OCEAN WINDS

AKER OFFSHORE WIND

# Floating Offshore Wind: Delivering a Green Industrial Revolution for Scotland

## The Ocean Winds-Aker Offshore Wind Supply Chain Manifesto

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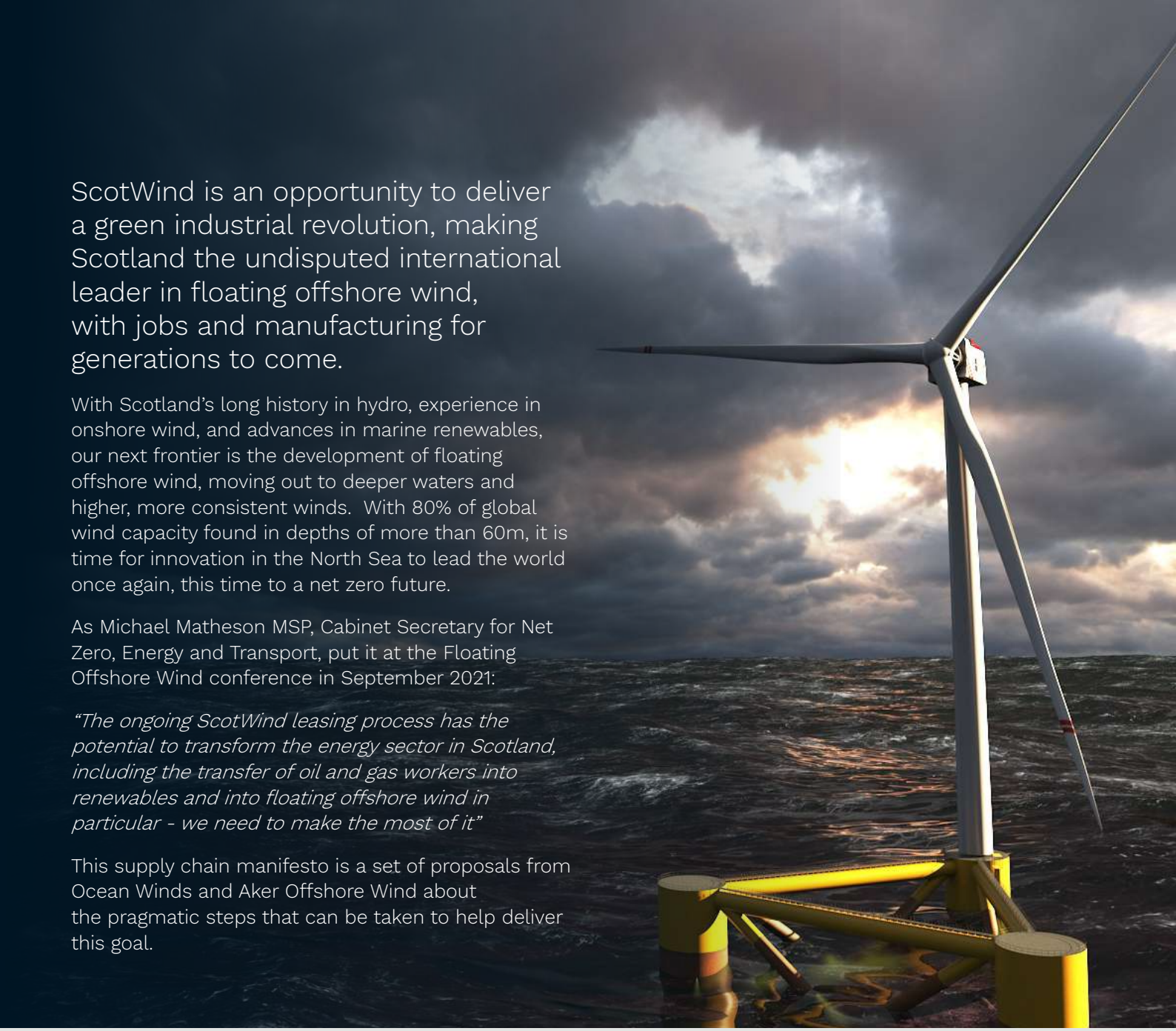
# Executive Summary

**Ocean Winds and Aker Offshore Wind are committed to delivering a green industrial revolution in Scotland with the jobs, manufacturing and supply chain to support generations to come.**

Our key commitments include:

1. **Delivering up to 6GW capacity and investing the equivalent of up to £15 billion**
2. **Each proposal is estimated to generate circa 5,000+ jobs and 200 apprenticeships in Scotland across all project stages**
3. **Commitment to 60 percent local supply chain content from the UK, of which 40 percent minimum content will come from Scotland**
4. **Invest and attract a globally competitive fabrication yard into Scotland for steel fabrication and assembly of floating substructures**
5. **Ports and harbours investment alongside other support infrastructure facilities**
6. **Over £200m million in supply chain investment, to prepare companies in Scotland to meet demand**
7. **Facilitating the energy transition from oil and gas to renewables**
8. **Commitment to skills development, re-training, diversity and apprenticeships**
9. **Confidence in our ability to bring down the Levelised Cost of Energy (LCoE) for floating offshore wind**
10. **Bringing our decades of experience working in the deep waters off Scotland to make floating offshore wind a global success story for Scotland**



ScotWind is an opportunity to deliver a green industrial revolution, making Scotland the undisputed international leader in floating offshore wind, with jobs and manufacturing for generations to come.

