterisation and post- consent monitoring with clear emphasis on improving the evidence base as a sector, ultimately leading to better applications					
6. Adoption of new research	Ensuring learning, evidence and new research is quickly adopted by decision makers					
7. Marine Spatial Planning	Marine spatial prioritisation with emphasis on clear decisions on allocation of use of sea space, and informing strategic considerations in relation to all users of marine space					

Isla Robb Co-Founder Full Circle 21

full circle 21

Once we have an evenly diverse
workforce,
the circle will be complete, it will
be full.

Our work will be done."

Why?

Currently....

26,093 UK Offshore Wind Workforce

- 16% of women in the workforce
- 5-6% ethnic minorities in the workforce



Future Forecast.... 69,848 UK Offshore Wind Workforce In 2026...!



But why bother?

A diverse workforce which features people from a variety of cultures, backgrounds, abilities and lifestyles <u>benefits</u> <u>everyone</u>

Access to a wider range of talent means greater chance of finding the **right person** for each role.

A diverse workforce has been shown to improve productivity, enabling companies to be more **financially successful**.

Reinforcing a positive culture, means employees are more likely to stay, therefore **reducing staff turnover**.

Diverse teams solve problems quicker.

full circle 21

Source - BreatheHR

But How?















Thank you www.fullcircle21.com

info@fullcircle21.com

Or LinkedIn Group – Full Circle 21

isla@ec20.uk

Thomas Docherty Head of Strategic Engagement, Scotland and Northern England ECITB

Dr William Beuckelaers Founder OffshoreWind4Kids

OffshoreWind4Kids intro



OffshoreWind4Kids vzw est. 2021

- Goals:
 - Inspire kids for the upcoming technical and engineering challenges in the energy transition
 - Reach as many **girls** as **boys**
 - Stimulate innovation in offshore wind
 - Spread **awareness** to the general public
- Approach:
 - Hands-on **school workshops** and **demo days** where kids can install their first offshore wind turbine
 - Floating wind university challenge



Quotes



Research shows that influencing education and career decisions must start young at 6-7 years old to be effective. That's a long lead time. William and OffshoreWind4Kids fill the essential need to connect with these kids in a meaningful way and we are delighted to support them to the good of the industry in the long term.

Tom Hopkinson, CEO, Taylor Hopkinson

Girls represent 17% of the students in civil engineering. Our faculty and our university, but also the business community, believe that this is far too little.

KULeuven (Belgium), Faculty of Engineering Sciences

Demo days / school workshops



Kids can install a variety of support structures:

- Bottom-fixed:
 - Monopile
 - Jacket (both with pin piles and suction buckets)
 - Gravity base
- Floating
 - Spar buoy
 - Tension Leg Platform
 - Semi-sub
 - Tetra-spar

Check our instagram for more photos @OffshoreWind4Kids







Scotland trip

Demo days:

- Supported by Taylor Hopkinson
 - Ayr 4 June
 - Edinburgh 5 June
- Supported by Fred Olsen Seawind
 - Orkney islands 8 & 9 June
 - Nigg 11 June
 - Aberdeen 12 June

Signups will go live in May - join our mailing list so you don't miss it!

Go to: OffshoreWind4Kids.com

K Fred. Olsen Seawind





Floating wind university challenge



International student competition to **design** and **build** the best floating wind support structure

- **10 abstracts** received:
 - Belgium (5)
 - Germany
 - NL+DK
 - USA
 - UAE (2)
- **13 May** Competition event at Deltares, The Netherlands

Check:

OffshoreWind4Kids.com/university-challenge



In partnership with



Morag Watson

Director of Policy, Scottish Renewables

Euan Smith Partner, Eversheds Sutherland

Rachael Mills

Pathways to Growth Coordination Group Manager, OWIC

Isla Robb Co-Founder, Full Circle 21

Thomas Docherty

Head of Strategic Engagement, Scotland and Northern England, ECITB

Dr William Beuckelaers

Founder, OffshoreWind4Kids

Join the conversation #SROFFSHORE22 @ScotRenew

in 🗑

ORGANISED BY







Emma Harrick Energy Transition and Supply Chain Manager Scottish Renewables



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K Fred. Olsen Seawind

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WITH THANKS TO OUR SUPPORTERS















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OFFSHORE WIND CONFERENCE 8 & 9 MARCH 2022 GLASGOW



SHEPHERD+ WEDDERBURN

ScotWind: the next generation of projects



SHEPHERD WEDDERBURN

Stephen Dunne Editor reNEWS



Céline Combé

SHEPHERD+ WEDDERBURN

Manager, Project Director Offshore Wind, EnBW AG

Mark Baxter

Head of Development UK, Ocean Winds

Mike Hay

Commercial Director, RIDG

Mandy Gloyer

New UK Sites Manager, ScottishPower Renewables

Vicky O'Connor

Technical Manager, Development – Europe, Northland Power



~**60**km off the coast from Aberdeen



Generating capacity ~**2.9**GW







60km²



Morven

SHETLAND



ABERDEEN 🤇

SCOTLAND

EDINBUF

Powering Scotland's energy Transition



A Scotlish champion

EnBW and bp see many opportunities to deepen our commitment to Scotland's people and industry.

We believe our proposals can assist a just transition and support Scotland as a global energy leader.

Education and skills in Scotland

We plan to expand current support for Scottish schools, colleges, universities and apprentices by investing in a new offshore wind apprenticeship programme, and establish an academic centre of offshore wind R&D and expertise at a Scottish university and a new skills capability accelerator developed by energy consultancy Xodus.

Community fund

We plan to set up a community investment fund of £200,000 per year to support sustainability and net zero goals across Scotland.

Supporting Scotland's Woodlands

We plan to invest an additional £10m in Future Woodland Scotland, to expand native woodland in rural and urban areas, including £1m to every city in Scotland.

Accelerating EVs in Scotland

bp plans to grow its EV charging network in Scotland by 3,500 charge points by 2030, resulting in skilled jobs and investing over £50m.

Ships built in Scotland

EnBW and bp plan to build vessels for its UK wind farms in Scotland. Two large Service Operating Vessels and two Crew Transfer Vessels.

Green hydrogen

Committing to produce green hydrogen, bp is supporting the decarbonisation of public and heavy-duty transportation in Aberdeen and Edinburgh by providing hydrogen refuelling hubs as well as the potential to export hydrogen from Scotland in the future.

Aberdeen

Edinburgh

Glasgow

fund

Incubator

Investing in Scottish low carbon

innovation and entrepreneurship

through our flagship incubator fund

guided by bp launchpad and ventures.



Global offshore wind operations centre of excellence

bp plans to establish its global offshore wind O&M Centre of Excellence in Aberdeen. Taking advantage of the highly skilled workforce and CoE location, EnBW and bp plan to locate the Remote Operations Centre for both ScotWind and UK Round 4 projects here.

Portinvestments

Investing in Scottish ports, including further investment of the regeneration of the Port of Leith, enabling ports to modernize and support the offshore wind industry develop sites for marshalling and operations.

low carbon marine operations

We are working with others to explore viable routes to net zero operations, from battery powered hybrid vessels to hydrogen.



Céline Combé

SHEPHERD+ WEDDERBURN

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New UK Sites Manager, ScottishPower Renewables

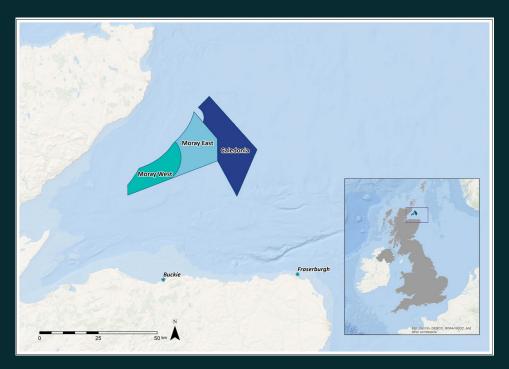
Vicky O'Connor

Technical Manager, Development – Europe, Northland Power



CALEDONA Offshore Wind Farm

Mark Baxter





Developing Low-Carbon Generation Supplying Low-Cost Power





CALEDONA Offshore Wind Farm



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The West of Orkney Windfarm

Scottish Renewables 9th March 2022

The Project Partners



OWPL brings together a unique combination of financial, technical and project development capability, with deep Scottish roots, a commitment to delivery, and a clear vision for ScotWind



Green Investment Group – part of Macquarie, the worlds largest infrastructure investor, with ownership of nearly 50% of UK's operational offshore wind farms

TotalEnergies – one of the largest offshore operators on UK continental shelf. Targeting 35GW of renewables by 2025 and 100GW by 2030

RIDG – Scottish offshore wind project developer set up to deliver high value projects alongside strategic partners

