The winds of change

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Delivering climate neutrality requires adequate new national energy strategies, policies, and regulatory frameworks to be in place due to the massive energy transformation needed.

The European Union has been at the forefront of global climate action so far, and is the first major economy to put in place a legally binding framework to deliver on its pledges under the Paris Agreement and it is successfully transitioning towards a low emissions economy, targeting to reach climate neutrality by 2050.

We have useful lessons that can be drawn from the renewables energy industry, showing what can be achieved when there is a joint commitment by governments, energy companies and regulators.

Denmark's energy transition experience can teach very valuable lessons. The transition in Denmark started more or less 50 years ago, when the oil crisis rocked the world in the 1970s and Danish industries had to shut down; at that time almost 90% of the energy was coming from imported oil.

From the oil crisis of the 70s, via the first offshore wind farm in 1991, today 44% of electricity in Denmark is supplied by wind and solar power. So far from the 90s their carbon emissions dropped by 38%, while its GDP more than doubled.

The significant share of green energy in the Danish electricity system is a result of ambitious national strategies laid down in the 70s and supported for their implementation by fit for purpose energy policies and regulatory frameworks.

In the 70s the oil crisis was the trigger for the start of the energy transition in Denmark: could the Covid-19 pandemic act similarly as a trigger and have a catalyst effect on the energy transition process of several countries?

The green transition is increasingly taking over the global political agenda and the renewable energy industry can play an important role for revitalizing economies hit by the Covid-19 crisis.

In the EU there is the vision that renewable energy should be at the very heart of a green recovery from the coronavirus pandemic. In the EU recovery plan launched in May, strong emphasis is on supporting the green transition to a climate-neutral economy.

What role can play the offshore wind industry in powering a climate-neutral economy and helping economies to emerge from the pandemic crisis?

In the long term the offshore wind industry can be crucial in delivering climate neutrality objectives and in the short/medium term helping the response of EU economies to the pandemic crisis, unlocking significant investment in the industry supply chain to create more green jobs in the EU.

For many years, the killer argument against offshore wind has been its extraordinary cost.

The offshore wind sector has experienced an unparallel growth in the last decade, increasing spectacularly its installed capacity (being 2019 its best year for installed capacity), and with its cost steadily declining.

The cost of offshore wind energy has been dramatically declining and auction strike prices in Europe indicate that costs have dropped of nearly 60% in the last 3-4 years.

The main driver of the cost reduction has been the installation of bigger turbines. Since 2014 the average rated capacity of newly installed turbines has grown at an annual rate of approximately 16%. This cost reduction trend is due to continue, as the development of floating technology will unlock the wind resources of new marine areas.

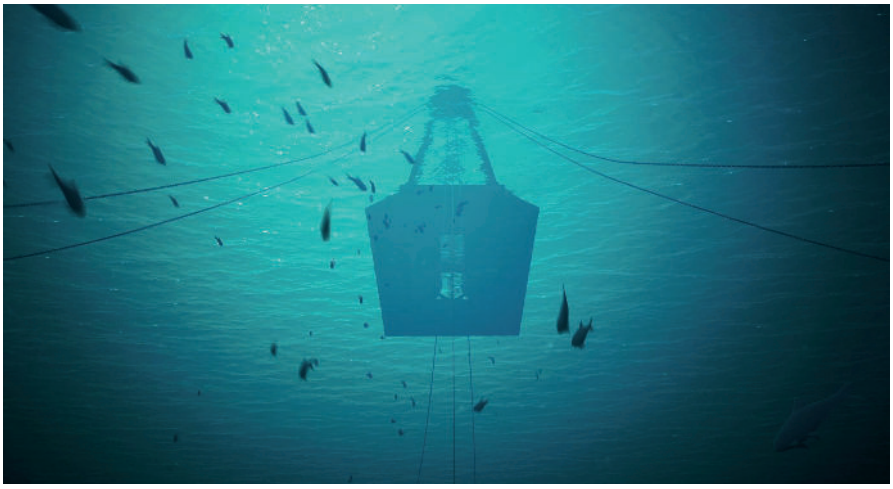
Despite all these significant achievements, offshore wind barely accounts for 0.3% of global power generation. Its deployment, so far, has been limited to relatively shallow waters (less than 60m), and this was partly due to the limitations of the existing floating technology.

