

SPECIAL REPORT

WIND INVESTMENT TRENDS 2022

Growing global ambitions and mounting costs are raising the heat on companies in the wind sector. What are the big opportunities and challenges post-pandemic?

February 2022

Acknowledgements

A Word About Wind and Tamarindo Group would like to thank the following industry leaders for their participation in the Wind Investment Trends video series that we recorded in late January and early February. We have shared some of the key insights from those videos in this report.

Barry Lynch, Partner & Head of Operations, Actis

Carlos Martin, Chief Executive Officer, BlueFloat Energy

Clément Weber, Managing Director, Green Giraffe

Joost Samsom, Partner & Co-Founder, Voltiq

Juha Sarsama, Chief Executive Officer, Ilmatar Energy

Jude Leblanc, Partner, McGuireWoods

Kate Tuohy, Vice President of Energy Team (EMEA), MUFG

Mathias Bimberg, Head of Infrastructure, Prime Capital

Michael Hannibal, Partner, Copenhagen Infrastructure Partners

Nick Cole, Business Director, Financial Assurance, UK & Ireland, DNV

Thomas Carpenter, Principal Consultant, Taylor Hopkinson

You can watch all the full interviews at: www.awordaboutwind.com/insight/video/



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Summary

Is your glass half full or half empty? Whether you are an optimist or a pessimist, you can find evidence about the health of wind as we enter 2022 to justify your view.

There is plenty for the optimists to point to. Global investment in renewables projects including wind and solar farms grew 6.5% year-on-year in 2021 to \$366bn, according to the 'Energy Transition Investment Trends 2022' report by Bloomberg New Energy Finance. Corporates bought 31.1GW of green power via long-term contracts in 2021, up 24% year-on-year; and the UK's ScotWind tender started 2022 with a bang.

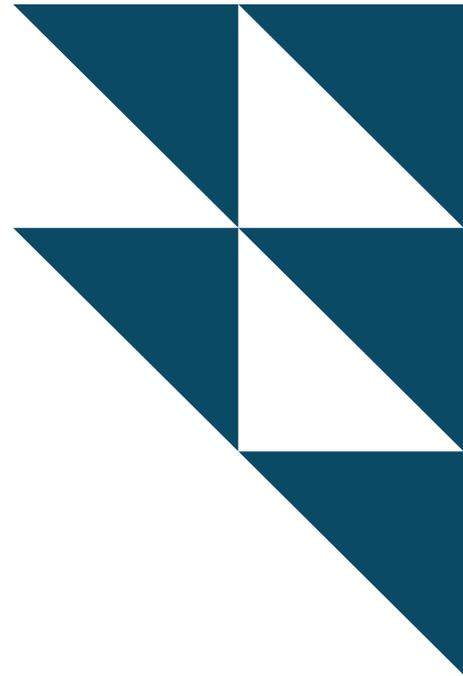
But the pessimists do not need to look far for their own evidence. Raw materials and transport costs are weighing on the results of global turbine giants such as Siemens Gamesa, GE Renewable Energy and Vestas, with knock-on effects

through the wind value chain. Slow permitting continues to be a drag on the sector's growth across the world; and there is the ongoing disruption caused by the Covid-19 pandemic.

Of course, the experience of any sector is never simply good or bad. The truth is somewhere in between. That is why we have spoken to a range of experts from businesses across the A Word About Wind membership community to get their thoughts on the year ahead. In this report, we share ten key trends they believe will shape wind's fortunes in 2022.

This promises to be one of the most interesting years for wind globally since A Word About Wind launched a decade ago.

You can watch all the full interviews at the on-demand video page of our website: www.awordaboutwind.com/insight/video/



1. Price pressures squeeze projects

“Supply chain instability and rising energy prices as well as accelerated cost inflation from raw materials, transport, and turbine components... continued to amplify costs throughout the year, which severely impacted visibility and profitability.”