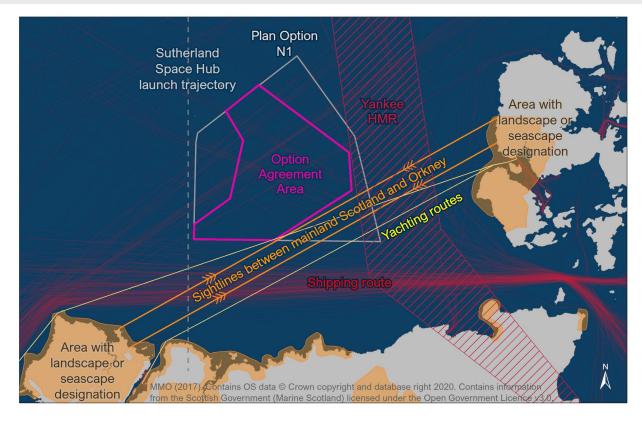


A clear vision for the North of Scotland



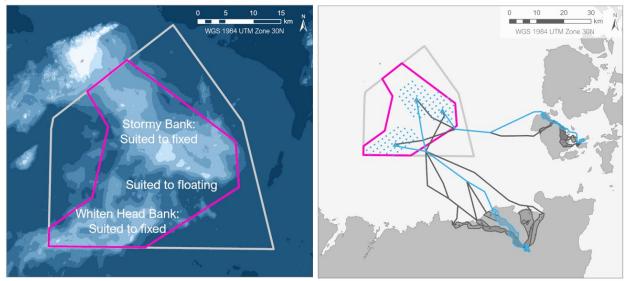


The West of Orkney Windfarm





The West of Orkney Windfarm

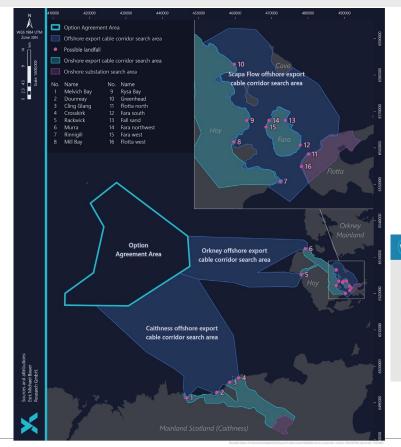


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The West of Orkney Windfarm



www.westoforkney.com

West of Orkney Windfarm

THE PROJECT SUPPLY CHAIN NEWS EVENTS CONTACT US

SCOPING REPORT

We have submitted an Environmental Impact Assessment (EIA) Scoping Report to Marine Scotland, Orkney Islands Council and The Highland Council detailing all of the studies and surveys we will undertake in the years ahead.

The full report can be downloaded h





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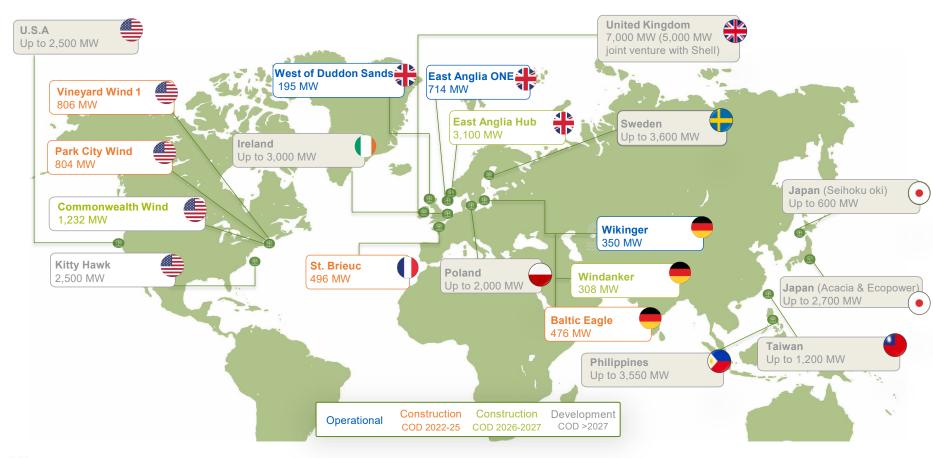
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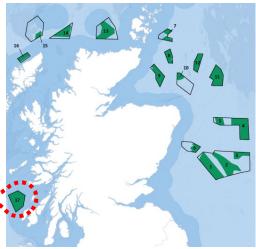


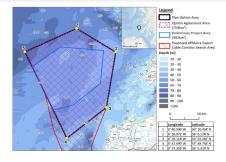




Project Characteristics

I	Technology	Fixed-bottom
T	Capacity	2,000MW
I	Site Area	754 km ²
I	Centre Point to Shore	27 km
T	Mean Depth	55m (Range 25-112m)
I	Grid connection	Hunterston (April 2028)





Unit	Value	
MWhr/yr	8,845,960	
%	50.6	
	MWhr/yr	<u>MWhr/yr</u> 8,845,960







- Development activities underway \geq
- ➢ Agreements in place with >30 companies including ports
- > Supplier portal open
- Supply chain stimulus funding
- Engaging with local communities



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Scotwind Projects N2 and N4

NORTHLAND POWER

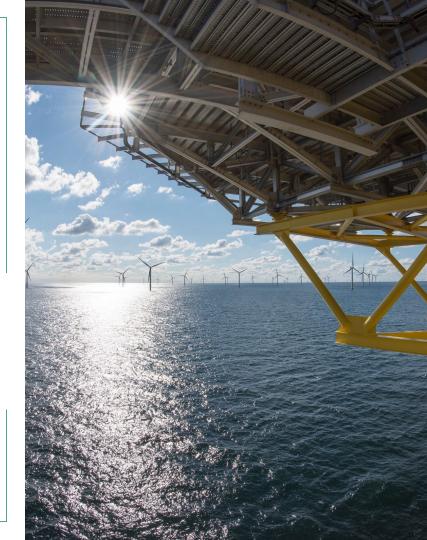
Scottish Renewables Offshore Conference 9 March 2022









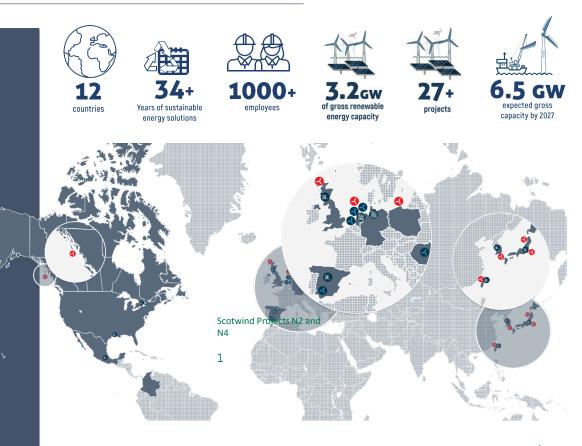


Northland's Global Reach – Offshore Wind Success



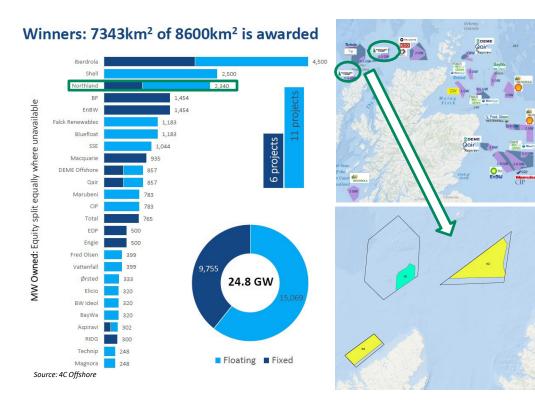
Today, Northland is actively developing projects and new offshore wind opportunities in Europe, Asia and Canada, including:

- $\boldsymbol{\times}$
- 2,340 MW N2 (floating) and N4 (fixed) sites in Scotland
- 1,300 MW offshore wind development in Germany (Nordsee Two & Three & Delta)
- 1,200 MW in mature development in Poland (Baltic Power)
- 400 MW partnership in Canada (Hecate Straight)
- 1,044 MW secured in Taiwan under FIT and auction...
 (Hai Long)
- 1,800 MW early-stage opportunities under upcoming Taiwanese zonal round
- 1,000 MW early-stage opportunity in South Korea (Dado Ocean)
- 600 MW partnership in Japan (Shizen Energy)



Northland Approach to Scotwind





- Won both bids submitted
 - Northland awarded 2.34GW out of 25GW
 - 2 out of 17 sites awarded
 - 9.4% of capacity awarded
 - 3rd highest total capacity awarded
 - One of only 3 groups with fixed and floating sites
 - Bid evaluation structure played to NPI's experience and long-term owner approach, being based on
 - The applicant's demonstrable prior offshore wind experience and capability to deliver the project
 - The applicant's best use of the seabed, to the wider benefit of Scottish decarbonisation, and commitment to Scottish supply chain development
 - · Our project N2 and N4 are aligned to wider Scottish drivers including;
 - Net Zero by 2045
 - Decarbonisation of heat and transport
 - · Alleviating fuel poverty
 - Increased local jobs, preventing depopulation of rural areas
 - Energy transition of jobs from oil and gas
 - The selected sites offer a combination of

Scotwind Projects N2 and N4

- A mixture of waterdepths, allowing for both fixed and floating foundation technologies (no hybrid sites)
- Strong wind resource, providing above average capacity factors and higher yield but also challenging metocean conditions
- Mixture of near shore and further from shore sites



Northland Power Contact Us



Northland Power

77 Renfrew Street, 10th Floor, Savoy Tower, Glasgow, G2 3BZ

Head Office: 30 St. Clair Avenue West, 12th Floor Toronto, ON Canada M4V 3A1



Email: scotland@northlandpower.com Website: northlandpower.com



SHEPHERD+ WEDDERBURN

ScotWind: the next generation of projects

SESSION SPONSOR



Richard Dibley Managing Director, Falck Renewables

Melissa Read UK Business Manager – Offshore Wind, Shell

Lindsay Smith

Offshore Development Manager, Fred. Olsen Seawind

Alasdair MacLeod

Head of Renewables Development, BayWa r.e.

