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Tidal and Wave Energy Market Forecasts to 2032 – Global Analysis By Type (Tidal Energy, and Wave Energy), Deployment (Nearshore, and Offshore), Application, and By Geography

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Abstracts

According to Stratistics MRC, the Global Tidal and Wave Energy Market is accounted for $1.9 billion in 2025 and is expected to reach $3.4 billion by 2032, growing at a CAGR of 8.5% during the forecast period. The tidal and wave energy focuses on converting ocean currents, tides, and surface waves into electricity using turbines, oscillating devices, and floating platforms. It spans resource assessment, technology development, project deployment, and grid integration in coastal and island regions. Benefits include highly predictable generation, strong alignment with decarbonization targets, local job creation, and diversification of the renewable mix in areas with strong marine resources.

According to IRENA, total global ocean (tidal + wave) energy capacity was about 494 MW by the end of 2024.

Market Dynamics:

Driver:

Global push for decarbonization and renewable energy diversification

Governments and corporations are actively diversifying their energy portfolios beyond intermittent sources like solar and wind. Tidal and wave energy offer a highly predictable and reliable baseload power alternative, which is crucial for grid stability. This consistent generation profile makes it an attractive option for meeting stringent

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decarbonization targets and enhancing national energy security, thereby driving significant investment and policy support into the sector.

Restraint:

Immature technology with limited commercial deployment

Unlike more established renewables, most tidal and wave devices remain in the demonstration or pilot phase, lacking the economies of scale for cost-competitive generation. The harsh marine environment also presents substantial engineering challenges, leading to high maintenance costs and operational risks. This lack of a proven, bankable track record discourages large-scale private investment and slows the pace of commercial rollout.

Opportunity:

Growing demand for powering remote offshore operations

A substantial emerging opportunity lies in providing power for remote offshore industrial operations. This includes electrifying oil and gas platforms, offshore aquaculture farms, and remote island communities, which traditionally rely on expensive and polluting diesel generators. Tidal and wave energy systems can offer a cleaner, more sustainable, and ultimately cost-effective alternative for these localized microgrids. This specific application represents a viable near-term market that can provide crucial revenue and operational data to help the technology mature.

Threat:

Uncertain and inconsistent government support policies

The market faces a considerable threat from the unpredictability of government incentives and regulatory frameworks. Long-term development cycles for marine energy projects are highly vulnerable to shifts in political priorities, changes in feed-in tariffs, or the expiration of grant programs. This policy uncertainty creates a volatile investment landscape, making it difficult for developers to secure the long-term financing required to advance from pilot to full-scale commercial projects, thereby stalling overall market growth.

Covid-19 Impact:

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The pandemic severely disrupted the tidal and wave energy sector, causing widespread project delays and supply chain bottlenecks. Factory shutdowns and restrictions on international travel stalled component manufacturing and prevented crucial on-site installation and maintenance work. Furthermore, the economic fallout led to a temporary reallocation of government and private capital away from nascent technologies, slowing the pace of innovation and investment. However, the crisis also reinforced the global focus on clean energy as part of economic recovery plans, offering a potential tailwind for the long term.

The tidal energy segment is expected to be the largest during the forecast period

The tidal energy segment is expected to account for the largest market share during the forecast period, primarily due to its higher technological maturity compared to wave energy. Tidal stream generators and barrage systems benefit from the predictable nature of tidal movements, which allows for accurate power output forecasting and easier grid integration. Furthermore, several pre-commercial projects, particularly in Europe and Canada, have successfully demonstrated viability, giving investors and utilities more confidence in the technology's near-term potential for utility-scale power generation.

The power generation segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the power generation segment is predicted to witness the highest growth rate, driven by the increasing focus on integrating marine energy into national grids to meet renewable targets. As technology reliability improves and costs begin to decline, tidal and wave power are becoming more competitive for large-scale electricity production. Additionally, growing investments in projects designed specifically for grid supply, rather than small-scale pilot demonstrations, are fueling the accelerated growth of this segment over the forecast period.

Region with largest share:

During the forecast period, the Europe region is expected to hold the largest market share, backed by strong governmental support and ambitious decarbonization goals set by the European Union. The region boasts a high concentration of technology developers and has been the site of most of the world's flagship tidal energy projects, particularly in the UK and France. Moreover, supportive policy mechanisms like feed-in

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tariffs and innovation grants have created a favorable environment for project development, consolidating Europe's position as the current market leader.

Region with highest CAGR:

During the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by its extensive coastline and rising governmental interest in diversifying its renewable energy mix. Countries like South Korea, China, and Australia are beginning to invest heavily in marine energy research and demonstration projects to harness their significant tidal and wave resources. This growth is further propelled by the urgent need to power coastal populations and industries while reducing reliance on imported fossil fuels, creating fertile ground for market expansion.

Key players in the market

Some of the key players in Tidal and Wave Energy Market include Orbital Marine Power Ltd, SIMEC Atlantis Energy Ltd, Nova Innovation Ltd, Ocean Power Technologies, Inc., Carnegie Clean Energy Ltd, CorPower Ocean AB, Eco Wave Power Global AB, Seabased AB, AW-Energy Oy, Minesto AB, Verdant Power, Inc., Mocean Energy Ltd, Ocean Energy Ltd, Wave Swell Energy Ltd, Ocean Renewable Power Company, Inc., Scotrenewables Tidal Power Ltd, and Wello Oy.

Key Developments:

In November 2025, Orbital Marine Power Ltd authorized Canada's first tidal energy array and awarded an IECRE feasibility statement for their O2-X turbine. Their partnerships and expansions include projects in Scotland, Canada, and the US.

In November 2025, Eco Wave Power Global AB launched its first US project, with strategic advancements in Europe, Asia, and Africa, and plans for third to fifth wave projects in Los Angeles, Taiwan, and Portugal. The company also holds a projects pipeline of 404.7 MW.

In September 2024, Nova Innovation Ltd secured three 15-year Contracts for Difference (CfD) from the UK government for 6MW tidal energy projects in Orkney, supporting long-term project financing and expansion.

Types Covered:

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- Tidal Energy
- Wave Energy

Deployments Covered:

- Nearshore
- Offshore

Applications Covered:

- Power Generation
- Desalination
- Other Applications

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy

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- Spain
- Rest of Europe

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- India
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- Chile
- Rest of South America

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- UAE
- Qatar

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South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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(2024–2032) ($MN)

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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