The above was the warning from Henrik Andersen, group president and chief executive officer at turbine manufacturer Vestas, in the company’s 2021 results announcement on 26th January. It is a warning echoed by his rivals at firms including GE, Nordex and Siemens Gamesa, with impacts that will be felt keenly through the wind value chain in 2022 and 2023.

Joost Samsom, partner and co-founder at financial advisor Voltiq,

said turbine prices had risen 15%-20% in 2021, and said this would put “enormous pressure on investor returns”, especially at projects where power prices were set in competitive auctions.

“That puts projects in a squeeze and, therefore, we actually see the participation of investors in government tenders decreasing, like in the case of Italy recently... which was actually under-subscribed,” he explained.

“That situation may exacerbate also on the back of the rising interest rate environment. If loans get more expensive then that puts further pressure on the business case.”

Kate Tuohy, vice president of the energy team for EMEA at bank

MUFG, agreed that there would be “a little bit of volatility” for wind companies in the near term.

“That will certainly be a challenge driven by inflation. On a number of projects that I’ve worked on recently, the cost increases in raw materials pricing over the last year have been hugely material and I think, to the extent that the cost factors and inflation more generally are persistent, it would lead to some degree of volatility in pricing.”

We have already seen turbine maker Siemens Gamesa respond by making changes to its top team. It will not be the last company to make such changes in 2022.



2. Floating wind projects go large

The Crown Estate Scotland revealed the 17 winners of its ScotWind seabed leasing tender on 17th January.

The result stunned even avid offshore wind watchers, with support awarded for 15GW of floating projects among the 25GW winners. It shows how far floating wind has come to be competitive with fixed-foundation projects.

Carlos Martin, chief executive officer at floating wind developer BlueFloat Energy, said it was “not necessarily a surprise, because floating wind has already planned to be a major driver for growth in the offshore wind industry”. But he said that ScotWind and other floating tenders were important for the delivery of large floating projects.

“I can see an increasing flow of investment going into floating wind all across the value chain, from development to very soon construction and operation, but also on the technology front,” he said. Martin added that the biggest challenge for firms will be to select the projects and investments with the best prospects of success.

Clément Weber, managing director at Green Giraffe, said one of the biggest shifts he has seen for floating wind is that “nobody’s asking whether it works any more... but how to develop more”. He said the ScotWind tender is globally significant and would help wind grow in “a lot of areas where fixed-bottom offshore wind could not be built”.

“In the next decade, we’ll see floating wind catching up with fixed offshore wind and opening up the range of what is possible to build worldwide... A lot of developers, and also a lot of investors, want to be involved in this space. Very high appetite, very high opportunity, and still a return that is a bit higher than fixed wind,” he explained.

This is one part of the wind sector that can already claim that 2022 has been a success.



3. Biden targets grid and supply chain

Offshore wind is one area that our speakers identified had been a success in the US during the first full year of the Biden administration.

Its support for offshore wind had helped remove obstacles to the 800MW Vineyard 1 project in US waters off the coast of Massachusetts, and meant that the project was able to achieve financial close in September 2021. The project has been developed by Copenhagen Infrastructure Partners and Avangrid Renewables.

Jude Leblanc, partner at US law firm McGuireWoods, said this was an area where the Biden administration had been “extraordinarily effective”. He said the approval of Vineyard Wind 1

showed the impact that the US federal government was having on offshore wind, and had given more states the confidence to launch lease auctions. McGuireWoods has been acting on a 2.6GW project in the US for Dominion Energy.