What is the next step for the offshore wind industry to increase its share of global power generation, becoming a key player in the energy transition for many countries?

It is time to move few steps off the shore towards deeper waters.

UK is the leading country in the world, when it comes to installed capacity for offshore wind, but for Scotland, an estimated 70% of its offshore wind resources are in water deeper than 60m.

The Scottish government with the first cycle of ScotWind Leasing, launched in June, is taking these needed steps. The scope of the first cycle of ScotWind Leasing is to grant up to 10 years option on property rights for seabed in Scottish waters for new commercial scale bottom-fixed and floating offshore windfarms.



ScotWind has the potential to deliver the green electricity needed to power every Scottish household, helping Scotland achieve its net-zero emissions target by 2045. The total investment in ScotWind Leasing projects is expected to exceed £8bn, playing a major part of Scotland's green recovery and aiming to generate local jobs across the country.

ScotWind will be a milestone for the offshore floating wind industry, and we are excited to be involved in this pioneer leasing process for the floating wind industry. We have high expectations to demonstrate the competitiveness of our floating technology and to show how we can contribute to the development of the floating industry.

The spotlight will be also on another European country, France, with the first commercial scale floating tender coming up in 2021 in France. The French Government has just started public consultation on plans to build up to 750MW of floating wind off the coast of Brittany, aiming to launch the 250 MW tender in 2021 and a 500 MW tender in 2024. Two 250 MW tenders for floating wind farms in the Mediterranean Sea will follow in 2022.

The commercial tender in Brittany in 2021 will mark a key milestone in the floating wind industry, putting a price on a commercial floating wind farm for the first time, and expecting to draw the attention of all the industry, with large utility energy players and oil giants on the frontline. It is interesting to observe that France does not have any commercial offshore wind farm operative, and this is mainly due to the failures of an unfit regulatory framework. The floating sector will benefit from the changes and improvements introduced in national regulatory frameworks.

Commercial scale offshore floating wind farms are heavy-capital investment projects that require 5-7 years from their inception to their start of operation.

These projects need to have a strong commitment from government and policymakers and good long-term planning, with all parties coordinated to ensure they are all rowing in the same direction.

The offshore wind industry started in Europe, finding a fertile ground for commercial wind farms in the North Sea propelled by European countries having energy policies and regulatory frameworks suitable for developing offshore wind farms, and with an established supply chain in place due to their onshore wind industry.

We observed the installation of the wind turbines moving from the hills to the sea close to the shoreline on bottom-fixed foundations. From a technological point of view, the increase in terms of size and generation capacity of wind turbines had a significant impact on the commercial viability of wind farms in the sea.

The onshore wind deployment picked up in the mid-90s, and the bottom-fixed offshore sector followed a similar growth path with 15-20 years difference.

The following steps in the development of the wind industry imply globalizing by moving to deep waters, by introducing in the industry new bigger turbines to be installed on floating technologies. If we run a comparison between the mentioned shifts in the wind industry, we can observe that the development of the floating technology is the differentiator between the mentioned shifts.

Reaching deep waters, will open new markets in the short/medium term in Europe, California, and major Asian markets such as Japan and South Korea.

The bottom-fixed offshore wind industry taught us that wind resources and mature technologies are not the only factors of the equation.

Commercial scale offshore floating wind farms need high capital investment and time. The energy industry to make the required investments, needs national energy plans, political stability, tailored energy policies, national regulatory frameworks.

It is not a case that the offshore wind industry took off in countries like UK, Denmark, Germany, were this certainty and stability for the investment was ensured. Countries without an offshore wind regulatory framework in place are unlikely to draw the attention of developers and energy companies.

Stable national regulatory framework conditions and the right energy policies are the conditio sine qua non for attracting such high capital investments.

With all the above conditions in place, floating offshore wind costs are very likely to decline following a similar trend of its more mature predecessor, and probably at a faster speed, as the industry can derive useful lessons from the bottom-fixed offshore wind industry experience, and up to a certain extent sharing the same supply chain, and benefitting from floating technologies born with an innovative spirit.

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