

Renewable Energy Market Size Forecast to US\$ 3875.0 Billion by 2035 with a Focus on Global Clean Energy Transition – TMR

Global Renewable Energy Market Forecast 2035: Expanding at 12.5% CAGR to Reach US\$ 3875.0 Billion – Transparency Market Research

WILMINGTON, DE, UNITED STATES,
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-- [Renewable Energy Market](#) Outlook
2035

The global renewable energy market is poised for rapid expansion, supported by the rising shift toward clean power generation and carbon neutrality goals. Valued at US\$ 1060.7 Billion in 2024,

the industry is projected to advance at a strong CAGR of 12.5% between 2025 and 2035. Growing adoption of solar, wind, hydro, and other green energy sources, along with supportive government initiatives, are fueling this growth. By 2035, the renewable energy market is expected to reach an impressive US\$ 3875.0 Billion, cementing its role as a cornerstone of the global energy landscape.



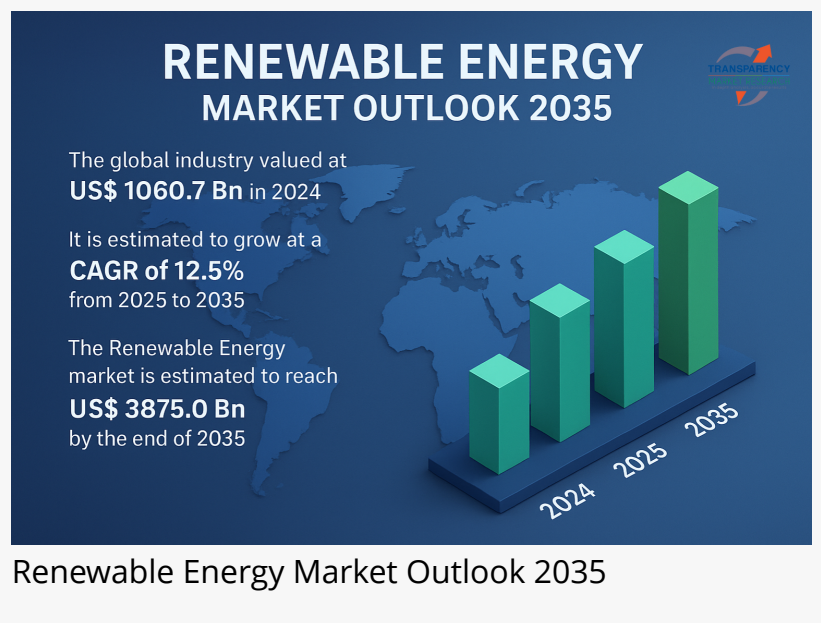
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Industry Overview

The renewable energy market has emerged as one of the most transformative sectors of the global economy. It comprises sources such as solar, wind, hydro, biomass, geothermal, and emerging green hydrogen technologies, all aimed at replacing conventional fossil fuels with sustainable, low-carbon alternatives.



Governments, corporations, and communities worldwide are prioritizing renewable energy adoption to combat climate change, reduce carbon footprints, and secure energy independence. Technological advancements, declining costs of renewable energy systems, and supportive policies have made renewables increasingly competitive with traditional energy sources.

By 2035, renewable energy is expected to dominate global power generation, driven by commitments to achieve net-zero carbon targets and reduce reliance on fossil fuels.

Analysis of Key Players in the Renewable Energy Market

The renewable energy sector is driven by a diverse set of key players, each leveraging unique capabilities to achieve growth. Integrated utilities such as Iberdrola, Enel, Ørsted, and NextEra operate across multiple technologies, including solar, wind, hydro, and energy storage. These companies capitalize on large-scale portfolios, long-term power purchase agreements (PPAs), and advanced digital operations and maintenance (O&M) capabilities to optimize performance and reliability.

Wind turbine specialists like Vestas and GE Vernova focus on developing robust and reliable turbine platforms, complemented by comprehensive maintenance services. Meanwhile, companies such as Tesla, Sungrow, and Huawei enhance the sector through innovations in energy storage and grid integration, ensuring efficient management of renewable power generation and distribution.

Leading Players in the Renewable Energy Market

- Adani Group
- Algonquin Power & Utilities Corp.
- Ecogreen Energy Pvt. Ltd.
- Engie
- GE Renewable Energy
- Iberdrola, S.A.
- Nel ASA
- NextEra Energy, Inc.
- Orsted A/S
- Plug Power Inc.
- Shell
- Siemens Energy
- Suzlon Energy Limited
- Tata Power Solar Systems Ltd.
- Uniper SE
- Vestas

Renewable Energy Market Developments

- Ørsted officially commenced offshore construction for the Greater Changhua 2b & 4 wind farms (920 MW) on February 18, 2025. The project utilizes suction-bucket jacket foundations, a first for APAC, which eliminates the need for piling and minimizes noise and seabed disturbance. Ørsted secured a 20-year PPA for 100% of the project output. Key milestones include first power generation in Q3 2025, offshore installation by year-end 2025, and full grid connection by 2026. Upon completion, Ørsted's Taiwan portfolio will reach nearly 2 GW, reflecting corporate demand and the maturation of offshore wind technology, which reduces deployment risks. The project employs 66 Siemens Gamesa 14-236 DD turbines (14 MW each), located 35–60 km off Changhua.