David Hinshelwood

Senior Project Manager Offshore Developments, SSE Renewables

Scottish Renewables Offshore Wind Conference 2022







A STRONG PARTNERSHIP FOR FLOATING OFFSHORE WIND

The consortium is well placed to deliver world-class floating offshore projects in Scotland

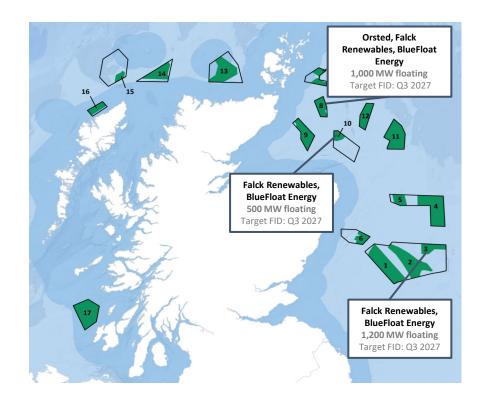


AN OVERVIEW OF OUR SUCCESSFUL BIDS

The two consortia were awarded a total of three sites (Plan Option NE3, NE6, E1)

Our Projects

- The Orsted, Falck Renewables and BlueFloat Energy consortium was awarded one site east of Caithness in Plan Option NE3.
- The Falck Renewables and BlueFloat Energy partnership was awarded two sites: a site north of Fraserburgh in Plan Option NE6 and a site east of Aberdeen in Plan Option E1.
- The three sites could accommodate a floating offshore wind capacity of 2.7 GW.





STRONG FOUNDATIONS FOR SUCCESS

Our skills, experience and resources can bring real benefits to Scotland's communities

Community

- We have over 15 years' experience working with local communities all over Scotland to share value from our developments.
- We are committed to bringing genuine community involvement and ownership into offshore wind development, e.g. community turbine
- We will work in collaboration with the industry Offshore Wind Community Fund to ensure offshore wind brings real benefits to Scotland's communities locally and nationally.

Supply chain

- We are fully committed to developing the local supply chain and creating jobs in Scotland.
- We will identify gaps in skills and capacity and work with local & national agencies to train and upskill the workforce in collaboration with skills experts such as Energy Skills Partnership (ESP)
- We are targeting concrete in our current floating foundation strategy due to the following:
 - It's easier to manufacture locally in Scotland and concrete lends itself to developing a significant local delivery network, including local sourcing of both raw materials and the workforce required, which would be straightforward and relatively quick to train.

Delivery

- Our projects are well thought through and in an advanced stage of planning – we are set up and ready to go
- Our team has the skills, experience and resources to deliver large scale floating projects.
- The project team is set up and various workstreams are well underway to ensure we are able to deliver on time.
- We are in **advanced discussions with ports** building on relationships formed prior to submission.



We look forward to delivering floating wind to Scotland





Orsted

BlueFloat

Falck









SESSION SPONSOR



Richard Dibley Managing Director, Falck Renewables

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Lindsay Smith

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Alasdair MacLeod

Head of Renewables Development, BayWa r.e.

David Hinshelwood

Senior Project Manager Offshore Developments, SSE Renewables



Fred. Olsen Seawind



Mara Mhòr Offshore Wind Farm

Scottish Renewables Offshore Wind Conference

March 2022

Mara Mhòr Offshore Wind Farm

Combining industry leading expertise



- 2021 established 50/50 partnership between Fred. Olsen Seawind and Vattenfall.
- Bringing together the skills and experience of two of Europe's leading renewable energy developers, and their ability to:
 - provide innovative solutions to the challenges of floating offshore wind
 - generate manufacturing and fabrication opportunities locally
 - increase long term sustainable jobs and value creation

A strong track record of delivering renewable energy projects and exemplary engagement with local supply chain and communities.

Fred. Olsen Renewables has developed, constructed, owned and operated renewable energy projects in Scotland for over 25 years with a current operating portfolio of over 530MW.

Vattenfall has an operational portfolio of 175MW in Scotland, including the 96.8MW Aberdeen Bay Offshore Wind Farm.

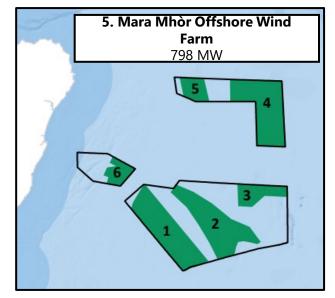


Together we can deliver a successful project that will support the transition to a fossil-free future and Scotland's net zero ambitions.

Mara Mhòr Offshore Wind Farm

Bringing forward unique approaches to innovation and Scottish content

- A 798 MW east coast floating offshore wind development.
- The project will deliver substantial supply chain opportunities, environmental and socio-economic benefits in Scotland.
- We are committed to raising the skillset of the Scottish offshore wind workforce for those at all levels and have established a Future Leaders Fund, totalling £200,000 over 20 years to provide sponsorship to students at the University of the Highlands and Islands.
- The partnership will continue to progress environmental studies, alongside embarking upon public consultation and the full EIA process.



Located in Plan Option E2 approximately 67km off the east coast of Scotland, northeast of Aberdeen.

Community • Collaboration • Innovation

VATTENFALL

Mobile Port Solution

Maximising and capitalising on Scotland's capabilities



We heard industry responses around the challenges in the deployment of commercial-scale floating offshore wind in Scotland and have utilised our strong maritime heritage and innovative approach to create a unique solution which focuses on the use of existing, 'ready to go' technology through the Fred. Olsen Windcarrier jack-up installation vessels.

We created our proposed offshore port concept, the **Mobile Port Solution (MPS)**, to address the key constraints facing the industry so that we could overcome them and move forward our supply chain work in Scotland.

Jack-up with heavy lift crane will integrate WTG to floater applying proven offshore wind methods and high safety requirements Delivery of tower section by deck carrier Towers will be assembled in full height on deck of jack-up/

Delivery of nacelles by deck carrier Nacelles will be lifted onto deck of jack-up

> Delivery of blades by deck carrier Blades will be lifted onto storage barge

Floater towed and secured against mooring dolphins

The Mobile Port Solution is design agnostic

SESSION SPONSOR



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Head of Renewables Development, BayWa r.e.

David Hinshelwood

Senior Project Manager Offshore Developments, SSE Renewables



FLOATING ENERGY ALLYANCE

A partnership between three leading European energy businesses







A leading offshore wind farm developer and operator

Renewable energy producer

33 onshore wind farms in operation in Belgium, France and Serbia (for a total of 275MW)

A portfolio of wind energy projects in development and construction

An experienced player in offshore wind in Belgium, Europe's fourth biggest offshore market:

Principal shareholder in Norther (370MW)

Active partner in Rentel (309MW) and SeaMade (488MW)

Develops, engineers, builds and operates projects





BW ideol winning solutions for offshore wind

A global leader in floating offshore wind

International team

HQ in France, Subsidiary in Japan, Offices in Northern Europe and California (60 + specialist engineers and offshore experts)

Patented floating foundation: Damping Pool[®]

for offshore wind turbines and offshore substations

Proven technology

2 full-scale demonstrators in operation in 2 strategic markets since 2018

Pioneer in concrete Hulls and synthetic mooring

Buildable in steel or concrete

| Multiple commercial and precommercial projects ongoing across the globe



A leading global renewable energy developer, service supplier, wholesaler and energy solutions provider

| 150 staff in Edinburgh and Glasgow

| Scottish onshore wind development pipeline > 350 MW and 1GW UK solar development portfolio

| Over 2 GWs of renewable generation assets under technical and commercial management in the UK.

Stakeholder management expertise through local presence, consenting knowledge and large industry network.

Over 1.2GWs of renewable PPAs signed globally and success in UK CfD auctions.

| Growing global offshore development team. Active in Scotland, France, Portugal, South Korea.

ScotWind: Our Unique Partnership Offering

Combination of expertise across:

- Offshore wind development, financing, construction and operations
- Floating wind technology deployment
- Consenting expertise and stakeholder management
- Delivering and managing projects in Scotland

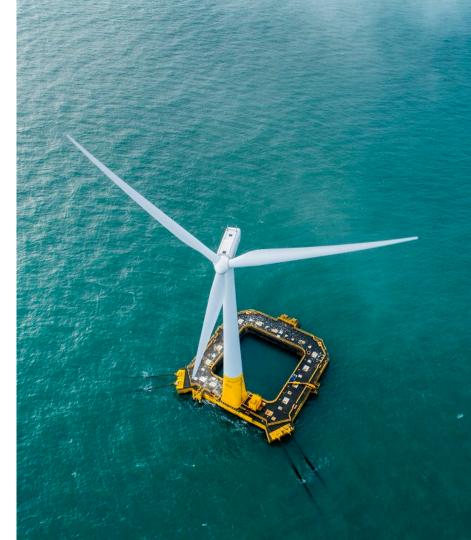
Early commitment to concrete substructure which lends itself to local manufacture, maximising local supply chain content



Technology

Ideol Damping Pool[®]:

- Square shaped ring hull
- Built in concrete
- Simplified construction
- Shallow Draft
- Flexible Launch Submersible Barge/ Dry Dock/ Ramp
- Turbine installation at quayside with land-based crane and tugs





Our Offering: Supply Chain Opportunities

Concrete hull manufacture, which requires:

