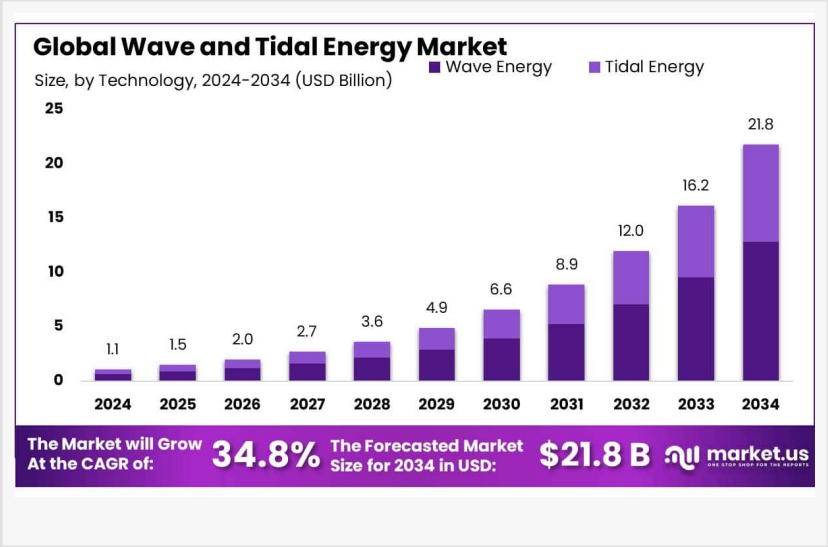
Wave and Tidal Energy Market Encouraged Growth To USD 21.8 Billion by 2034 at CAGR of 34.8%

Wave and Tidal Energy Market size is expected to be worth around USD 21.8 Bn by 2034, from USD 1.1 Bn in 2024, growing at a CAGR of 34.8%



NEW YORK, NY, UNITED STATES, March 6, 2025 /EINPresswire.com/ -- The global Wave and Tidal Energy Market is poised for significant growth, with projections indicating an increase from USD 1.1 billion in 2024 to USD 21.8 billion by 2034, growing at a CAGR of 34.8%. This renewable energy sector harnesses the power of ocean waves and tides, offering a reliable and predictable source of clean energy. Wave energy is generated by wind-driven surface waves, while tidal energy stems from gravitational forces within the Sun-Moon-Earth system.

> Asia Pacific (APAC) emerged as a dominant region in the wave and tidal energy market, capturing more than 45.2% of the global market share, valued at approximately USD 0.4 billion."
>
> *Tajammul Pangarkar*

Recent developments showcase the industry's progress, such as Minesto's launch of the Dragon 12 tidal power plant in the Faroe Islands in February 2024. This 12 MW utility-scale facility utilizes a 28-ton, 12-meter subsea kite to convert ocean currents into electricity, supplying power to the UK's national grid.

The market is driven by increasing demand for renewable energy sources and government support for marine energy projects. For instance, the TIGER project, backed by Interreg Channel funding of USD 46.75 million, aims to develop five tidal energy sites across France and the UK.

Key Takeaways

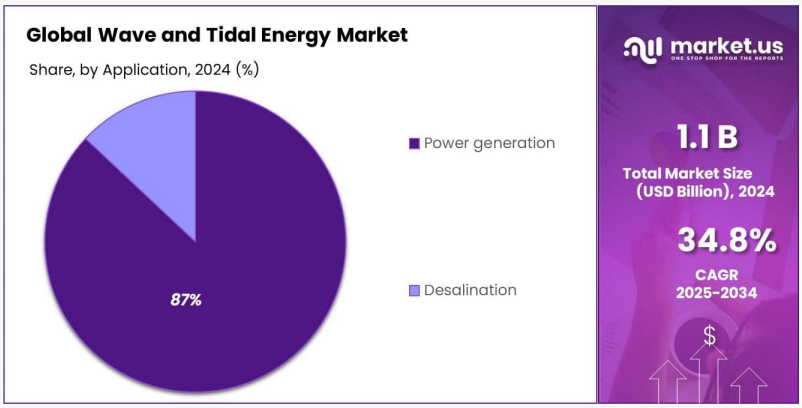
• The global wave and tidal energy market is expected to reach USD 21.8 billion by 2034, growing at a CAGR of 34.8% from 2025 to 2034.

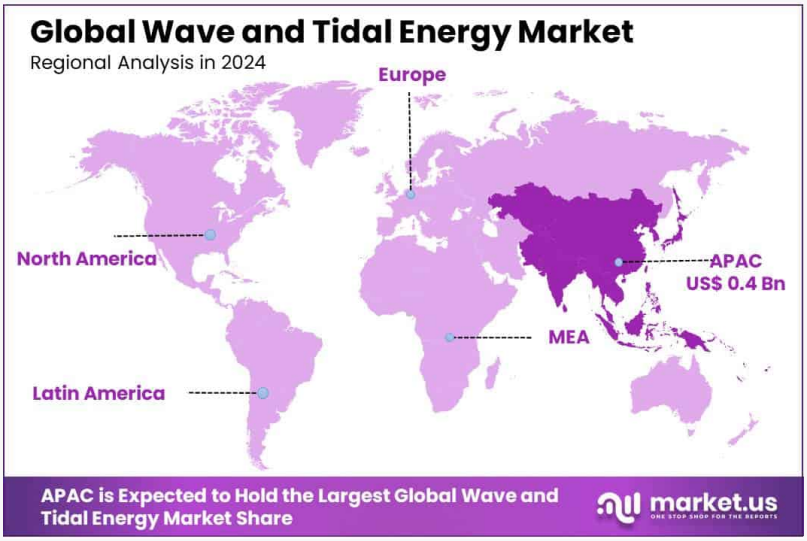
• Tidal energy dominated the market in 2024, holding a 58.3% share.

