

SCOTLAND'S
**ENERGY
TRANSITION
SHOWCASE**

19 MARCH 2024
GLASGOW

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renewables

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Claire Mack
Chief Executive
Scottish Renewables

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Kerry MacPhee

Community Liaison Officer

EDF Renewables



People and Communities

Kerry MacPhee











Thank
You



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Alexander Holt
Head of International Ecosystems,
Economy Directorate
The Scottish Government



EXPO

CITY

UNITE.
ACT.
DELIVER.

UNITE.
ACT.
DELIVER.

EXPO 2020
UAE

EXPO 2020
UAE







28
Projects

Countries
Egypt, KSA, India

Estimated Water
Savings
1 Mm



Towards Scotland's *Green Industrial Strategy*

Alexander Holt

**In the service _____
of Scotland**



**Scottish Government
Riaghaltas na h-Alba**

Scotland's Green Industrial Strategy

The GIS is a Programme for Government commitment. It aims to:

1. **Identify and prioritise** the most significant economic opportunities for Scotland from the global transition to net zero;
2. **Define the role of Scottish Government** (SG) and its partners in realising those opportunities, and the actions it will take in pursuit of them;
3. Deliver the **clarity and confidence needed to attract private investment** into those opportunities in Scotland.

We want to speak directly and succinctly to **business** and **institutional investors** to provide **clarity and certainty** around the opportunities that are being prioritised in Scotland and the support that will be provided by Scottish public sector in support of these opportunities.

Interplay with the forthcoming Energy Strategy Just Transition Plan (ESJTP)

What do we care about in selecting them?

GIS purpose - *Identify and prioritise the most significant opportunities for Scotland to develop internationally competitive clusters in global growth sectors related to the transition to net zero*

So, we might think about

- Employment (now and future potential)
- Earnings (GVA per worker as proxy for productivity)
- Exports (now and future potential)



Increase in GVA

We could also consider – but we think are harder

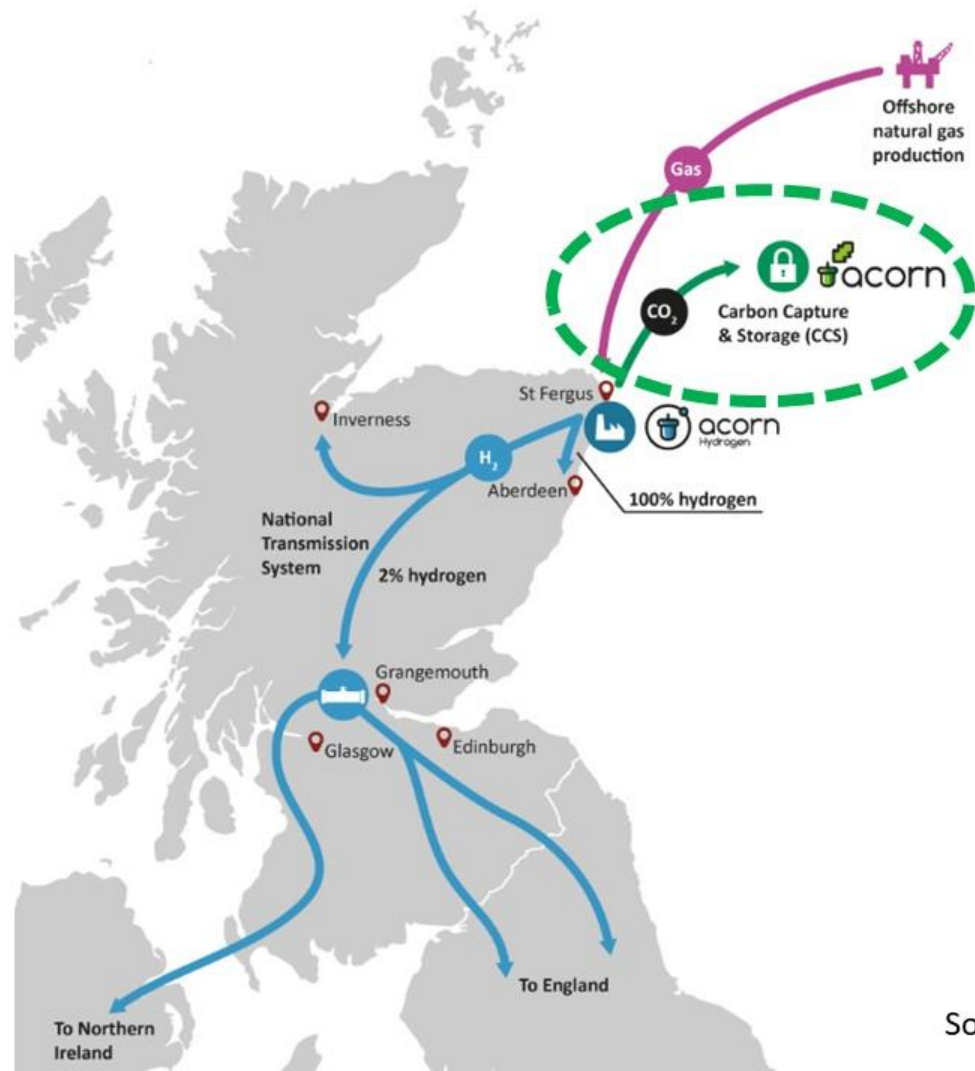
- Supply chain capability and potential (introduces a stronger focus on manufacturing?)
- Regional economic impact
- Investment potential
- Just transition / wellbeing economy

