

DIRECTION

THE FUTURE OF WIND



A notable shift toward renewable and green energy owing to climate change, rising focus on reducing carbon emissions, and depletion of fossil fuels are major factors driving the market growth. (Courtesy: Shutterstock)

Report: Offshore wind market to grow by 17.7% annually

Global offshore wind power will grow at a rate of 17.7 percent each year from 2021 to 2027, accumulating \$52.94 billion by the end of 2027, according to Market Study Report.

The report provides a work plan for stakeholders for 2021 to 2027, with predictions for size, shares, and growth patterns.

The document also offers analysis of the sub-markets, including type, application range, and geographical landscape, thus uncovering the major avenues for investment in the coming years.

A notable shift toward renewable and green energy owing to climate change, rising focus on reducing carbon emissions, and depletion of fossil fuels are major factors driving the market growth.

Introduction of advanced technologies and energy-efficient solutions, along with prominent companies undertaking initiatives to reduce their carbon footprint and contribute to a greener planet and sustainability, are adding to the overall market size.

On the downside, high capital costs and various issues related with operations, transportation, maintenance, and logistics are likely to impede the industry progress over the projected timeline.

The report's geographical analysis of the worldwide offshore wind-power industry extends to Asia Pacific, Europe, Middle East and Africa, North America, and Latin America.

The Germany market holds a 57 percent share, while Denmark accounts for a 12 percent market share.

The offshore wind energy market will witness substantial growth over the forecast timeframe owing to the growing demand for clean energy and increasing focus on reducing carbon emissions and promoting environmental conservation.

MORE INFO www.marketstudyreport.com

BOEM, NOAA to collaborate on offshore goals

The Bureau of Ocean Energy Management (BOEM) and the National Oceanic and Atmospheric Administration (NOAA) signed an interagency memorandum in support of the Biden-Harris administration's offshore wind energy goals to advance wind energy responsibly while protecting biodiversity and promoting cooperative ocean use.

The administration set a goal of increasing the nation's offshore wind-energy capacity. This new agreement underscores BOEM's and NOAA's commitment to responsibly deploy 30 GW of wind energy production capacity in federal waters by 2030. The memorandum will help leverage the responsibilities, expertise, and relationships of both BOEM and NOAA in support of the goal by outlining areas of cooperation and creating a framework to develop future, more detailed agreements related to specific program areas.

"We are already seeing the impacts of climate change on communities across the country and the ocean resources that we manage," said BOEM Director Amanda Lefton. "Now is the

time to act. Working together, we will further advance offshore wind, which can play a critical role in meeting our country's energy needs while combatting climate change and creating new family-supporting jobs."

"This agreement and the collaboration between BOEM and NOAA show that fighting climate change and responsible resource management go hand-in-hand," Lefton said.

"This agreement is powerful and timely as we face climate change head on," said NOAA administrator Rick Spinrad, Ph.D. "It will help ensure coordination, collaboration, and alignment by NOAA and BOEM at key decision points in support of the Administration's offshore wind energy goal."

"It will also provide specific pathways for NOAA data and services while protecting our ecosystems and marine resources," Spinrad said.

MORE INFO www.boem.gov

NewHydrogen reports progress on reducing green hydrogen cost

NewHydrogen, Inc. a developer of green hydrogen technologies, report-



The new agreement underscores BOEM's and NOAA's commitment to responsibly deploy 30 GW of wind energy production capacity in federal waters by 2030. (Courtesy: BOEM)

ed progress in its technology program and its efforts to reduce the cost of producing green hydrogen.

In 2021, the program developed a non-precious-metal-based catalyst with significant improvement of oxygen evolution reaction (OER) in acidic conditions for proton exchange membrane (PEM) electrolyzers (a device that splits water into hydrogen and oxygen). Researchers then improved the catalyst performance by modifying the structure and optimizing loading conditions. Most recently, application of a unique surface engineering technique further improved the long-term stability of the catalyst. Higher stability implies reduced operating cost of electrolyzers in the longer term.

