ADVYCE - INDUSTRY INSIGHTS

Windpower – Preparing for profitable growth

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Windpower – Preparing for profitable growth

Mid to long term prospects for wind turbine manufacturers seem to be excellent. With projected new installations of consistently more than 20GW per year in Europe in the next five years the past years of stagnation at around 15GW seem to be over. However, all western manufacturers are currently facing financial challenges. In the first two quarters of 2022 all of them experienced negative EBIT-margins. Part of the problem is that by the time the projects currently in installation and commissioning have been signed at a time when raw material prices for steel, copper and other major components where well below current levels and most contract do not contain adjustment clauses for that. A circumstance which is quite normal in other EPC businesses (Engineering, Procurement & Construction). Tough competition among wind turbine manufacturers has made it possible for investors and developers to pass most of these risks on to the bidders in the auctions and they accepted it. Additionally, with the start of the COVID-19 pandemic material costs and availability has just gone through the roof increasing the expenses far more than expected but also causing delays and interruptions in the supply chains. How can manufacturers get back on track and maneuver through at least two more challenging years? What can politics and regulators do to bring the eco-system back into balance? And what needs to be done to maintain our independency and technological leadership in this industry?

1. EUROPEAN MARKET

First and foremost the European Union has been driving a number of measures combined in the European Green Deal aiming at a minimum reduction of 55 % of greenhouse gas emissions compared to 1990 by the year 2030. Which is just eight years from now. Long-term goal is to become carbon neutral by 2050. Latest activities include the new EU-Taxonomy directive EU2020/852, which is aimed at distinct definitions for climate friendly economic activities and direct investors to preferably support these projects. In May 2022 the EU commission has provided the REPowerEU plan to foster activities for increased energy efficiency, production of clean energy and diversification of energy supply in Europe.

It almost seems as if a number of countries instantly accelerated the expansion of renewable energy production resources, at least when looking at newly installed wind power capacity and the projections for the years to come.

Wind Europe, one of the leading European organizations of the wind power industry in Europe, projects an average of 23GW of new installations in the years 2022 to 2026, 18 GW of which to be installed in the EU-27 member states.

NEWLY INSTALLED WIND POWER CAPACITY IN EUROPE

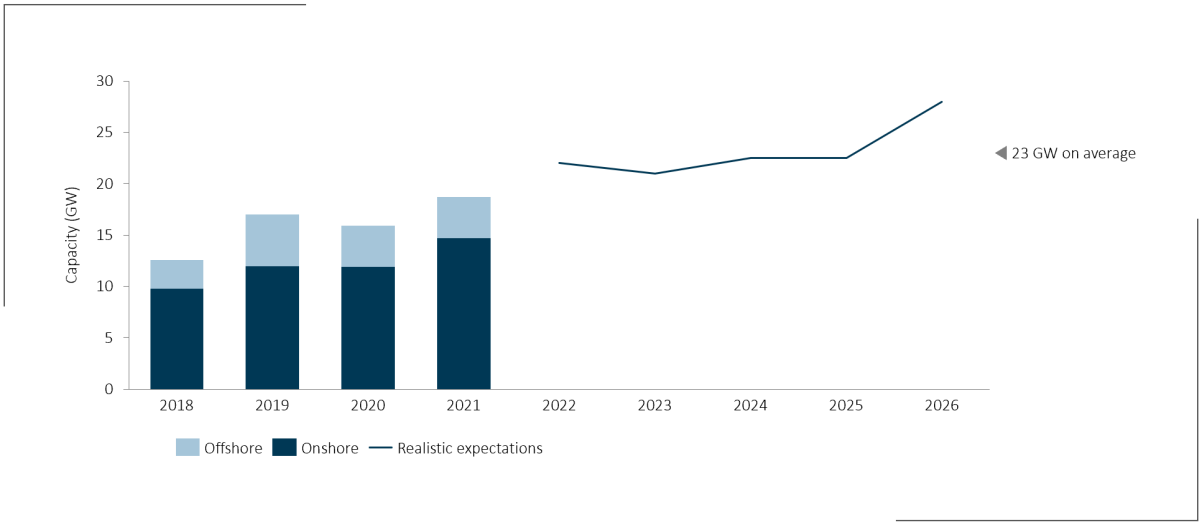

Exhibit 1: *2022 - 2026 new onshore and offshore installations in Europe – realistic scenario aims at in average 23GW p.a. (Source: Wind EUROPE 2021 Statistics and the outlook for 2022-2026)*

2. DO YOUR HOMEWORK

Even though wind turbines have become quite usual in many parts of Europe the industry is still rather young. Between the mid 1990's and today it went through several waves of growth and stagnation. However, never before competition has been as severe as it is today. And with rising stars from China it has become even tougher to compete. German IWR institute ranks seven Chinese wind turbine manufacturers among the global top ten.