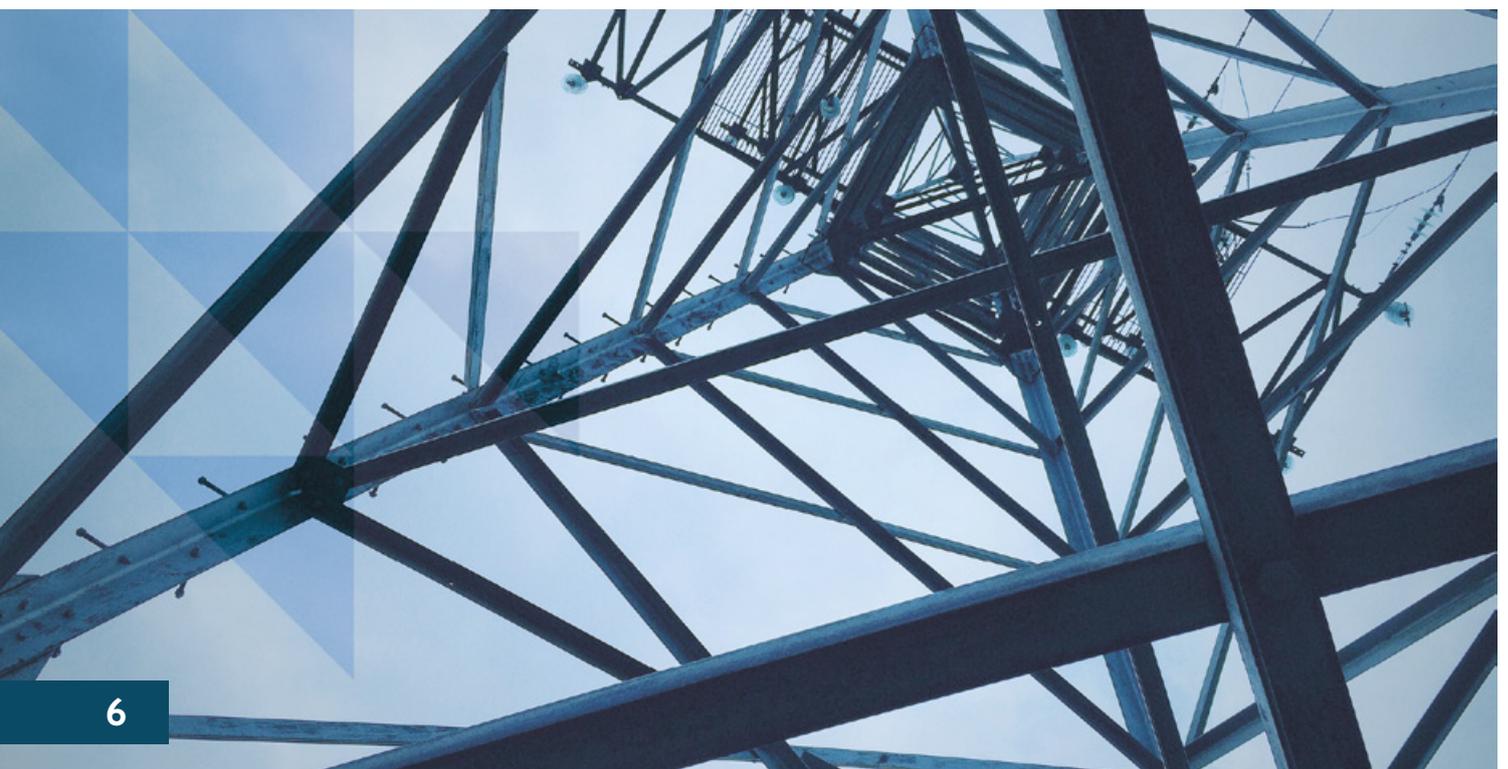
But Leblanc highlighted other challenges for the Biden administration.

One of these is unlocking investment in the electricity transmission network, which is a longstanding concern for US wind developers and investors. He said that action is needed to address problems with stranded onshore wind assets and help the US to deliver the scale of offshore wind that many states are aiming for.

Another is the need to introduce measures to support investment in the US onshore and offshore wind supply chains. He said one part of the solution was to offer 48C tax credits that support advanced manufacturing in sectors such as wind and solar.

“There’s going to be a lot of talk and a lot of investment around the development of the domestic supply chain, given the challenges that we’ve had with the international supply chain over the past couple of years,” he said.