Building towards a set of strategic choices





Source: Siemens Gamesa







H₂

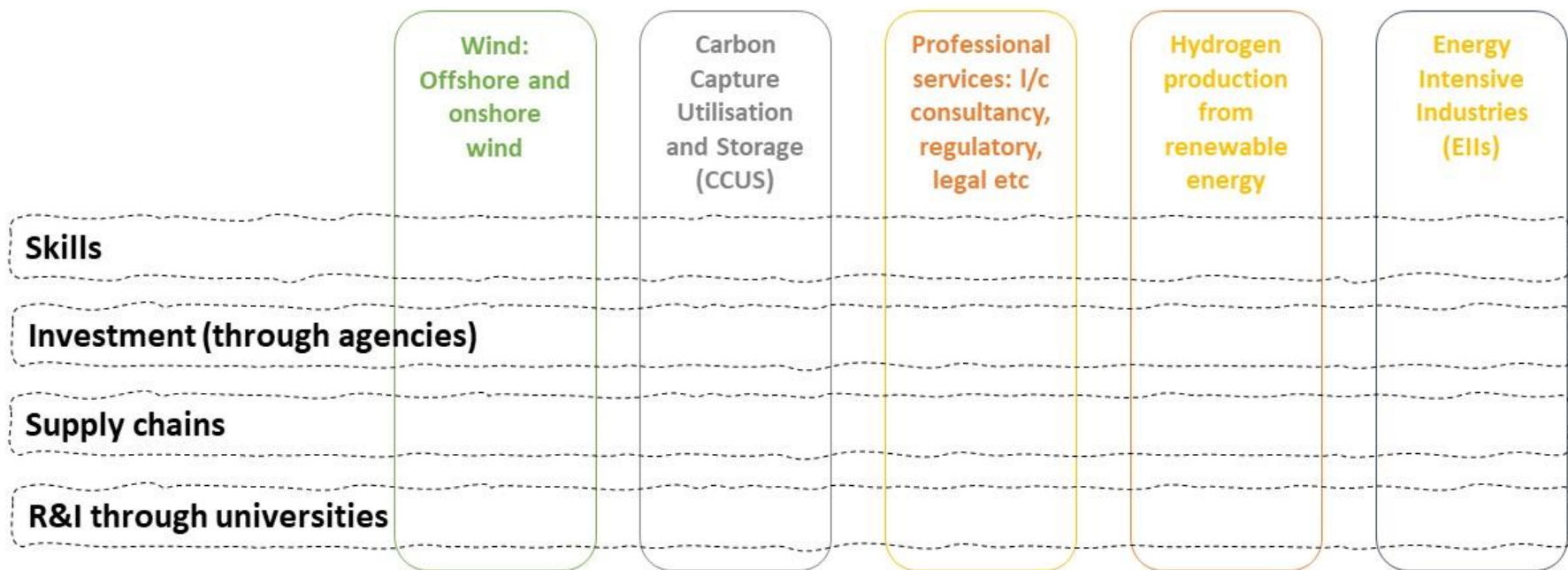
Hydrogen H₂

zero emission

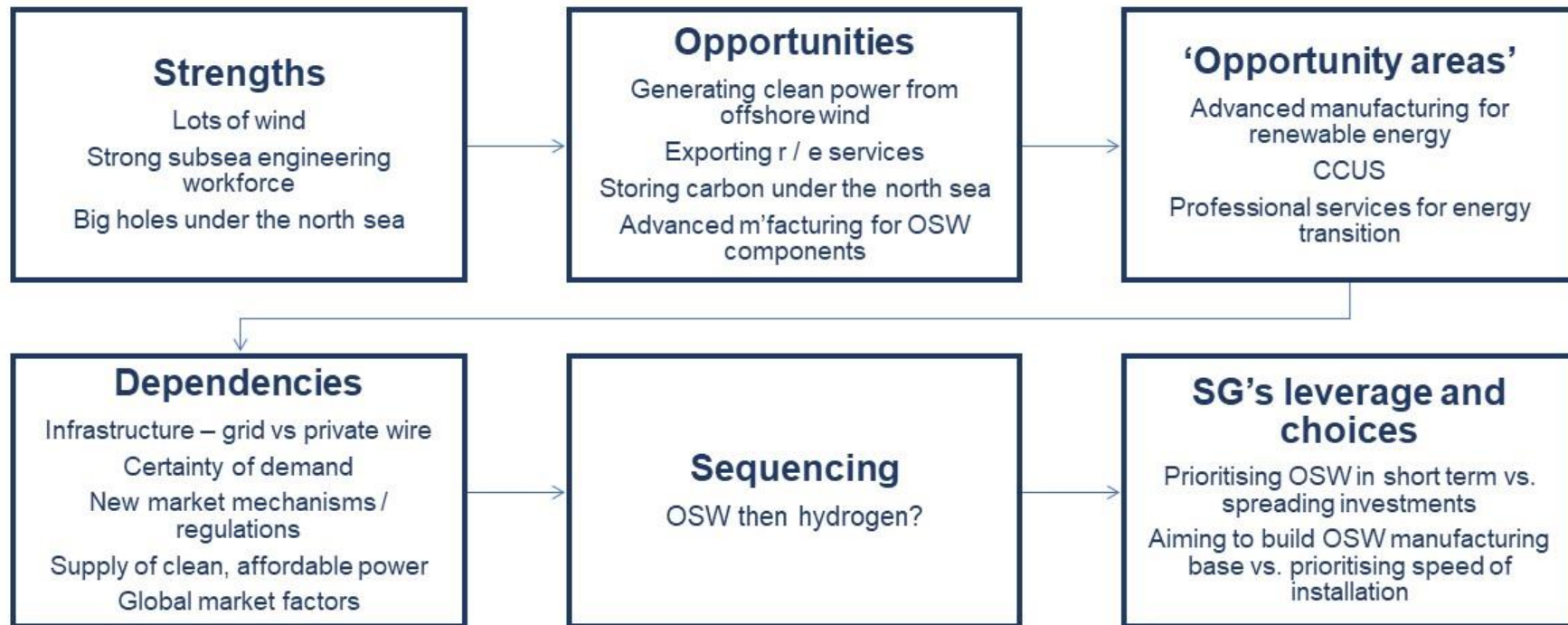


Source: energyadvicehub.org

Opportunity areas and cross cutting enablers (examples)



Building towards a set of strategic choices



What do you need from government?

Skills

Investment

Regulation (planning, consenting)

Or maybe even... nothing!

Timelines / How to get involved...



If interested in forthcoming engagement sessions organised through Scottish Renewables, then please let Claire know.

Email: alexander.holt@gov.scot

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Scott Hamilton

Principal Consultant and Owner

GMC

ScottWind or 'Ah just ken' – one man's unauthorized view of renewables in Scotland

Scott Hamilton

Scottish Renewables – Scotland's Energy Transition
Showcase

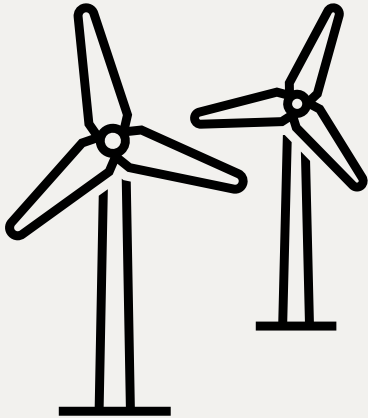
March 4, 2024

Green Man Consulting Ltd



BaiRBlE.me

Scott Hamilton – GMC Ltd



Scott is a committed and enthusiastic offshore wind generalist with 15 years of experience analysing, monitoring and advising on the global wind industry. While Scott is known for his specific focus on supply chain and local content, his overall career has been largely focused on due diligence and techno-economic analysis. He has substantial background in providing technical consultancy to clients of all sizes and across both the onshore and offshore wind markets. His in-depth industry knowledge helps clients identify and make the most of opportunities in renewable energy.

