

Renewable Energy Forecasting Software Market Forecasts to 2034 – Global Analysis By Forecast Type (Short-Term Forecasting, Medium-Term Forecasting, Long-Term Forecasting, Very Short-Term & Nowcasting, Intra-Day Forecasting, and Hybrid Forecasting Models), Component, Data Source, Deployment Mode, Technology, Application, End User and By Geography

<https://marketpublishers.com/r/RC6BB224614FEN.html>

Date: February 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: RC6BB224614FEN

Abstracts

According to Statistics MRC, the Global Renewable Energy Forecasting Software Market is accounted for \$3.6 billion in 2026 and is expected to reach \$6.9 billion by 2034 growing at a CAGR of 8.4% during the forecast period. Renewable Energy Forecasting Software uses advanced algorithms, weather models, and historical data to predict renewable generation output. It provides short term and long term forecasts for solar, wind, and hydro resources, helping grid operators balance supply and demand. Accurate forecasting reduces reliance on fossil backup, minimizes curtailment, and improves grid stability. By integrating AI and machine learning, these tools enhance precision, enabling utilities and developers to optimize operations, reduce costs, and maximize renewable penetration in energy systems.

Market Dynamics:

Driver:

Integration of intermittent renewable energy

The Renewable Energy Forecasting Software Market has been driven by increasing integration of intermittent renewable energy sources such as wind and solar into power systems. Variability in generation output has heightened the need for accurate forecasting to maintain grid stability and optimize dispatch planning. Utilities and grid operators have relied on forecasting software to improve scheduling accuracy and reduce imbalance costs. Growing renewable penetration, coupled with decarbonization mandates, has reinforced sustained demand for advanced forecasting solutions across power markets.

Restraint:

Dependence on high-quality data

Dependence on high-quality, real-time data has emerged as a key restraint in renewable energy forecasting software adoption. Accurate forecasts require extensive historical datasets, real-time meteorological inputs, and reliable sensor infrastructure. Data gaps, inconsistencies, or limited coverage can significantly reduce forecasting accuracy. Integration of diverse data sources adds complexity, increasing implementation challenges and operational costs. These data dependencies can restrict software performance, particularly in regions with underdeveloped monitoring infrastructure.

Opportunity:

Advanced AI and NWP solutions

Advanced artificial intelligence and numerical weather prediction (NWP) solutions present significant growth opportunities within the market. AI-driven models enhance forecast accuracy by learning complex patterns across weather and generation data. Integration of high-resolution NWP outputs improves short-term and intraday forecasting precision. Market expansion has been reinforced by increasing computing capabilities and cloud-based deployments. These advancements enable better grid planning, reduced curtailment, and improved renewable asset utilization.

Threat:

Forecasting errors impacting grid stability

Forecasting errors remain a critical threat, as inaccurate predictions can disrupt grid

operations and increase balancing costs. Over- or underestimation of renewable output may lead to inefficient dispatch decisions and system instability. Such errors can undermine operator confidence in forecasting tools and result in financial penalties. As renewable penetration rises, the operational impact of forecasting inaccuracies becomes more pronounced, necessitating continuous model improvement and validation.

Covid-19 Impact:

The COVID-19 pandemic caused temporary disruptions in renewable forecasting software deployments due to delayed projects and reduced capital spending. However, demand for digital solutions increased as grid operators adapted to volatile demand patterns. Remote operations and cloud-based forecasting platforms gained traction during the pandemic. Post-pandemic recovery reinforced investment in digital forecasting tools, supporting long-term market growth driven by renewable integration and grid optimization needs.

The very short-term & nowcasting segment is expected to be the largest during the forecast period

The very short-term & nowcasting segment is expected to account for the largest market share during the forecast period, resulting from its critical role in real-time grid balancing. These solutions provide minute-to-hour forecasts that support dispatch optimization and frequency control. Utilities rely on nowcasting to manage rapid fluctuations in renewable output. High operational relevance and regulatory requirements for real-time accuracy have reinforced dominance of this segment within the forecasting software market.

The software platforms segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the software platforms segment is predicted to witness the highest growth rate, propelled by increasing adoption of scalable and cloud-based forecasting solutions. Integrated platforms offer advanced analytics, visualization, and interoperability with energy management systems. Growth has been reinforced by demand for centralized forecasting across multi-asset portfolios. Continuous software innovation and subscription-based delivery models further accelerate platform adoption across utilities and renewable operators.

Region with largest share:

During the forecast period, the Europe region is expected to hold the largest market share, supported by its high penetration of wind and solar power assets. Fueled by stringent grid balancing requirements and advanced energy trading markets, utilities increasingly rely on accurate forecasting solutions. Moreover, strong regulatory mandates for renewable integration, combined with early adoption of AI-driven forecasting platforms and mature digital infrastructure, continue to reinforce Europe's leading market position.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by rapid expansion of renewable energy capacity and grid modernization initiatives. Spurred by large-scale solar and wind installations in China, India, and Southeast Asia, demand for advanced forecasting software is rising. In addition, increasing investments in smart grids, energy management systems, and real-time analytics are collectively accelerating regional market growth.