• Tidal Stream Generator technology captured over 30.3% of the market in 2024.

• Power generation represented over 87.2% of the market share in 2024.

• The Asia Pacific region led the market in 2024, accounting for more than 45.2% of the global market share.





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https://market.us/report/wave-and-tidal-energy-market/request-sample/

Experts Review

Government incentives play a crucial role in driving the wave and tidal energy market. The UK government's commitment to generate 40% of its electricity from offshore wind and marine energy by 2030, coupled with a £175 million funding package for marine energy projects, demonstrates strong support for the sector.

Technological innovations are advancing rapidly, with projects like the TIGER initiative and Minesto's Dragon 12 showcasing the potential of tidal energy. These developments are crucial for improving efficiency and reducing costs, making wave and tidal energy more competitive with other renewable sources.

Investment opportunities in the sector are growing, particularly in regions with strong tidal currents and extensive coastlines. However, risks include high initial capital costs and challenges related to installation and maintenance in harsh marine environments.

Consumer awareness of wave and tidal energy as clean, renewable sources is increasing, driven by growing environmental concerns and the push for sustainable energy solutions. The

technological impact of these energy sources is significant, offering a reliable alternative to intermittent renewables like wind and solar.

The regulatory environment is evolving to support marine energy development, with governments worldwide implementing policies and frameworks to promote growth in this sector. However, navigating complex environmental regulations and obtaining necessary permits remains a challenge for project developers.

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Report Segmentation

The wave and tidal energy market is segmented by type, technology, and application. By type, tidal energy held a dominant position with over 58.3% market share in 2024. In terms of technology, Tidal Stream Generator technology captured more than 30.3% of the market. Power generation was the primary application, representing over 87.2% of the market share. Geographically, the Asia Pacific region led the market, accounting for more than 45.2% of the global market share in 2024.

Drivers, Restraints, Challenges, and Opportunities
Drivers for the wave and tidal energy market include increasing demand for renewable energy, government support through incentives and funding, and the need for reliable, predictable, clean energy sources. The sector also benefits from technological advancements that improve efficiency and reduce costs.

Restraints include high initial capital costs for infrastructure development and installation, as well as challenges related to operating in harsh marine environments. The complexity of underwater construction and maintenance adds to the overall costs.

Challenges facing the industry include environmental concerns, such as potential impacts on marine ecosystems, and the need for specialized equipment and expertise for project development and maintenance.

Opportunities lie in the expanding investment in offshore renewable energy, the potential for hybrid systems combining wave and tidal energy with other renewables, and the growing global focus on decarbonization and sustainable energy solutions.

By Type

• Wave Energy
—— Oscillating Water Columns
—— Oscillating Body Convertor

—— Others

• Tidal Energy
—— Tidal Turbine
—— Tidal Barrages
—— Others

By Technology

• Tidal Stream Generator
• Oscillating Water Columns
• Tidal Turbines
• Tidal Barrages
• Others

By Application

• Power Generation
• Desalination
• Others

Key Player Analysis

The wave and tidal energy market features several key players driving innovation and project development. Companies like ANDRITZ, through its subsidiary Andritz Hydro Hammerfest, focus on advancing marine energy technology, particularly in tidal energy. Aquamarine Power is known for its Oyster wave energy converter, while AW Energy develops the WaveRoller technology for nearshore wave energy generation.

Other significant players include Orbital Marine Power, Nova Innovations, and Ocean Power Technologies, all of which are actively involved in developing and deploying various wave and tidal energy solutions. These companies are at the forefront of technological advancements, working to improve efficiency and reduce costs in the sector.

• ANDRITZ
• Andritz Hydro Hammerfest
• Aquamarine Power
• Aquanet Power
• AW Energy
• BIOPOWER SYSTEMS PTY LTD
• Carnegie Clean Energy
• CorPower Ocean AB
• Eco Wave Power

• Mocean Energy
• Nova Innovations
• Ocean Power Technologies
• Ocean Renewable Power Company
• OceanEnergy
• Orbital Marine Power
• ORPC, Inc.
• SAE Renewables
• SIMEC Atlantis Energy
• SINN Power GmbH
• SSE Renewables
• Tacardo B.V
• Tenax Energy
• Tidal Lagoon Plc
• Wello Oy
• Yam Pro Energy

Recent Developments

Recent developments in the wave and tidal energy sector highlight ongoing progress and innovation. In February 2024, Minesto launched its first tidal power plant, Dragon 12, in the Faroe Islands. This 12 MW utility-scale facility uses a subsea kite to generate electricity from ocean currents and tidal streams.

Aquanet Power is actively working on various projects to capture tidal energy and convert it into clean electricity. Aquamarine Power continues to advance its Oyster technology with pilot projects in the UK and Ireland, targeting a potential global market of £12 billion by 2030.

Conclusion

The Wave And Tidal Energy Market is poised for substantial growth, driven by increasing demand for renewable energy and technological advancements. While challenges such as high initial costs and environmental concerns persist, ongoing government support and investment in research and development are helping to overcome these obstacles. As the sector matures, wave and tidal energy are expected to play an increasingly important role in the global renewable energy mix, contributing to a more sustainable and diversified energy future.

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