Scott has advised multiple governments on the process of balancing up-front value and direct investment against overall industrial strategy when designing offshore wind leasing rounds. Before starting GMC Ltd., Scott led a team which secured 16.5 GW of leases for clients in the ScotWind leasing round, four out of five innovation leases for the INTOG process and developed OREC solicitation bids for 50% of NY Bight leasing round winners. Scott is a regular presenter and panelist at international conferences, having presented in the UK, Australia, Brazil and Canada in the past 12 months. Scott has previously served on the Scottish Offshore Wind Energy Council (SOWEC) as Chair of the Supply Chain Working Group, developing a strategy for re-industrialisation of the Scottish economy as part of the ScotWind development programme.

While individual contracts are confidential in nature, GMC Ltd is working internationally to advise multiple clients on acquisitions, investments and market entry strategies in the offshore wind and wider energy infrastructure space. Through GMC Ltd., Scott is working with US Clients investing into the Brazilian and European offshore wind space, Norwegian clients investing into the UK offshore wind market and an array of Scottish based companies looking to enter the global offshore wind supply chain. Scott and GMC specialise in working with developers, OEMs, industry enablers and governments to provide respectful challenge to established practices and maximise value for all participants in the on and offshore wind industry.

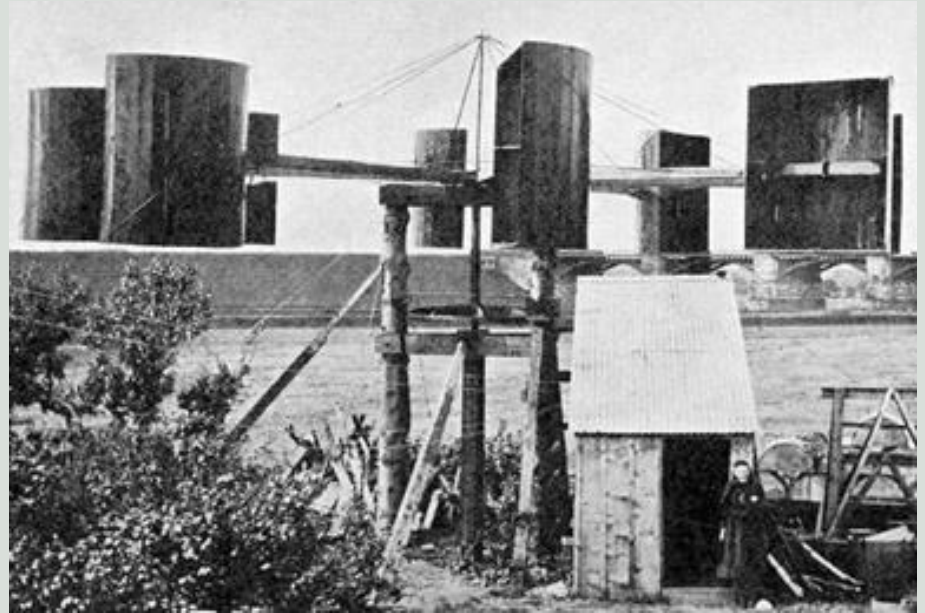
01 Introduction – renewables in the auld days

First ever wind turbine was built in Marykirk in 1887.

Notably also a vertical axis wind turbine.

Largely wooden construction, therefore circular and sustainable design, and technically also the world's first floating offshore wind turbine.

100% local content, so would have qualified for the CFD process, however - despite a direct wire connection to James Blyth's holiday home it is likely that an update to the TNUoS charging calculation would mean that the project wasn't economically viable despite being the only applicant to a ring-fenced pot...



Successes!