Civil contractors

Concrete plants and ready-mix delivery

Aggregate supply

16

Rebar supply and pre-fabrication of cages

Use of local ports, yards and infrastructure Storage and handling of WTG components Onshore crane for quayside installation Submersible barges, tugs for launch and tow-out Use of local ports for marshalling mooring elements Cable installation contractors



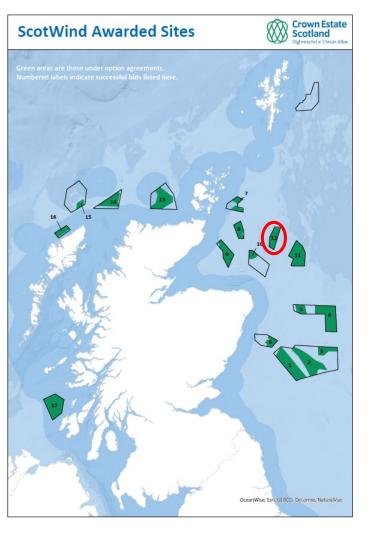


NE8

- 75km NE of Fraserburgh
- Water depth suitable for floating wind
- PO size circa 1GW
- Less constrained ornithologically (SMP)
- Ability to meet SMP 'realistic development scenario' for PO

6

Strong candidate PO from our early analysis





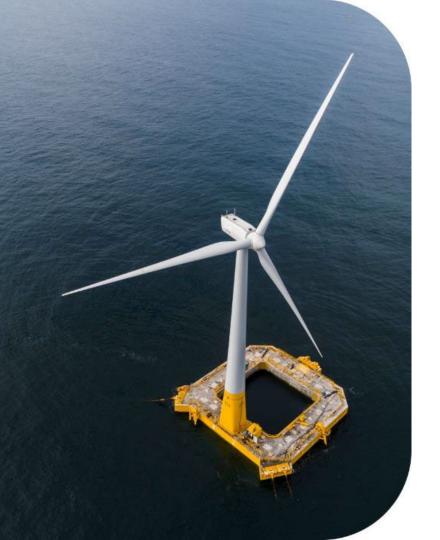
ScotWind Key Challenges

Grid uncertainity and delay

- Timescales for consenting
- Consenting stakeholders' resources
- Competition for surveys, consultancy resource, ports and vessels,









THANK YOU!

alasdair.macleod@baywa-re.co.uk @FEAllyance www.fe-allyance.com

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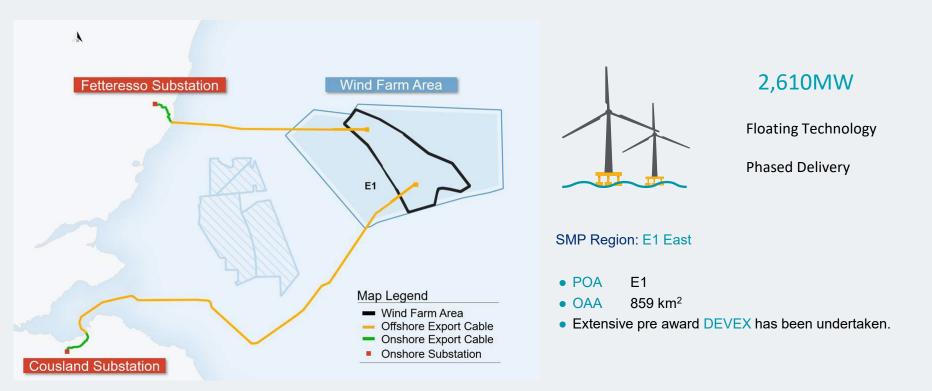
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Project Website https://www.sserenewables.com/scotwind Supply Chain Company Email <u>scotwindsuppliers@sse.com</u>

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OFFSHORE WIND CONFERENCE 8 & 9 MARCH 2022 GLASGOW



Alex Meredith

Project Director Berwick Bank Wind Farm SSE Renewables





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OFFSHORE WIND CONFERENCE 8 & 9 MARCH 2022 GLASGOW





Consenting that works for all: making it happen





Julian Boswall Partner Burges Salmon





Gayle Holland Head of Renewables Consenting Marine Scotland

Scottish Renewables Conference 2022 Consenting that Works for All -Making it Happen

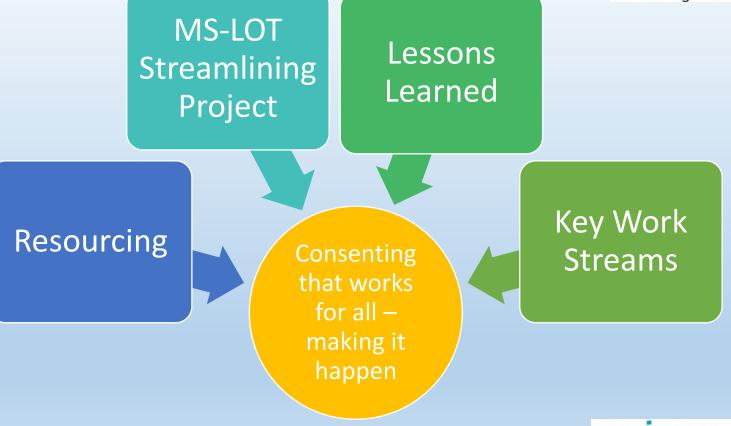


Scottish Government Riaghaltas na h-Alba gov.scot

Gayle Holland MS-LOT - Offshore Renewables Consenting

marinescotland





marinescotland





Resourcing

Marine Scotland

- MS-LOT project team
 - Caseworker, casework manager and project leader
 - EIA/HRA team
 - Streamlining team
- Policy support including sectoral/marine planning
- Marine Scotland Science

Wider Scottish Government and Advisors

- Scottish Government Legal Directorate
- Onshore Planning
- NatureScot

Total of 55 additional posts and rising plus additional funding secured for ScotMER

marinescotland





MS-LOT Streamlining Project

Objectives

To ensure approach is efficient and effective by:

- Reviewing internal process and external guidance
- Making recommendations and implementing improvements
- Standardising and streamlining working practices across MS-LOT
- Monitoring outcomes

Initial Focus

- Consolidating standard operating procedures/ forms/ templates
- Refine webpages to make information more accessible
- Update internal guidance
- Seek feedback
- Most appropriate order e.g. exemptions/scoping first marine scotland



Lessons Learned/ New Challenges

Lessons Learned

- Agree survey methodologies
- Discuss preliminary survey findings
- Approach to scoping
 - Consistent approaches to assessment
- Engagement with key stakeholders
 - NS, eNGOs, Fishing, MCA, NLB, CAA, NATS, MOD
- Collaborative working

New Challenges

- Scale of development
- Cumulative Impacts
- New technology floating

Scottish Government

• Derogations

Robust scoping exercise at the right time with the EIA Report based on the scoping opinion marine scotland



Key Work Streams



- Guidance on Alternative Solutions and IROPI
- Framework for Compensatory Measures
- Consideration of Strategic Compensatory Measures
- Cross Government Working

Other Guidance/ Tools/ Tasks

- Updating Consenting Manual
- Decommissioning Guidance
- Socio-economic Impact Assessment Guidance
- Cumulative Effects Framework
- Planning Colleagues Iterative Plan Review of SMP

Recruitment and training - ongoing marine scotland







Erica Knott Marine Sustainability Manager NatureScot

Scottish Renewables - Offshore Wind 2022 Consenting that works for all: making it happen

Erica Knott - Marine Sustainability Manager; Sustainable Coasts and Seas





Twin Crises – Climate change and biodiversity loss Policy Context

Sectoral Marine Plans

- Offshore Wind (ScotWind awards)
- Innovation and targeted oil and gas decarbonisation (INTOG- announced February 2022)
- Offshore Grid (likely to follow on from the Offshore Transmission Network Review - OTNR packages)

National Marine Plan (published 2015, revision due?)

Regional Marine Plans (3 have commenced: Shetland, Clyde and Orkney)



New Scottish Biodiversity Strategy



Image source: Global Gallery: TakingITGlobal gg.tiweb.org

Evidence Based Decisions: Research and Guidance

- Scottish Marine Renewables Energy Research programme (ScotMer)
- UK Research initiatives :
- BEIS Strategic Environment Assessment (SEA) research programme,
- Offshore Wind Environmental Evidence Register (OWEER),
- Offshore Renewables Joint Industry Programme (ORJIP) and
- Offshore Wind Strategic Monitoring Research Forum (OWSMRF)
- UK Sector Deal Pathways to Growth and Offshore Wind Enabling Change
- Academic Studies



Population Census Counts and Site Condition Monitoring

- ScotWind preparations:
 - Impact assessment tools
 - Post consent monitoring –
 regional advisory groups (RAGs
 Moray and Forth and Tay)
 - Derogation MS led work packages (leading on from SOWEC reports)
 - NatureScot Guidance
 - ScotWind developer meetings

NatureScot Guidance

- SMP Advice
- Bird Impact assessment suite of guidance notes following on from February 2020 workshop
- Geophysical and geotechnical surveys guidance
- Marine mammal impact assessment guidance (under consideration)
- Joint UK Regulators and Statutory Nature Conservation Bodies Unexploded Ordnance (UXO) Position Statement



NatureScot website

Scotland's Nature Agency Buidheann Nàdair na h-Alba



Marine Bird Impact Assessment – Suite of Guidance coming soon

- 1 Flow Chart of Assessment Guidance
- 2 Survey Collection and Data
- 3 Impact pathways
- 4 Breeding season connectivity
- 5 Marine SPA Connectivity
- 5 Population Estimates
- 6 Collision Risk Modelling
- 7 Displacement
- 8 Apportioning
- 9 Population Viability Analysis





Buidheann Nàdair na h-Alba

NatureScot Recruitment

Posts recruited

- 2 x Permanent marine sustainability managers (marine planning and marine energy teams)
- 4 additional marine sustainability advisers (case officers)
- 1 new marine renewables and fisheries adviser
- 2 additional permanent marine ornithologists 1 new admin. role



Remaining recruitment

- Head of Marine Science (ScotWind and NatureScot monies)
- 1 new data post
- Developmental post case officer (permanent, but 2 year cycle)
- Landscape adviser post

Watching brief on whether we may need more staff yet depending on implications around ports and harbours, INTOG, grid upgrades etc.