Key players in the market

Some of the key players in Renewable Energy Forecasting Software Market include IBM Corporation, Oracle Corporation, Siemens AG, ABB Ltd, General Electric Company, Vaisala Oyj, Schneider Electric SE, DNV Group AS, Utopus Insights, Enverus, AutoGrid Systems, Inc., ENGIE Digital, UL Solutions Inc., Meteomatics AG, and SAP SE.

Key Developments:

In December 2025, IBM expanded its Renewables Forecasting platform by incorporating enhanced analytics and IoT sensor integration for improved wind and solar power production accuracy, enabling utilities and asset owners to generate high-fidelity forecasts that better support grid scheduling and imbalance cost reduction.

In November 2025, UL Solutions strengthened its renewable energy forecasting suite by offering extended forecasting horizons and customized location-specific power predictions for both wind and solar projects, supporting system operators and asset owners with extended week-ahead to multi-week forecasts essential for grid balancing and operational planning.

In August 2025, Enverus reported consistent outperformance of its load, wind, and solar forecasting models against ERCOT and IESO regional system operator benchmarks, demonstrating superior accuracy that supports more reliable trading strategies and grid operations.

Forecast Types Covered:

Short-Term Forecasting

Medium-Term Forecasting

Long-Term Forecasting

Very Short-Term & Nowcasting

Intra-Day Forecasting

Hybrid Forecasting Models

Components Covered:

Software Platforms

Data Analytics Engines

Weather Data Integration Modules

Visualization & Reporting Tools

Services & Support

Data Sources Covered:

Meteorological Data

Satellite & Remote Sensing Data

Historical Generation Data

Grid & SCADA Data

IoT & Sensor Data

Deployment Modes Covered:

On-Premise

Cloud-Based

Hybrid Deployment

Technologies Covered:

Artificial Intelligence & Machine Learning

Numerical Weather Prediction (NWP)

Statistical Forecasting Models

Digital Twin & Simulation Technologies

Applications Covered:

Solar Power Forecasting

Wind Power Forecasting

Hybrid Renewable Forecasting

Grid Operations & Scheduling

Energy Trading & Market Bidding

End Users Covered:

- Utilities & Grid Operators
- Renewable Energy Plant Operators
- Energy Traders & Power Exchanges
- Independent Power Producers
- Government & Research Institutions

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

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 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- 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

Contents

1 EXECUTIVE SUMMARY

2 PREFACE

- 2.1 Abstract
- 2.2 Stake Holders
- 2.3 Research Scope
- 2.4 Research Methodology
 - 2.4.1 Data Mining
 - 2.4.2 Data Analysis
 - 2.4.3 Data Validation
 - 2.4.4 Research Approach
- 2.5 Research Sources
 - 2.5.1 Primary Research Sources
 - 2.5.2 Secondary Research Sources
 - 2.5.3 Assumptions

3 MARKET TREND ANALYSIS

- 3.1 Introduction
- 3.2 Drivers
- 3.3 Restraints
- 3.4 Opportunities
- 3.5 Threats
- 3.6 Technology Analysis
- 3.7 Application Analysis
- 3.8 End User Analysis
- 3.9 Emerging Markets
- 3.10 Impact of Covid-19

4 PORTERS FIVE FORCE ANALYSIS

- 4.1 Bargaining power of suppliers
- 4.2 Bargaining power of buyers
- 4.3 Threat of substitutes
- 4.4 Threat of new entrants
- 4.5 Competitive rivalry

5 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY FORECAST TYPE

- 5.1 Introduction
- 5.2 Short-Term Forecasting
- 5.3 Medium-Term Forecasting
- 5.4 Long-Term Forecasting
- 5.5 Very Short-Term & Nowcasting
- 5.6 Intra-Day Forecasting
- 5.7 Hybrid Forecasting Models

6 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY COMPONENT

- 6.1 Introduction
- 6.2 Software Platforms
- 6.3 Data Analytics Engines
- 6.4 Weather Data Integration Modules
- 6.5 Visualization & Reporting Tools
- 6.6 Services & Support

7 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY DATA SOURCE

- 7.1 Introduction
- 7.2 Meteorological Data
- 7.3 Satellite & Remote Sensing Data
- 7.4 Historical Generation Data
- 7.5 Grid & SCADA Data
- 7.6 IoT & Sensor Data

8 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY DEPLOYMENT MODE

- 8.1 Introduction
- 8.2 On-Premise
- 8.3 Cloud-Based
- 8.4 Hybrid Deployment

9 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY TECHNOLOGY

- 9.1 Introduction
- 9.2 Artificial Intelligence & Machine Learning
- 9.3 Numerical Weather Prediction (NWP)
- 9.4 Statistical Forecasting Models
- 9.5 Digital Twin & Simulation Technologies

10 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY APPLICATION

- 10.1 Introduction
- 10.2 Solar Power Forecasting
- 10.3 Wind Power Forecasting
- 10.4 Hybrid Renewable Forecasting
- 10.5 Grid Operations & Scheduling
- 10.6 Energy Trading & Market Bidding