01 Modern renewables in Scotland



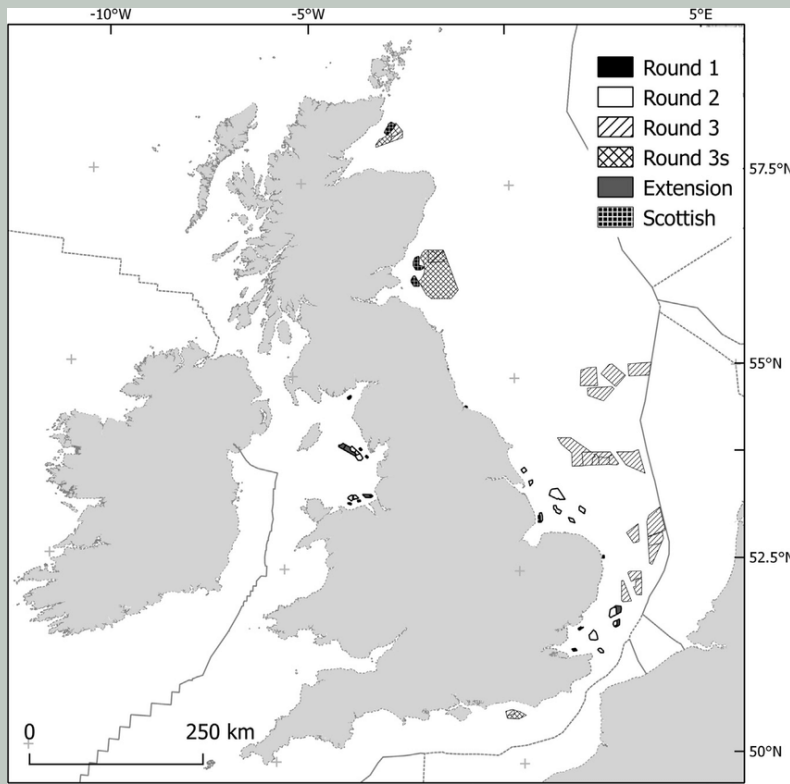
Started in 1948 at Morar and Nostie Bridge with the Hydroboard (now part of SSE)
 c. 1.7 GW of generating capacity in Scotland now

Hagshaw Hill – 1st onshore wind farm in 1995 (now also approved for repowering)
 c. 10 GW of generating capacity now

Robin Rigg – 1st offshore wind farm in Scottish waters (grid connection in England) in 2010
 c. 3 GW of generating capacity now

Mackie's at Westertown Farm – 1st solar farm in Scotland
 c. 600 MW of generating capacity now

European Marine Energy Centre (EMEC) on Orkney providing world leading testing facilities for wave and tidal energy devices
 Projects/technology still at demonstration stage



Round 1, 2, 3 and STW⁰²

Round 1

Round 2

Scottish Territorial Waters

Round 3 – a step change in capacity

32GW of potential new capacity awarded by Crown Estate in 2010 – 4.8GW of this capacity was in Scotland.

- Moray Firth zone: Moray Offshore Renewables Ltd – 1.3GW
- Firth of Forth zone: SeaGreen Wind Energy Ltd – 3.5GW
- Dogger Bank zone: the Forewind Consortium – 9GW
- Hornsea zone: Siemens Project Ventures & Mainstream Renewable Power – 4GW
- Norfolk Bank zone: East Anglia Offshore Wind Ltd – 7.2GW
- Hastings zone: Eon Climate and Renewables UK – 0.6GW
- West of Isle of Wight zone: Eneco New Energy – 0.9GW
- Bristol Channel zone: RWE npower Renewables – 1.5GW and
- Irish Sea zone: Centrica Renewable Energy and involving RES Group – 4.2GW.