In a parallel effort, researchers have been developing hydrogen evolution reaction (HER) catalysts for alkaline electrolyzers. Their work is focused on developing platinum-based HER catalysts that use significantly less platinum, as well as a new type of HER catalyst that does not use platinum. To date, progress has been made on both fronts.

"Prior to scaling up the process for studies with a prototype electrolyzer in late 2022, researchers will continue to explore additional improvements to both the OER and the HER catalysts to maximize the overall performance of an actual water electrolysis device," said Dr. David Lee, CEO of NewHydrogen. Trends in 2022 point to hydrogen produced from renewable sources becoming a key component of a sustainable energy future, NewHydrogen reported.

Despite market uncertainty in many sectors, the global push toward realizing a green-hydrogen economy remains strong entering 2022. In Europe, the green-hydrogen supply chain is growing rapidly, especially in Spain, France, and Germany. As noted at the recent conference of the Green Hydrogen Coalition, the German government is transitioning its energy resources to green hydrogen and away from coal and natural gas, with all dispatchable energy to be hydrogen-sourced.

In the United States, the recently passed federal infrastructure bill included \$8 billion to develop regional clean hydrogen hubs, \$1 billion to decrease the cost of electrolytic hydrogen production, \$500 million for a clean hydrogen manufacturing and recycling program to support domestic supply chain development, and a grant program to support EV and fuel cell EV infrastructure.

The HyDeal LA initiative, close to NewHydrogen's southern California home, is creating a green-hydrogen hub across the Los Angeles area. The hub is building support for production, transport, and storage of green hydrogen, as well as fueling for energy, transportation, industrial, maritime, and aviation industries. The hub is already creating new jobs supporting families in the LA area and providing a model of opportunities that will be available around the world.

The goal of NewHydrogen's sponsored research at UCLA is to lower the cost of green hydrogen by eliminating or drastically reducing the use of precious metals in electrolyzers. Electrolyzers rely on rare-earth materials such as iridium and platinum. These materials often account for nearly 50 percent of the cost of electrolyzers.

MORE INFO www.newhydrogen.com

DNV approved to certify turbines for Korea

DNV, the independent energy expert and assurance provider, has been selected by the Korean Energy Agency (KEA) to deliver Type Certification services for the Korean wind-energy market. This new DNV service for the Korean market will result in a cost-effective process for manufacturers to achieve certification for their wind turbines selected in Korean wind-farm projects. The certification will be granted according to Korean standards and the international certification scheme IEC.

In its latest Energy Transition Outlook Report (ETO), DNV forecasts



DNV forecasts significant scaling of global installed offshore wind capacity from 29 GW in 2019 to 1,748 GW in 2050. (Courtesy: DNV)

significant scaling of global installed offshore wind capacity, from 29 GW in 2019 to 1,748 GW in 2050. In line with this global development, South Korea has plans to increase its wind-energy capacity to realize its commitment to climate neutrality in 2050. According to the Global Wind Energy Council (GWEC), Korea is targeting 9.2 GW of wind power by 2025 and 16 GW by 2030, of which 12 GW will be comprised of offshore wind. To achieve this, the government has announced plans to build an 8.2-GW offshore wind facility, which could become the world's largest offshore wind power plant.

"Those ambitious targets in an emerging wind-energy market like Korea are creating an increased need for extended risk management via globally recognized certification standards," said Kim Sandgaard-Mørk, executive vice president for Renewables Certification at DNV. "Together with our local certification team headed by Young Min Paik, Renewable Certification Director Korea, DNV is now enabled to work more closely with KEA and its customers throughout the wind-turbine certification process, creating trust among stakeholders and enabling a safe and reliable growth of wind energy in South Korea."

"As wind parks will increasingly be erected offshore in greater water depths, harsh climates, and remote locations, we observe that wind-farm developers are also increasingly insisting on certification as a key risk mitigation measure in the technical due diligence process," said Brice Le Gallo, regional director for Asia Pacific at DNV. ↗

MORE INFO www.dnv.com