With Scotland's long history in hydro, experience in onshore wind, and advances in marine renewables, our next frontier is the development of floating offshore wind, moving out to deeper waters and higher, more consistent winds. With 80% of global wind capacity found in depths of more than 60m, it is time for innovation in the North Sea to lead the world once again, this time to a net zero future.

As Michael Matheson MSP, Cabinet Secretary for Net Zero, Energy and Transport, put it at the Floating Offshore Wind conference in September 2021:

*"The ongoing ScotWind leasing process has the potential to transform the energy sector in Scotland, including the transfer of oil and gas workers into renewables and into floating offshore wind in particular - we need to make the most of it"*

This supply chain manifesto is a set of proposals from Ocean Winds and Aker Offshore Wind about the pragmatic steps that can be taken to help deliver this goal.

## Ocean Winds and Aker Offshore Wind - the world's most proven and capable floating wind developers

**Ocean Winds (OW) and Aker Offshore Wind (AOW) are global engineering, offshore wind, and supply chain specialists.**

OW and AOW are bidding in the ScotWind process for combined developments of up to 6GW of floating offshore wind in the Outer Moray Firth, investing the equivalent of up to £15 billion and creating more than 5,000 jobs per proposal across all project stages. Our vision is to make Scotland a global leader in floating offshore wind delivering clean energy which is affordable, sustainable and secure.

We have joint majority ownership of Principle Power Inc (PPI), which has developed the world's most proven floating offshore wind platform technology Windfloat®. OW has 1.5GW in construction, 1GW in secured projects, and 3GW in advanced development – a total of 5.5GW in total gross capacity, including the 950MW Moray East offshore wind farm and is the fourth largest operator of wind power worldwide. AOW has decades of offshore energy development through the Aker group of companies. Aker has been instrumental in the design and deployment of more than half of all floating offshore installations in the world, has decades of experience in Scotland, including a global subsea centre of excellence, and has created significant export capacity in oil and gas. Together with Principle Power Inc and their Windfloat® technology, the partners are the most experienced developer, design, engineering and supply chain group operating in floating offshore wind in the world today.

# 1. Sparking a Green Industrial Revolution in Scotland – The journey has begun

Floating offshore wind is a new industry. The ScotWind process will create the critical mass required to attract manufacturing in Scotland. Scaling up floating offshore wind from the current largest site (50MW) to develop the UK-wide pipeline (8.8GW) and global pipeline (54GW) will require supporting the supply chain in Scotland early enough to be ready to meet demand and bid competitively in a global market. **OW and AOW have committed, if we are successful in ScotWind, to invest and attract a globally competitive fabrication yard into Scotland for steel fabrication and assembly of floating substructures.** We have already started implementing the necessary first steps:

i. **Commit early to a floating platform technology:** With our majority stake in the world's most proven floating wind platform (PPI's WindFloat® technology), we have the certainty to commit, plan and prepare to technically and financially support the establishment of a manufacturing facility in advance of the construction phase and capitalise on first mover advantage of a new global industry. OW and AOW investment in and commitment to WindFloat® a semi-submersible, three-column floating platform compatible with any standard offshore wind turbines and suitable for deployment in waters deeper than 40m, enables us to plan ahead, which is critical for manufacturing companies to understand the facilities and investment they need prior to project execution start up.

ii. **Develop a detailed floating substructure virtual reality model for the offshore site with Scottish experts:** As the technology is proven we are already engaged with the National Manufacturing Institute Scotland, which has developed a virtual reality model of our ScotWind site specific design. This will provide the early information that fabricators interested in building in Scotland need to plan ahead.

iii. **Provide a "blueprint" for the fabrication facility:** Following this, the virtual reality model will be extended to provide advice on an optimum fabrication facility. This will serve as a blueprint for a range of international fabricators who are interested in locating in Scotland – a number of whom Ocean Winds and Aker Offshore Wind are already in discussion with. Likewise, early input from fabricators on what is achievable at fabrication sites in Scotland will enable us to optimise the design early to match capabilities. The scale of development from ScotWind will attract the right manufacturers to build industrial strength in Scotland.

iv. **Invest directly in the facility:** Finally, if OW and AOW are successful in ScotWind, we will invest significant (millions) funds in establishing a fabrication facility in Scotland with the right partner.