Finally, there will be ongoing obstacles for the administration’s flagship Build Back Better legislation, which may need to now be delivered in smaller bills.



4. Prices stay high amid permitting pain

“Italy is Europe’s prime example for how bad permitting leads to low renewables build-out,” said Giles Dickson, chief executive at WindEurope, on 1st February. He was talking after Italy gave support for only 975MW of projects in a 3.3GW tender.

This is just the latest example of a European country that will struggle to meet its 2030 renewables targets because of slow permitting

processes. WindEurope has called for structural reforms including clearer rules and more permitting staff at the member state level – and has said many governments want to fix the problems.

Until that happens, our interviewees said permitting pain would continue to restrict development opportunities and raise prices. Mathias Bimberg, head of infrastructure at Prime Capital,

said “the pipeline is drying out” and “smaller projects are coming to the market” than previously.

Meanwhile, competition for assets is increasing as more institutional investors seek out renewables as a future-proofed asset class.

5. Momentum increases in power-to-X

Green hydrogen and power-to-X projects have received a huge amount of attention in the last two years, and there appears to be no slowing of the momentum in 2022.

Michael Hannibal, partner at Copenhagen Infrastructure Partners, said power-to-X projects were a “fantastic opportunity” and were the target of the company’s energy

transition fund. It is backing projects in countries including Denmark and Australia.

“If we are to [tackle] the climate challenge, then power-to-X will be a vital part of that in the hard-to-abate sectors: vessels, trucks, airplanes. They need a power-to-X fuel and are not suited well for the green electrons,” he said. This will mean high demand for wind and

solar power, as well as continued electrification of energy markets.

Voltiq’s Joost Samsom agreed that 2022 “is going to be the first year where we really see the emergence of hydrogen projects” reach completion: “That represents a great new customer for the wind sector,” he said.

6. More developers embrace IPP structures

Competition in the market is forcing more developers to adapt their business models.

Juha Sarsama, chief executive of Finnish company Ilmatar Energy, said the firm took the step in May 2021 to broaden out from being a pure developer to an independent power producer. This means that the company needs to invest in generation assets that it can hold for the long-term, rather than shorter-term development cycles.

He said this gave Ilmatar more ways to operate in the renewables market.

“You have a longer-term view of the market and development; and also you have the production under your own belt,” he said.

“It gives you more perspective and tools to operate in the market, and there’s a very clear advantage in the sorts of discussions with landlords. There’s huge competition for good projects, but [it helps] when we tell

our partners that we are there for 30 years to operate.”

Thomas Carpenter, principal consultant at recruitment specialist Taylor Hopkinson, said these kinds of evolutions in business models would lead to skills gaps within teams.



7. Skills gaps force creative thinking

The International Renewable Energy Agency issued a warning for the industry in its 2021 'Renewable Energy & Jobs' annual review: "Despite positive trends and recent developments, skills gaps and shortages are increasing and likely widespread across countries unless proactive measures are taken," it said.

Its contention was that the renewable energy workforce was growing, but not at the speed needed to make a success of the energy transition.

Taylor Hopkinson's Thomas Carpenter said there are enough skilled people working in the renewables market at present, but identified a shortage of people that specialise in wind: "I think we do have a shortage, but that doesn't mean that we don't have the ability to access those candidates. We are able to go out and find the skillset of people from slightly different areas," he said.

He added that the growth of hybrid projects and portfolios will likely mean that more professionals need to become proficient working with different technologies.

8. Offshore wind grows quickly in Asia-Pacific

Almost 17GW of offshore wind capacity was completed in China in 2021, according to the country's National Energy Administration. This means China now operates 26GW of the world's total installed offshore wind capacity.

Our interviewees highlighted that growth would remain strong in offshore wind in the Asia-Pacific

market in 2022, including in China, South Korea, Taiwan and Vietnam. Voltiq's Joost Samsom said: "We expect offshore wind will grow even more quickly, and it has grown more quickly than it has in Europe."