The good news is, most of the European and American developers and investors still rely more on non-Chinese manufacturers for various reasons. However, this might change if the lowest CAPEX-value for new installations remains the leading criteria.

However, there are still a number of chances Western manufacturers must seize to sustain and even expand their positions in global markets.

Number 1 is Innovation Speed. Developers and investors of wind farms first and foremost want to earn money with producing green energy in any form. In future it does not have to be electricity alone but increasingly green hydrogen, ammonia or even e-fuels for aircrafts (and one day maybe also other vehicles). Also, validation and homologation need to be as much digitized as possible to save time and efforts during physical prototyping. Ideally, the physical prototype is > 90 % the same as the later serial engine.

Number 2 is Commercial or Sales Excellence. This is a tough decision, but it makes sense to think back from the market and decide early on which opportunities to go for and, ultimately, which not. Also, a project is not over when commissioning has been completed. As the installed base increases, service, retrofit and repowering business becomes an increasingly important pillar for busi-

ness stability and profitability.
Number 3 is Operational Excellence. We are talking about large and complex machines that require highest quality from the first step of the production process starting at the suppliers until commissioning on the site where they will produce clean energy for the next 25 years at least. Moreover, the product life cycle is rather short due to the innovation speed as said in Number 1. So, supply chains must be configured and operated with a high degree of adaptability and resilience at the same time. Project planning and execution must be aligned within the project portfolio and throughout the entire supply chain. Real-time monitoring, quick data and fact based decision procedures need to be in place and ultimately adhered to.
Last but not least, *Number 4* is People, Culture & Leadership. As wind power technology is one of the major pillars to provide emission free power generation, people taking on this challenge do it with purpose. It is their contribution to fight climate change and transform the energy ecosystem. Hence, organizations must be designed to foster effective and efficient processes, distinct responsibilities, transparency and traceability of decisions and directions. Leadership is all about orientation, decision support, motivation and integrity within the organization and in cooperation with customers, partners and suppliers.

3. REGULATORY ENVIRONMENT

In June 2022 the German government provided a new bill known as the "Wind-an-Land-Gesetz" (Wind Onshore Bill) enforcing the federal states to provide considerably more land for onshore wind power generation. Goal is to dedicate at least 2 % of Germany's area for wind farm operations. This shall be achieved by the bill until the end of the year 2032. Currently only half of this area is officially designated for wind power generation.
The federal government as well as state legislations have committed to dramatically accelerate the planning and approval procedures. However, investors and developers should consider the long-term perspectives. Criteria like resilience of operations, expandability and ability to add capabilities for Power-to-X (green hydrogen, Sustainable Air Fuels etc.) should be considered in the respective development plans for upcoming projects.
This needs to be thoroughly reflected in the project plans and the subsequent auction regime. Windpower OEM's need to prepare to provide system solutions or at least the feasibility to further develop the wind farms into co-generation plants for electricity, green hydrogen and liquids and even heat. This will require even more collaborative and consortial approach in future project development and implementation.

4. CONCLUSION

There are several imbalances in the wind power business ecosystem today that need to be overcome quickly. The fight against climate change, expanding the infrastructure necessary to meet the targets set by the Paris Climate Agreement on global scale and the EU Green Deal in the European context requires collective effort. Wind Power OEM's have a crucial role in this process since they provide the core technology which is the basis for future sustainable, emission free, reliable and affordable energy supply. We are at a critical point in time which will be decisive for the next

decades and for the continuity of our planet as we know it. There is no lack of good intensions and ambitions. Now is the time to act, adjust and take the necessary decisions to bring all of them into reality, soon.

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