NatureScot advice for a good application and determination process



Scotland's Nature Agency Buidheann Nàdair na h-Alba

- Follow guidance (plan and project level)
- Don't scope too soon
- Consider what the significant issues will be and engage with all relevant parties
- Assess a realistic worst case scenario
- Engage efficiently and effectively
- Consider wider area and not just your project consider joint working
- Look for biodiversity opportunities as well as mitigation and compensation
- Be flexible
- Communicate
- Realism and reactivity required by all parties
- Collectively a need to develop shorter, concise and tech savvy EIA / HRA Reports





Jay Hilton-Miller Head of Offshore Renewables ITPEnergised

Scottish Renewables Offshore Wind Conference

Consenting that works for all: making it happen

Jay Hilton-Miller Head of Offshore Renewables at ITPEnergised



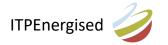
Introduction to ITPEnergised





Our Offshore Renewables Sector supports offshore wind projects around the world, for the full development cycle

- We strive to innovate and identify new trends
- We provide expert and commercially focused guidance and scientific analysis and advice across core services:
 - Environmental Planning & Consents, ecology, ECoW
 - Technology, Engineering, Cables & Grid
 - Technical Safety & Risk
 - Advisory, noise & air quality & ESG
- We join the dots with other ITPEnergised services and coprofessionals that bring benefit.
- We close gaps in expertise needed with our comprehensive network.

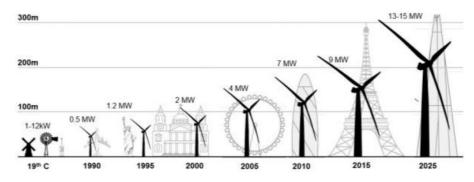


Scalable Consenting Approach

- Offshore Wind Farms are increasing in capacity
- Innovation in turbine design & capacity = larger turbines, longer rotor diameter
- Impact assessment process needs to scale up with the developments
- Coordination and mutual need for integration of different parts of consenting process – e.g. science, policy, regulations
- In project and inter-project cumulative impact assessment

1. International Energy Agency Analysis and Forecast to 2026 (December 2021) IEA report link

2. Offshore Wind Scotland analysis (January 2022) Offshore Wind Scotland link



Evolution of wind turbine size and power output (from Bloomberg New Energy Finance)



Floating Offshore Wind Farms

- Massive increase in planned floating offshore wind developments across the world & >50% of ScotWind projects
- Floating offshore wind turbine generator foundations:
 - Potentially lower magnitude of impact for some pathways e.g. benthic, underwater noise
 - Increased depth of projects, improved access to previously unavailable sites
 - Will need a refocus of assessment approach for some impacts e.g. access to grounds for commercial fisheries, EMFs, entanglement



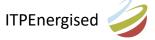
Kincardine turbine. Source: Bourbon offshore

Consenting – some key issues

- Collaboration and programme alignment of consenting, development and engineering teams
- Early identification of risks to consents, programme, finance, hazards & safety in relation to key receptor groups
- Accessibility of data is there scope for coordination?

• Salami slicing consent applications – e.g. gradual shifts in design envelopes

• Focus of development teams to get consent but require constructable, feasible plans - more integrated planning with construction teams







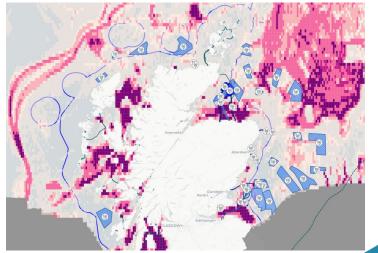






Stakeholder engagement

- Stakeholders and regulators resource constrained for consultation
- ScotWind expansion of commercial fisheries working groups, coverage in north and west, Regional Action Groups, FLOWW
- Need for early regulator and stakeholder input for design & planning for mitigation.
- Lean on previous areas of concern, hurdles e.g. planning for key components of consent plans during EIA process
- Lessons learned there is consistency in areas of concern over time
- Opportunity to review and plan for concerns at the concept and design phase



Marine Scotland National Marine Plan Interactive (2022)



ITPEnergised believes passionately in the world's transition to net zero. We are a team of trusted technical advisors who meet and exceed our clients' aspirations.

Visit the ITPEnergised group offices in:

Bristol, London, Edinburgh, Glasgow, Buenos Aires, Lisbon, Madrid, Delhi,

Renewables Corporate, Industrial and Manufacturing | Property & Urban Regeneration Oil & Gas Transition





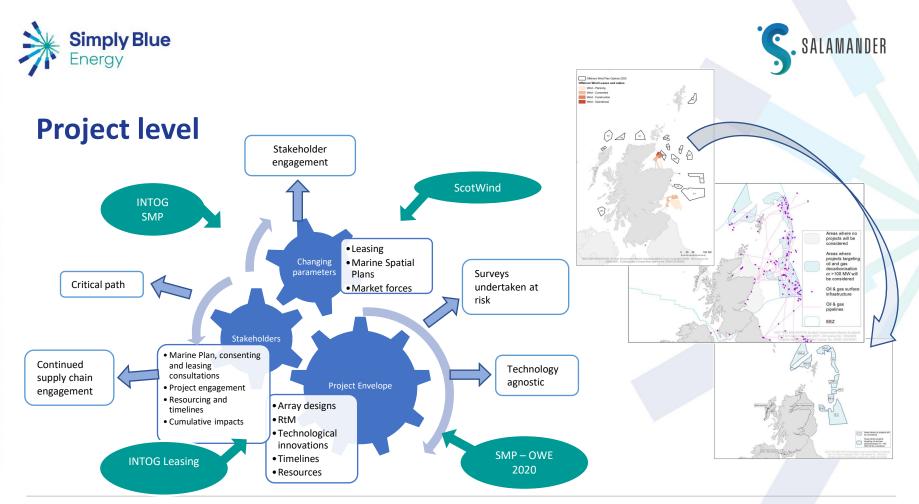
4th Floor, Centrum House, 108-114 Dundas Street, Edinburgh, EH3 5DQ info@itpenergised.com

itpenergised.com





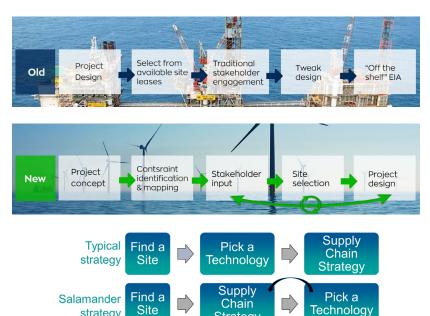
Nichola Lacey Environment and Consents Manager Simply Blue Group



SimplyBlueGroup.com



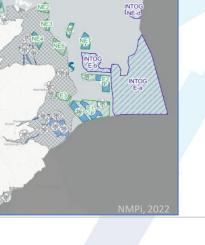
Salamander



Strategy

Technology

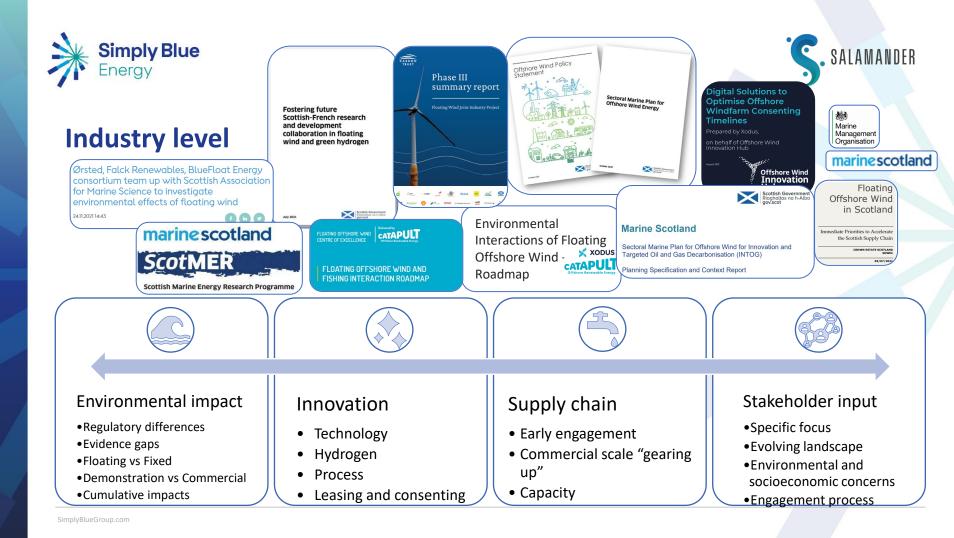




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strategy





Questions / Enquiries



Dr Nichola Lacey Environment & Consents Manager Nichola.lacey@simplybluegroup.com +44 1224 219957