02 ScotWind

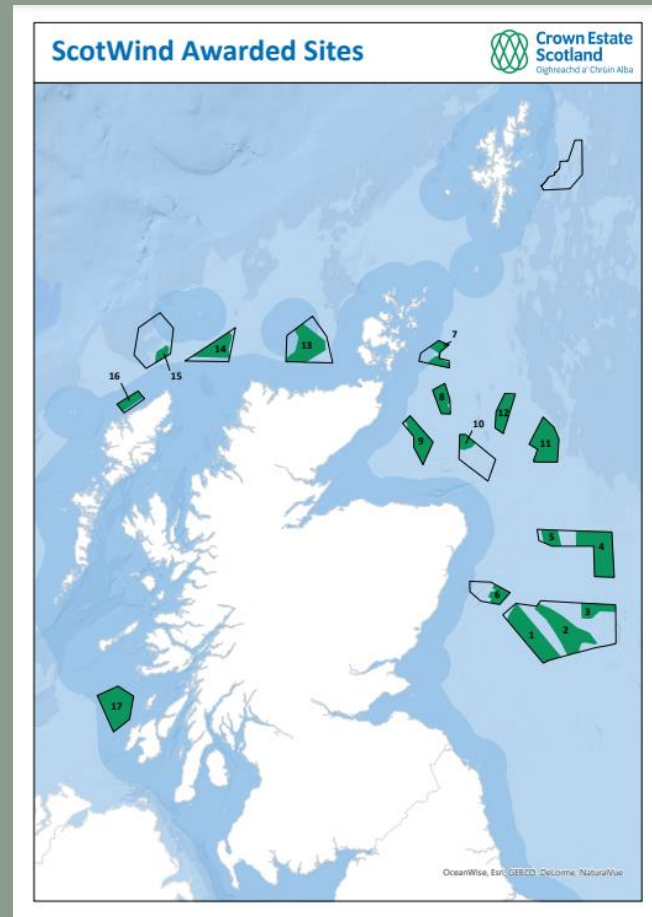
First Scottish offshore wind leasing round in over a decade: Launched in June 2020, it aimed to award seabed rights for building wind farms.

20 projects across 17 sites awarded: Announced in January 2022, with a total capacity exceeding 27.6GW, potentially contributing significantly to Scotland's net zero goals.

Competitive application process: Developers submitted bids in July 2021, with option agreements offered to successful parties in January 2022, confirmed in April 2022.

Clearing round expanded opportunities: Three additional projects were awarded in November 2022, further increasing capacity.

Expected major boost to Scotland's clean energy future: The projects are anticipated to generate significant renewable energy and contribute financially to the Scottish Government.



03 Onshore wind



10 GW of capacity already installed, with a further 52 projects capable of hitting CFD, FID and COD by 2028.

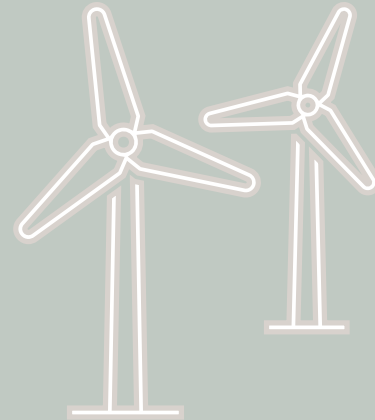
Onshore wind has been the unsung hero of Renewables in Scotland for the past few years in terms of widespread deployment.

Overall the industry has fallen short where markers such as local content are considered, but other drivers (lack of CFD) have cemented this position.

Encouraging levels of community ownership, although more is required at government level (especially in land reform) to drive this forward.

New onshore wind sector deal launched in 2023 to target (at last in part) the issues highlighted above.

Failures?



04 UK energy policy (or lack thereof...)

“This will be the Greenest Government ever”

Also

‘We have got to get rid of this Green Crap’

David Cameron – Former Prime Minister & Current @rsehole

“DCLG’s Written Statement on wind farms (HCWS42, 18 June 2015) will mean no more onshore wind farms without local community support”

Amber Rudd – Former Secretary of State for Energy and Climate Change & Current @rsehole

“we are lifting the moratorium on fracking. We will extract every ounce of oil and gas from the North Sea.”

Jacob Rees Mogg – Former Victorian mill owner & Current @rsehole

“More and more of our country’s cheese is coming from abroad”

Liz Truss – Former Prime Minister and current economic pariah

04 Local content

But the industry faces major pinch points in the supply chain, not least vessel availability, according to Scott Hamilton, a renewables analyst at ODS-Petrodata in Aberdeen.

He said: “The next couple of years will really define what happens.

“If the supply chain doesn’t mobilise the windfarms would still get built but it would be through importing a lot of work and equipment.

“And there would still need

But he said the industry needed to think differently to oil and gas. But without knowing what sort of vessels would be needed, what foundations would be used and port and wharfage availability, it was hard for contractors to plan.

Developers and manufacturers were also called upon to be more open with contractors about their plans and allow firms to map their future.

There is also a need for more players in the turbine manufacture market, skilled personnel and collaboration between offshore supply chain firms, delegates heard.

But the economic climate

July 2011
energy.pressandjournal.co.uk

Supply chain must mobilise

He said: “The next couple of years will really define what happens.

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“And there would still need to be expansion in the supply chain.”