OW and AOW have already undertaken a complete assessment of Scottish port infrastructure, supply chains, local fabrication and assembly – with over 30 Memorandums of Understanding (MoUs) in place across the supply chain in support of our bid and the early action needed.

## 2. An opportunity for the energy transition

Scotland is a globally recognised leader in oil and gas. Floating offshore wind provides the sector with a significant opportunity to transition existing oil and gas supply chains and skills to renewables.

As floating wind structures get bigger the floating foundations will make up a large proportion of the spend and have the greatest potential for local manufacturing. The oil and gas industry has decades of floating structure optimisation and with its strong engineering workforce will advance technologies that deliver cost competitive floating wind platforms at scale. This optimisation has already been delivered by Ocean Winds in Moray East where costs were reduced from £114/MWh to £57.50/MWh in less than three years. The same is true for the transition to renewables on moorings, cables, digital remote operations and many other transferable innovations developed within oil and gas.

The work carried out by the University of Strathclyde and others such as Scottish Enterprise, Highlands & Islands Enterprise and ORE Catapult will also inform our planning and support our early investment choices.

**In line with that, we have committed to:**

- **Early enabling investment of tens of millions in building supply chain capability from 2022 to 2025, ahead of any consent being received. We firmly believe, with our supply chain heritage, that early investment is needed if we want Scottish capability to be built ahead of the project execution phase when globally competitive tenders are sought.**
- **Minimum 60% local UK content in our ScotWind bid (with at least 40% in Scotland);**
- **The early development of local facilities to be able to maximise the extent of locally supplied equipment and labour, optimisation of facilities for mass production and delivery of cost competitive solutions.**
- **Support Scottish suppliers to not only meet the demand in Scotland but, as market leaders, meet demand from the rest of the UK, European and global floating offshore wind industry.**

## 3. Enabling technologies

It is not only the floating platforms, turbines, energy services, ports, fabricators and many other aspects that go into the construction of a floating offshore wind site. We will also require many enabling technologies such as substations and cabling. This can provide Scotland with further significant technology and export opportunities, and OW and AOW have already made progress in this area.

We have outlined plans to utilise Scotland's first offshore wind underwater substation as part of our bids. The multi-million subsea innovation would be developed, manufactured, and supplied in Scotland by Aker Solutions and provide major export opportunities for Scottish businesses. Not only this, but our innovative approach has already brought cost reduction advantages through fewer components, no rotating parts, stable temperatures and increased reliability.

In addition, floating offshore wind is proceeding in different locations globally. If Scotland can move first, capitalising on our offshore wind and oil and gas supply chain strength, we will maximise the first mover advantage afforded us through ScotWind.

OW and AOW, working with PPI, bring with us the most real-world experience in using semi-submersible floating turbine design. The decade-long journey to develop and mature Principle Power's WindFloat® technology and operation in multiple offshore locations has resulted in the experience which gives this consortium a head start of several years. We are the partnership with the most advanced developers along the LCOE learning curve in deploying floating wind, and together represent the most capable partnership able to deliver at scale.

# 4. Skills

An early focus is required on both the supply chain and the skills to support the development, fabrication, transportation, integration, and installation of floating offshore wind in Scotland.

OW and AOW estimate each project will create more than 5,000 jobs and 200 apprenticeships in Scotland across all project stages. This adds to the 20,000 already employed by both companies in the UK and Ireland.

The energy transition is a once-in-a-generation opportunity. The establishment of a floating offshore wind industry in Scotland with a decades-long pipeline of development and export potential will invigorate a broad expansion of the workforce skills in Scotland.

Collaborative working between the industry, government, education and skills agencies, specialists in re-training and many more is essential. That work needs to start now.

OW and AOW have already signed a number of MoUs with skills-based organisations and would welcome the opportunity to work with government and other agencies to ensure early delivery on the skills agenda. Our plans involve working with top Scottish universities to develop industry-focused curricula, offer training solutions for energy professionals to transistion from the oil and gas sector and deliver collaborative research for innovation in the offshore wind sector. We are committed to creating career pathways directly to OW and AOW and to our extended network of partners through graduate schemes, internships and apprenticeships. Lastly, we will explore commissioned research services for areas of specialism to strengthen the commercial links of Scottish universities, as already commenced with University of Strathclyde.

We are committed to developing the skills and improving the diversity of the sector as part of our ScotWind bid through a commitment to 400 funded apprenticeships and independent accreditation.

# Conclusion

OW and AOW are committed to delivering a green industrial revolution in Scotland with the jobs, manufacturing and supply chain to support generations to come.

We have set out our thoughts on the conditions to make this a reality and want to reiterate our expertise, leadership and investment commitment to achieving this in Scotland.

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