Julian Boswall Partner, Burges Salmon

Gayle Holland

Head of Renewables Consenting, Marine Scotland

Erica Knott

Marine Sustainability Manager, NatureScot

Jay Hilton-Miller

Head of Offshore Renewables, ITPEnergised

Nichola Lacey

Environment and Consents Manager, Simply Blue Group

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Supplier showcase - turning strategy into reality



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John Casserly Commercial Director -Renewables Major Projects SSE Renewables



Andrew Duncan Renewables Director North Star Renewables









March 2022

Andrew Duncan Renewables Director

Supplier showcase - turning strategy into reality

Our SOV Offering

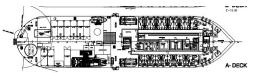




- Hybrid Propulsion optioned Methanol, Hydrogen, full electric
- Built in tower Motion Compensated Gangway
- 1 x Daughtercraft (DC) , 2 x Daughtercraft optionable
- STRICT Voith eVSP26 thrusters aft
 CONFIDENTIAL
- 2 x rim drive tunnel thrusters fwd
- 1 x 360 drop down thruster fwd
- Low Windage Helideck, maximising uptime
- NS optimised internal workflow
- Purpose built OSW daughter craft with class leading performance levels







Our innovative solutions to full cycle field management and optimisation





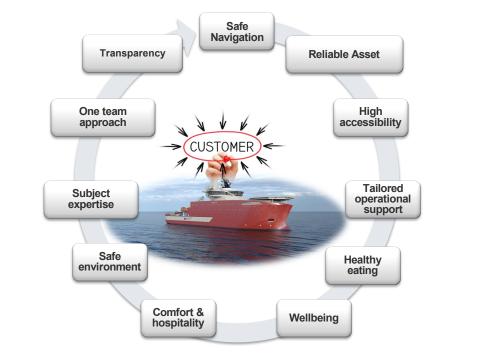
Client focussed offering



PAGE

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North Star's aim as partner and service provider is to place our Client at the centre of everything we do. This means from management onshore to technicians offshore, our focus is ensuring a Project/Client focussed reliable, safe and efficient service.



STRICTLY CONFIDENTIAL

Our Organisation



North Star has a leading level of UK headcount which numbers at <u>125 shore based staff</u>.

We are focused on further transitioning our business into offshore wind and have an organisation excited to help this growing industry and our countries wider energy transition.

The extent of our shore based team can be found below, offering leading levels of support to offshore wind clients in the UK with UK based roles.

Our industry leading cadet programme has delivered over 600 UK cadets to the maritime industry and we currently have 120 cadets in training.

We continue to liaise with UK colleges and universities to develop career and skill development pathways to help people transition into offshore wind.





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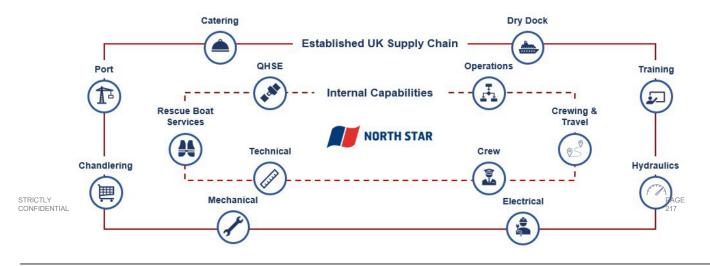


A UK Company with a UK supply chain

NORTH STAR

North Star is a UK based marine service provider, currently operating a fleet of 46 vessels across the Northern, Western and Southern sectors of the UK North Sea from its established operating bases in Aberdeen and Lowestoft.

Our fleet operates across all major ports on the UK's East coast, including Lerwick, Fraserburgh, Aberdeen, Montrose, Leith, Tyne / Tees, Humberside, Gt Yarmouth and Lowestoft. No other UK shipowner offers so much coverage.



Safe, Caring, Collaborative, Innovative, Sustainable

North Star – Fostering Manufacturing in the UK



North Star utilise UK based shipyards to build all offshore wind daughter craft.

North Star are the only SOV provider to do invest in UK based shipbuilding of this kind and are committed to investing more into the UK economy as we develop our SOV footprint.

In 2021 we awarded a multi million pound contract to Alicat in Great Yarmouth for the build of 2 of these daughter crafts helping support Alicats workforce of over 25 FTE's.

"An award of 3 more offshore wind daughter craft would probably add 30-40% more jobs to our current team to help deliver these vessels"

Simon Cootes - General Manager - Alicat Workboats"

A vote for North Star will help support manufacturing and design jobs in the UK and help build further centres of excellence for offshore wind.



Safe, Caring, Collaborative, Innovative, Sustainable

Our UK and Local Spending



Our People

32 Million + GBP in wages to UK residents <u>Per Year</u>

- 786 UK crew members
- •128 UK Cadets every year (Renewed on an ongoing basis)
- 113 UK shore side team
- Established UK recruitment channels
- UK Investors & board members

Our Supply Chain

40 Million + GBP in money paid to our UK supplier companies <u>Per Year</u> We pride ourselves in supporting our UK supply chain •80% of our companies supply chain

 80% of our companies supply cha are UK companies.

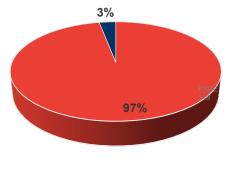
SOV award

1 x 10 year contract SOV award to North Star can deliver up to 46 million GBP in UK content.

Combine this with an option to construct a vessel in the UK and over £100 million GBP can be delivered in UK & Scottish local content







• UK • Other

Illustrative figures based on 2022 pricing and macro economic environment

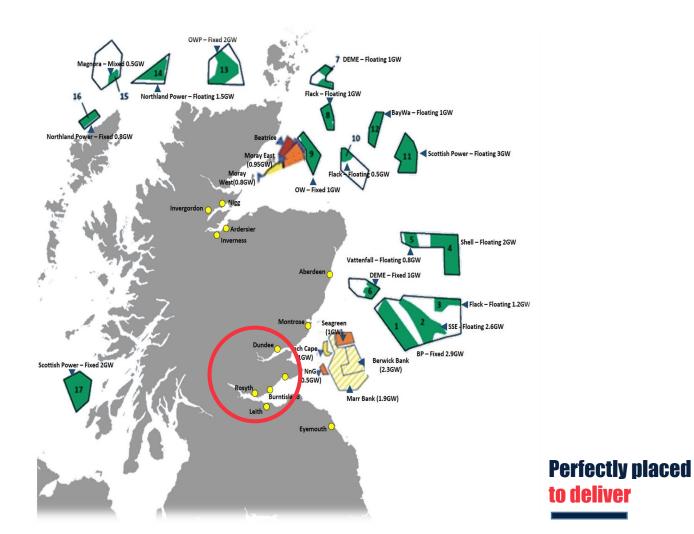
David Webster Director of Energy Forth Ports