This is in addition to its expansion in new European markets, including the Baltic states and southern European countries including Italy.



9. Greater emphasis on local content in tenders

One aspect of ScotWind that we expect to feature in more tenders is the emphasis on local jobs and economic benefits.

This can be a major differentiator for tendering bodies that want to separate bidders whose bids are otherwise inseparable.

However, CIP's Michael Hannibal said local content requirements "seems to be a global twin of protectionism" and could be an obstacle for the continued growth of offshore wind. Local content stipulations could force developers and manufacturers to invest in building factories where it makes little sense to do so.

"We could have some localisation in Asia and some localisation in Europe, so that we could basically have fully utilised factories. We could have fully utilised supply chains. We could in that way make sure that you get a healthy value chain, where they're not forced to invest into all countries driven by localisation," he said.

10. Increased focus on the health of OEMs

We started this list by discussing the impact of inflation on the owners and operators of wind farms. However, we also expect more focus on how the industry can ensure that original equipment manufacturers (OEMs) are on a firm financial footing.

Barry Lynch, partner and head of operations, energy infrastructure, at global investor Actis said he had concerns about OEMs not being able to keep pace with growth in the market: "There's an awful lot of turbines required, bigger and bigger

machines, and what we worry about [is] increasing manufacturing and maintaining the quality of products and the execution of the projects," he said. That includes discussion about the financial pressures facing OEMs and their access to skilled workers globally.

He added that he wanted to see shareholders in OEMs giving management teams the time they need to address challenges, rather than react too hastily to one or two quarters of share price falls.

"The shareholders in those companies have to take a longer-term view. One quarter or a couple of quarters of share price [falls] and you see management changes, and we heard they were the management team that would deliver the long-term stability of the company. The revolving door, that disappoints us. 'Whose turn is it next to be the CEO of the organisation?' That frustrates us," he said.

This is a concern shared by others in the industry so far in 2022.

Conclusion

Wind companies will come under a series of pressures in 2022.