Major work on offshore windfarms is likely to ramp up the major deeper Round Three windfarms by 2015.

Supply chain must mobilise



THE UK could lose supply chain work to overseas firms if companies do not step up to the mark, an industry event was warned in Aberdeen.

A briefing run by industry body Subsea UK was told that the number of offshore wind turbines being built off UK waters will rise from 600 this year to 2,000 a year, from 2015.

But the industry faces major pinch points in the supply chain, not least vessel availability, according to Scott Hamilton, a renewables analyst at ODS-Petrodata in Aberdeen.

He said: “The next couple of years will really define what happens.

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Bill Edgar



Building Ormonde – but the UK supply chain needs to grasp the nettle or others will grab the business from under their noses

While there are just a few installation vessels in the market at the moment - commanding high day rates as a result - there are 22 vessels due to be delivered next year, which could saturate the market, Mr Hamilton said.

Most are from non-UK firms, including troubled joint venture Beluga Hochtief but also MPI, Fred Olsen and RWE.

The pinch points would be in cable-laying vessels and operations and maintenance jack-ups said Mr Hamilton. Companies are unwilling to order new vessels because there are not framework agreements in place, making any investment speculative.

To supply offshore wind operations and maintenance demand, there will need to be an additional 15 to 20 new jack-up vessels built by 2014, said Mr Hamilton. By 2020, another 45 jack-ups will need to have been built.

Cable maintenance is another issue. At the moment, work is done ad hoc when there is a failure, meaning vessels or even parts are not readily available.

Others in the industry agree capacity is limited.

A subsea contractor at the lunch said the market would not be able to meet targets of 32GW of installed wind by 2020.

He cited the huge opportunities in offshore cable laying and maintenance.

But he said the industry needed to think differently to oil and gas. But without knowing what sort of vessels would be needed, what foundations would be used and port and wharfage availability, it was hard for contractors to plan.

Developers and manufacturers were also called upon to be more open with contractors about their plans and allow firms to map their future.

There is also a need for more players in the turbine manufacture market, skilled personnel and collaboration between offshore supply chain firms, delegates heard.

But the economic climate and access to investment also need to ease.

Kevin Moran, who recently joined DOF Subsea as vice-president of renewables, emphasised that the region had the subsea skills needed for the market.

But Bill Edgar, chairman of Subsea UK, added: “It is almost like deja vu from the 1970s in the North Sea. You could say the markets are confused at the moment. But with confusion comes opportunity.”

● A floating accommodation firm has been launched by Liverpool-based Sanderson Maritime.

The Seatel venture focuses on a concept which could house up to 70 bedrooms and facilities on a barge which it says could be based up to 70 miles offshore.

Seatel is a joint venture with global marine services firm Switzer UK, a subsidiary of the AP Moller-Maersk Group, which has its UK headquarters in Liverpool.

02 Lessons learned?

- 1. Tories are @rseholes and shouldn't be trusted with safety scissors never mind the economy – undermined policy certainty in the early 2010s, destroyed the English and Welsh onshore wind industry – and set the Scottish onshore wind industry back by at least five years. Acted surprised after they ignored the offshore wind industry and no one bid in CFD AR5**
- 2. Creating an offshore or onshore wind supply chain requires an entire mindset change at a macro-economic level. Expecting a single industry to deliver change of this magnitude is unrealistic.**
- 3. The scale of the ScotWind announcement was unprecedented. While this is positive for net zero goals, the sheer volume of projects has created its own delays through lack of resource, cumulative risk and general lack of grid connections.**
- 4. Renewables in Scotland (& anywhere globally) has an incredibly strong social license but struggles to make any money. The O&G industry has a weak social license but makes huge amounts of money. The lion's share of investment still follows O&G.**

Speaks for itself really...

Redefining 'success' is crucial. Examining our capacity for delivery and defining supply chain success through relative use and expansion of that capacity could provide a more strategic framework.

Adaptation and collaboration are the only options remaining. We are yet to see the level of attrition in the project pipeline, so projects such as the SIM are crucial to providing certainty at an industry level which isn't available at a project level.

Reconsideration of the value model for renewables. Undoubtedly a system which allows for storage is needed but leveraging and maintaining this social license into a new economic model is a priority to ensure Net Zero targets are met and climate change impacts are minimized. Onshore wind is crucial to delivering rapid delivery low-cost renewable energy.

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