River Tay

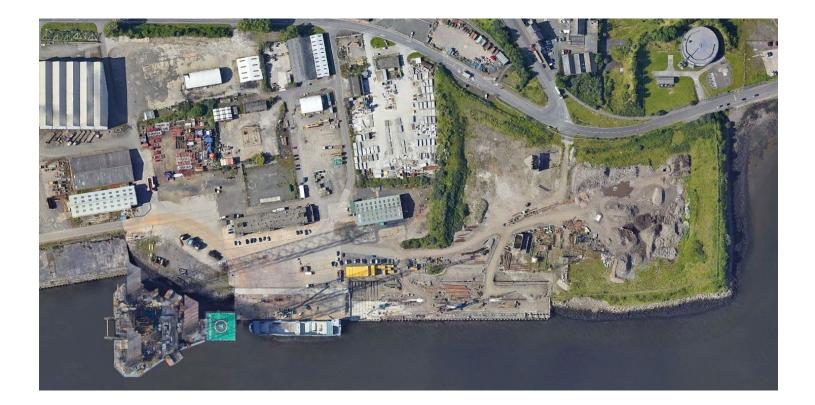
- **Dundee** Firth of Forth

- Leith
- Grangemouth
- Rosyth
- Burntisland
- Methil



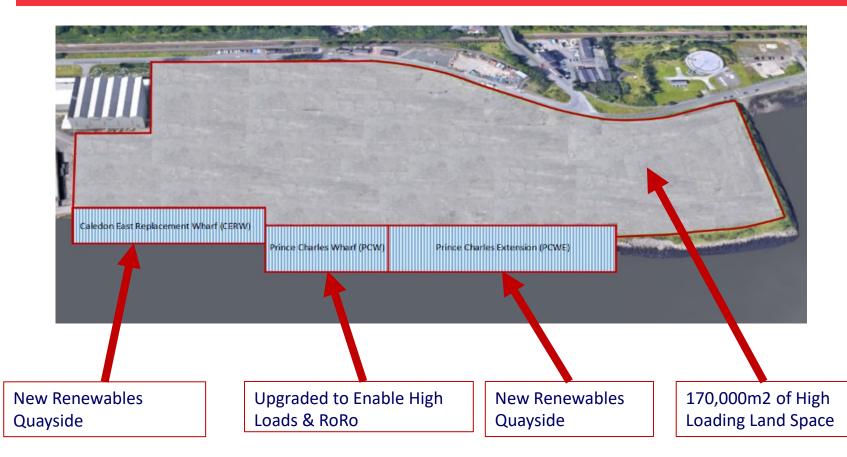
Port of Dundee – Before





Port of Dundee – Planned





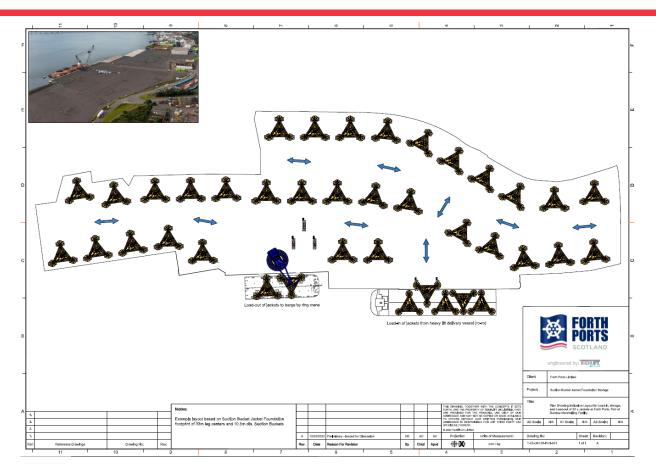
Port of Dundee – Completed





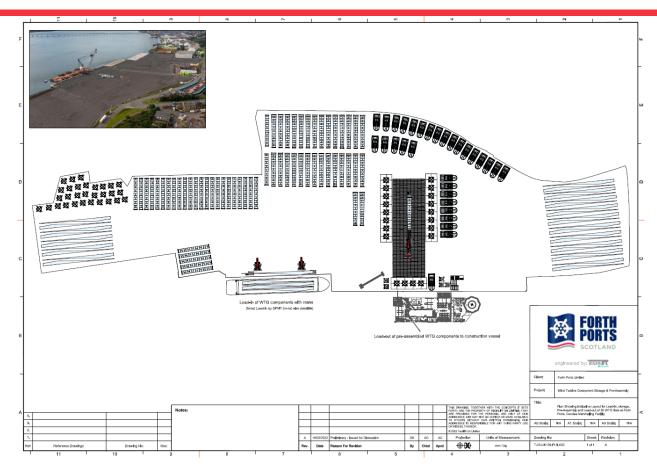
Purpose Built - Marshalling Capability





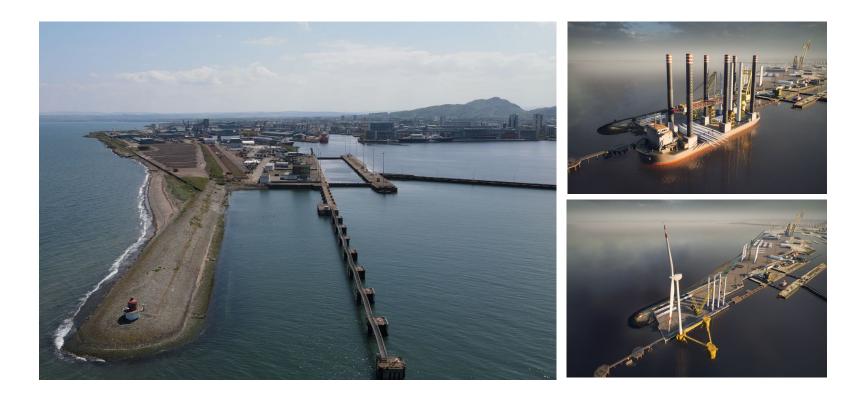
Purpose Built - Marshalling Capability





Edinburgh's Green Revolution



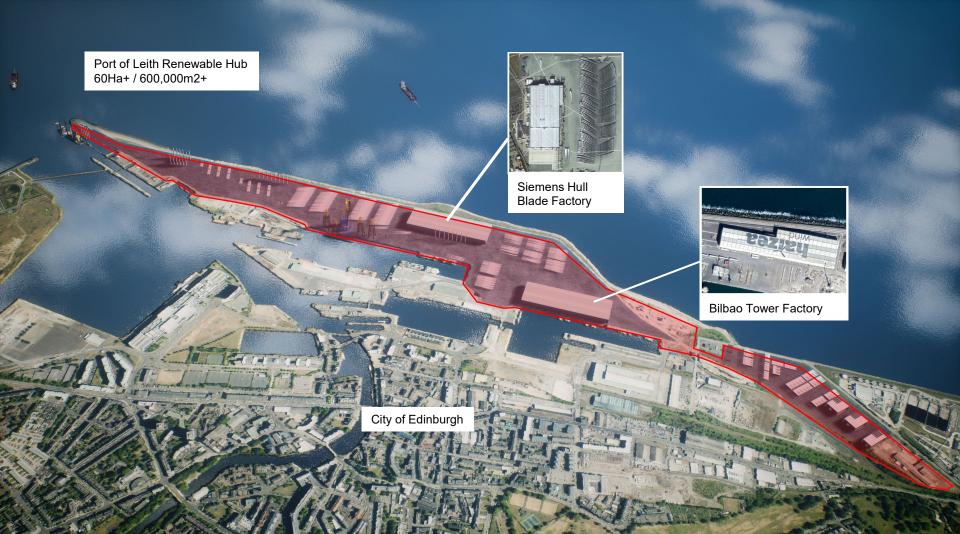


Leith - Size and Scale



- Scotland's Largest Renewable Energy Hub
- Total Area Circa 180ha
- Circa 4km of Quaysides
- 40m Water depth in River Forth
- Floating Wind Enabled
- City Centre Location
- Road, Rail and Tram Linked





230

Firth of Forth Green Freeport

- Proven track record on delivering Freeport – Thames Freeport
- Strategic location in the Central belt at the heart of Scotland's industrial zone
- Allows Scotland and the UK to meet its net Zero targets
- Key focus on the just transition to net zero
- The ability to reindustrialise large areas of Scotland – potential of up to 50,000 jobs
- Key sector focussed
- Levelling up and skills development being addressed
- Forth Ports is a Real Living Wage employer





Thank you

T: 01382 878130

E: David.Webster@forthports.co.uk www.forthports.co.uk

Hannah Lawson Business Development Specialist Worley

lan Milne Sales Manager – Renewables Balmoral

BALMORAL Innovation keeps us afloat

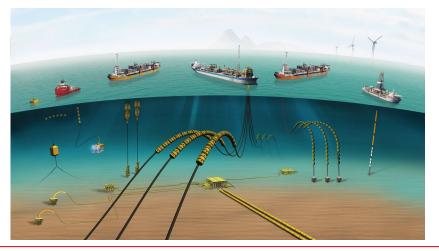
Scottish Renewables Offshore Wind Conference March '22

BALMORAL

Our company

Sealmoral

- Privately owned company
- Headquarters in Aberdeen with a global supply
- Sales Office in Houston & Newcastle
- App. 300 plus employees in Aberdeen
- Agents positioned in the key market areas globally
- Europe's largest privately owned subsea test center



Traditionally known for serving the exploration, installation and production phases of O&G markets

- Distributed Buoyancy
- Marine / Anchor Mooring Buoys
- Drill Riser Buoyancy
- Bend stiffeners
- Bend Restrictors
- Subsea Cable & Flowline Protection



Our Journey





What are the challenges?

- Client base & understanding existing? new? established?
- Developer? Installation Contractor? Cable Manufacturer?
- Commercial & contractual expectations
- Competition who, where, why?
- Market information what does it all mean?
- What is your why? Growth? Clients? Technology?

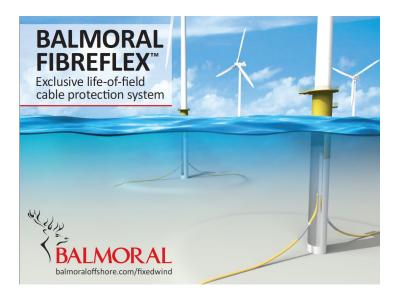


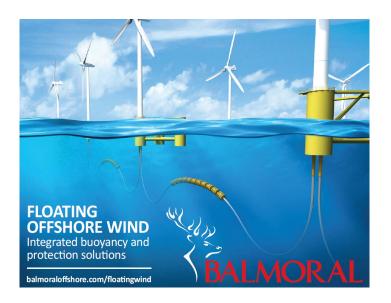
What have we learned?