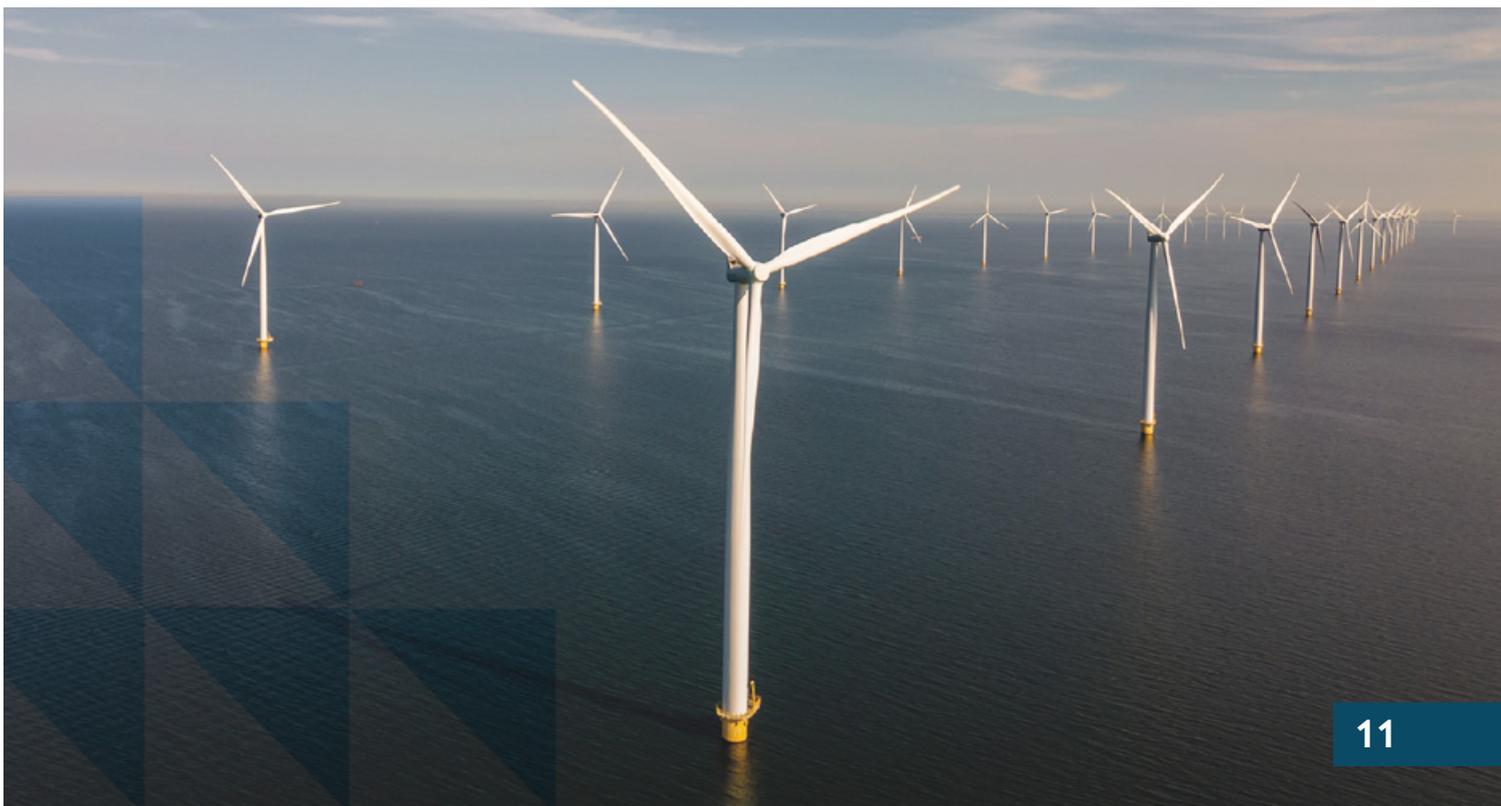
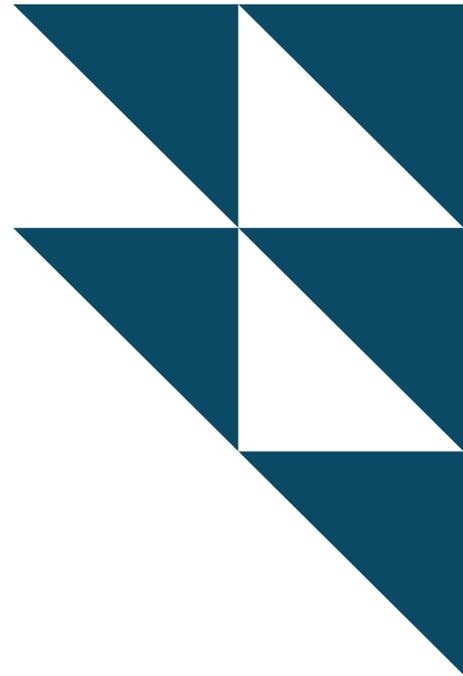
That is to be expected: growing the share of renewables, including wind, in the global power mix is a challenging task. But the industry has coped with similar obstacles before.

Since A Word About Wind was founded in 2012, we have been inspired every week by the major impacts that companies and individuals in this sector have. From larger and more powerful turbines to innovative funding structures and much more, this is an industry that continues to surprise and innovate. This will surely continue in 2022.

There is also a trait that united all the speakers in our Wind Investment Trends 2022 video series. That is their total commitment to growing the role of wind in the global energy mix. They are optimistic that not only is the energy transition possible but that it is happening, and it will offer plentiful opportunities for entrepreneurial companies.

From onshore wind in the resurgent German market to offshore wind in all corners of the world, and new technologies such as power-to-X, this is a hugely exciting sector.

For more, you can watch all the full interviews at the on-demand video page of our website: www.awordaboutwind.com/insight/video/





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