- In 2024, NextEra Energy Resources entered a five-year joint development agreement with Entergy to co-develop up to 4.5 GW of solar and energy storage projects within Entergy's service territories. This collaboration enhances site control, streamlines procurement, standardizes engineering, accelerates project timelines, and provides greater cost certainty. The initiatives aim to address increasing resource adequacy needs driven by rapidly expanding industrial and data center demand.

Key Player Strategies

Major companies are investing heavily in large-scale renewable projects, R&D, and global expansion.

Strategies include:

- Expansion of offshore wind and solar capacities.
- Mergers & acquisitions to consolidate market presence.
- Development of green hydrogen and hybrid projects.
- Integration of AI and digital tools for efficiency.

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Key Growth Drivers

1. Global Net-Zero Targets

Over 100 countries have pledged to achieve net-zero carbon emissions by mid-century, positioning renewable energy at the heart of their strategies.

2. Declining Costs of Renewable Technologies

Solar PV, wind turbines, and battery storage systems have witnessed substantial cost reductions, making renewable energy more accessible.

3. Government Policies and Subsidies

Incentives such as tax credits, renewable portfolio standards (RPS), and feed-in tariffs are accelerating adoption.

4. Corporate Commitments to Sustainability

Large corporations are investing in renewable energy to meet ESG (Environmental, Social, and Governance) goals and reduce energy costs.

5. Energy Security Concerns

Geopolitical instability and fluctuating oil and gas prices are encouraging nations to strengthen domestic renewable energy infrastructure.

6. Technological Innovations

Breakthroughs in offshore wind, floating solar, and green hydrogen are expanding the scope of renewable energy applications.

Market Restraints & Challenges

- Intermittency Issues – Solar and wind energy depend on weather conditions, requiring advanced storage and grid balancing solutions.
- High Initial Capital Investments – Despite long-term savings, the upfront costs of renewable energy systems remain high.
- Land and Resource Constraints – Large-scale renewable projects require vast land or water resources, posing challenges in dense regions.
- Grid Integration Limitations – Many regions need modernization of transmission and distribution networks to handle renewable energy input.
- Regulatory Uncertainty – Policy shifts and inconsistent regulatory frameworks can discourage long-term investments.

Market Segmentation

By Type

- Solar Energy (utility-scale and rooftop PV)
- Wind Energy (onshore and offshore)
- Hydropower (large dams, small hydro projects)
- Biomass Energy (biofuels, biogas, waste-to-energy)
- Geothermal Energy
- Green Hydrogen & Emerging Renewables

By End User

- Utilities
- Commercial Enterprises
- Residential Consumers
- Industrial Facilities

By Application

- Power Generation
- Heating & Cooling
- Transportation (biofuels, green hydrogen)

Market Trends & Innovations

1. Energy Storage Integration

Widespread adoption of battery energy storage systems (BESS) to manage intermittency and ensure grid stability.

2. Hybrid Renewable Systems

Combining solar, wind, and storage to deliver reliable, 24/7 clean energy solutions.

3. Floating Solar and Offshore Wind

Addressing land constraints by installing renewable projects on water bodies and coastal areas.

4. Green Hydrogen Expansion

Electrolysis powered by renewable energy is gaining momentum to decarbonize industries and transportation.

5. Decentralized Energy Systems

Rooftop solar, microgrids, and community-based projects are growing in popularity.

6. AI and Digital Monitoring

Smart grids, predictive analytics, and IoT-enabled monitoring optimize renewable energy operations.

Why Invest in This Report?

Key Benefits for Investors, Distributors, and Suppliers

- Comprehensive market sizing and forecasts up to 2035.
- Insights into policy frameworks and incentives across regions.
- Analysis of technological breakthroughs shaping the industry.
- Competitive landscape of leading players and their strategies.
- Identification of emerging growth opportunities in renewable subsectors.

Future Outlook

The global renewable energy market is on track to reach US\$ 3875.0 Bn by 2035, more than tripling in size compared to 2024. Growth will be led by Asia-Pacific, followed by Europe and North America, with strong policy support and large-scale renewable investments.

By 2035, the market is expected to witness:

- Mainstream adoption of renewable-powered green hydrogen.
- Massive expansion of offshore wind and floating solar farms.
- Widespread use of decentralized microgrids for energy access in remote areas.
- Integration of renewable energy into heavy industries and transportation sectors.

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Important FAQs with Answers

Q1. What was the market size of the renewable energy industry in 2024?

A1. The global market was valued at US\$ 1060.7 Bn in 2024.

Q2. What is the projected market size by 2035?

A2. The industry is expected to reach US\$ 3875.0 Bn by the end of 2035.

Q3. What is the forecasted CAGR for 2025–2035?

A3. The market is projected to grow at a CAGR of 12.5%.

Q4. Which renewable energy type dominates the market?

A4. Solar and wind energy are expected to lead, with rapid adoption in utility-scale and decentralized applications.

Q5. Who are the key players in the renewable energy market?

A5. Leading players include NextEra Energy, Ørsted, Iberdrola, Vestas, Siemens Gamesa, and Enel Green Power.

Q6. What trends will shape the future of renewable energy?

A6. Key trends include green hydrogen expansion, hybrid renewable systems, floating solar, and AI-powered smart grids.

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