- There is help out there! SDI, ORE Catapult, Clusters
- Project sanctioning a longer process than O&G
- The market is changing and recognising O&G track record
- Validation of technology is key

THANK YOU for your attention







lan Milne Sales Manager – Renewables ian.milne@balmoral.co.uk +44 (0) 7525 837732 acturing









John Casserly

Commercial Director - Renewables Major Projects, SSE Renewables

Andrew Duncan

Renewables Director, North Star Renewables

David Webster

Director of Energy, Forth Ports

Hannah Lawson Business Development Specialist, Worley

lan Milne Sales Manager – Renewables, Balmoral

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Voyage to 2045 and beyond the long view for offshore

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Helen Snodin Grid and Regulations Manager Fred. Olsen Seawind



Fred. Olsen Seawind



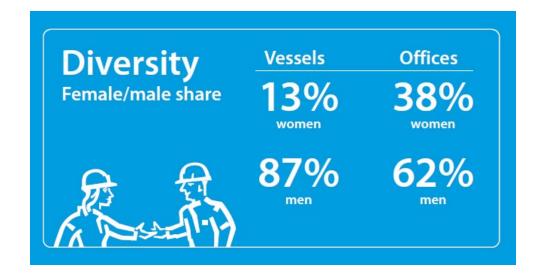
Windcarrier

Scottish Renewables Offshore Wind Conference

March 2022

Windcarrier ESG

K Fred. Olsen Seawind





Fred. Olsen Seawind



Aberdeen Bay

Scottish Renewables Offshore Wind Conference

March 2022

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Andronikos Kafas New Offshore Wind Opportunities Manager OceanWinds

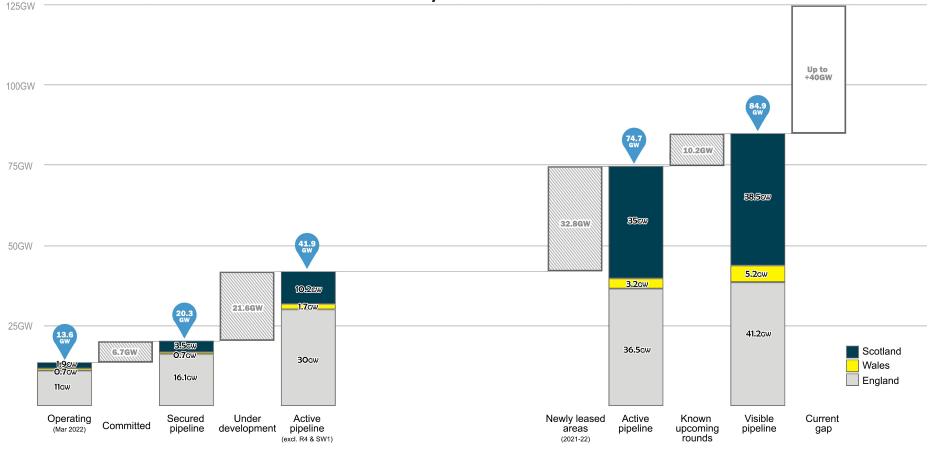


Scotland's voyage to 2045 and beyond

Scottish Renewables Offshore Wind Conference 2022 – 09 March 2022

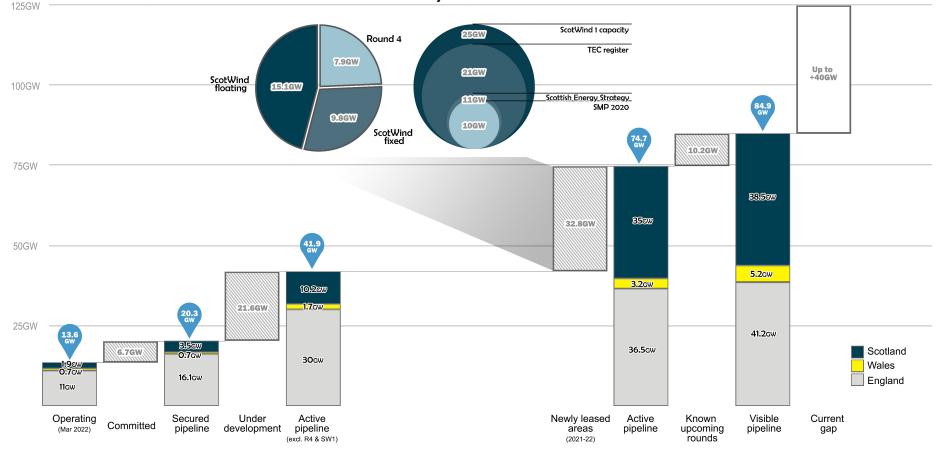
Dr. Andronikos Kafas - New Offshore Wind Leasing Opportunities Manager, Ocean Winds UK

UK offshore wind market in the years ahead



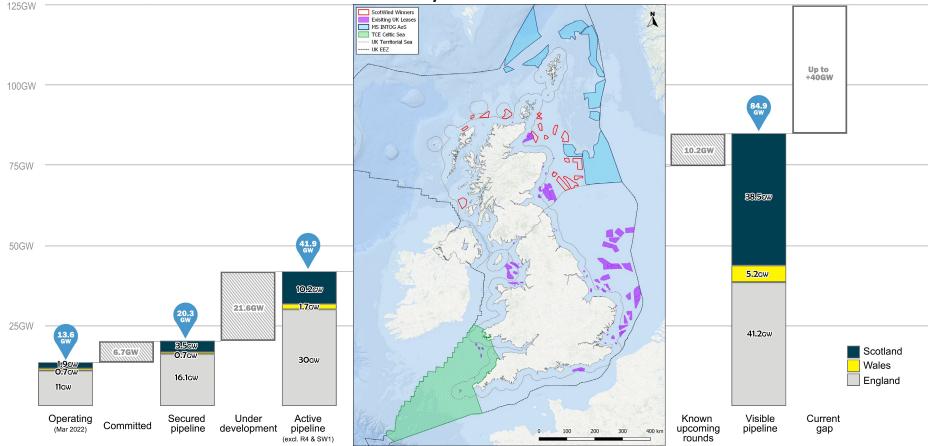
OW

UK offshore wind market in the years ahead



OW

UK offshore wind market in the years ahead



OW

THANK YOU

Dr. Andronikos Kafas New Opportunities Manager

New Opportunities Team, UK Business Unit, Ocean Winds

5th floor, Atria One, 144 Morrison Street EH3 8EX, Edinburgh, UK

Work Mobile: +44 7778351567 Email: Andronikos.Kafas@oceanwinds.com

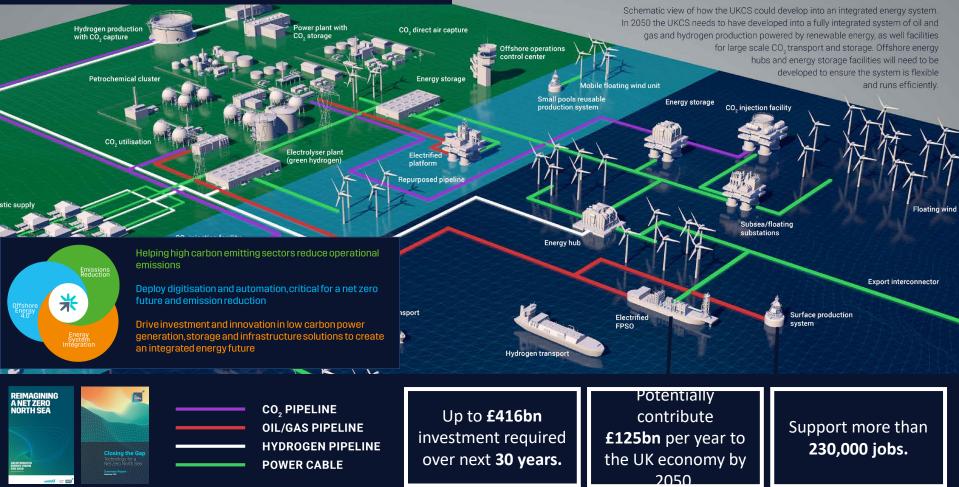
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Graeme Rogerson Senior Project Manager Net Zero Technology Centre

Net Zero Technology Centre

UKCS integrated energy vision 2050



Net Zero **Integrated Energy Basin** Technology **Technology Driving Transition** Alternative **Fuels Gas** Production Alternative Fuel to Offshore Users H₂ Storage H₂ for Export to Europe Industria Users 3 Exis 1 NZTTP (ETF) **Alt.Fuel Project** 2 NZTTP (ETF) **Energy Hub Project** NZTC **LC Pwr Solution** 3

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Alwyn Poulter Public and Regulatory Affairs Manager Vattenfall

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Rick Campbell Head of Offshore Markets Natural Power

Working towards a future powered by renewable energy



Voyage to 2045 and beyond The long view for offshore

Presenter: Rick Campbell

Date: 9th March 2022





Innovation and Targeted Oil and Gas Decarbonisation

Offshore Market Review

- 1. **Opportunity to secure seabed rights** for commercially viable, consentable offshore wind projects in an established market with strong natural resources and a mature policy regime.
- 2. Potential for **full or partial offtake agreement with oil and gas installations**, enabling financial stability and potentially avoiding the need for OFTO, TNUoS costs, network reinforcement and associated timing constraints.
- 3. Opportunity to **deploy innovative offshore wind infrastructure**, demonstrating technology and readying the supply chain in anticipation of deployment for commercial-scale ScotWind projects.
- 4. Introduction of **new participants in the offshore wind market**, with opportunity for crosssector learning and novel approaches to financing, ownership, operations and maintenance.
- 5. Opportunity for **offshore wind to play a part in the decarbonisation of oil and gas infrastructure**; a major step in the delivery of a net zero economy.
- 6. Enhanced **pipeline of projects** for Scotland's floating wind supply chain.









- 1. Continued leasing and development opportunity in Scotland and worldwide
- 2. New market entrants
- 3. Revised / alternative owner-operator models
- 4. Integration with other projects / other forms of energy production
- 5. Storage (!)
- 6. Scottish and UK exports









Helen Snodin

Grid and Regulations Manager, Fred. Olsen Seawind

Andronikos Kafas

New Offshore Wind Opportunities Manager, OceanWinds

Graeme Rogerson

Senior Project Manager, Net Zero Technology Centre

Alwyn Poulter

Public and Regulatory Affairs Manager, Vattenfall

Rick Campbell

Head of Offshore Markets, Natural Power



ORGANISED BY







Claire Mack Chief Executive Scottish Renewables



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UPCOMING EVENTS





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