11 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY END USER

- 11.1 Introduction
- 11.2 Utilities & Grid Operators
- 11.3 Renewable Energy Plant Operators
- 11.4 Energy Traders & Power Exchanges
- 11.5 Independent Power Producers
- 11.6 Government & Research Institutions

12 GLOBAL RENEWABLE ENERGY FORECASTING SOFTWARE MARKET, BY GEOGRAPHY

- 12.1 Introduction
- 12.2 North America
 - 12.2.1 US
 - 12.2.2 Canada
 - 12.2.3 Mexico
- 12.3 Europe

- 12.3.1 Germany
- 12.3.2 UK
- 12.3.3 Italy
- 12.3.4 France
- 12.3.5 Spain
- 12.3.6 Rest of Europe
- 12.4 Asia Pacific
 - 12.4.1 Japan
 - 12.4.2 China
 - 12.4.3 India
 - 12.4.4 Australia
 - 12.4.5 New Zealand
 - 12.4.6 South Korea
 - 12.4.7 Rest of Asia Pacific
- 12.5 South America
 - 12.5.1 Argentina
 - 12.5.2 Brazil
 - 12.5.3 Chile
 - 12.5.4 Rest of South America
- 12.6 Middle East & Africa
 - 12.6.1 Saudi Arabia
 - 12.6.2 UAE
 - 12.6.3 Qatar
 - 12.6.4 South Africa
 - 12.6.5 Rest of Middle East & Africa

13 KEY DEVELOPMENTS

- 13.1 Agreements, Partnerships, Collaborations and Joint Ventures
- 13.2 Acquisitions & Mergers
- 13.3 New Product Launch
- 13.4 Expansions
- 13.5 Other Key Strategies

14 COMPANY PROFILING

- 14.1 IBM Corporation
- 14.2 Oracle Corporation
- 14.3 Siemens AG

- 14.4 ABB Ltd
- 14.5 General Electric Company
- 14.6 Vaisala Oyj
- 14.7 Schneider Electric SE
- 14.8 DNV Group AS
- 14.9 Utopus Insights
- 14.10 Enverus
- 14.11 AutoGrid Systems, Inc.
- 14.12 ENGIE Digital
- 14.13 UL Solutions Inc.
- 14.14 Meteomatics AG
- 14.15 SAP SE

List Of Tables

LIST OF TABLES

Table 1 Global Renewable Energy Forecasting Software Market Outlook, By Region (2025-2034) (\$MN)

Table 2 Global Renewable Energy Forecasting Software Market Outlook, By Forecast Type (2025-2034) (\$MN)

Table 3 Global Renewable Energy Forecasting Software Market Outlook, By Short-Term Forecasting (2025-2034) (\$MN)

Table 4 Global Renewable Energy Forecasting Software Market Outlook, By Medium-Term Forecasting (2025-2034) (\$MN)

Table 5 Global Renewable Energy Forecasting Software Market Outlook, By Long-Term Forecasting (2025-2034) (\$MN)

Table 6 Global Renewable Energy Forecasting Software Market Outlook, By Very Short-Term & Nowcasting (2025-2034) (\$MN)

Table 7 Global Renewable Energy Forecasting Software Market Outlook, By Intra-Day Forecasting (2025-2034) (\$MN)

Table 8 Global Renewable Energy Forecasting Software Market Outlook, By Hybrid Forecasting Models (2025-2034) (\$MN)

Table 9 Global Renewable Energy Forecasting Software Market Outlook, By Component (2025-2034) (\$MN)

Table 10 Global Renewable Energy Forecasting Software Market Outlook, By Software Platforms (2025-2034) (\$MN)

Table 11 Global Renewable Energy Forecasting Software Market Outlook, By Data Analytics Engines (2025-2034) (\$MN)

Table 12 Global Renewable Energy Forecasting Software Market Outlook, By Weather Data Integration Modules (2025-2034) (\$MN)

Table 13 Global Renewable Energy Forecasting Software Market Outlook, By Visualization & Reporting Tools (2025-2034) (\$MN)

Table 14 Global Renewable Energy Forecasting Software Market Outlook, By Services & Support (2025-2034) (\$MN)

Table 15 Global Renewable Energy Forecasting Software Market Outlook, By Data Source (2025-2034) (\$MN)

Table 16 Global Renewable Energy Forecasting Software Market Outlook, By Meteorological Data (2025-2034) (\$MN)

Table 17 Global Renewable Energy Forecasting Software Market Outlook, By Satellite & Remote Sensing Data (2025-2034) (\$MN)

Table 18 Global Renewable Energy Forecasting Software Market Outlook, By Historical

Generation Data (2025-2034) (\$MN)

Table 19 Global Renewable Energy Forecasting Software Market Outlook, By Grid & SCADA Data (2025-2034) (\$MN)

Table 20 Global Renewable Energy Forecasting Software Market Outlook, By IoT & Sensor Data (2025-2034) (\$MN)

Table 21 Global Renewable Energy Forecasting Software Market Outlook, By Deployment Mode (2025-2034) (\$MN)

Table 22 Global Renewable Energy Forecasting Software Market Outlook, By On-Premise (2025-2034) (\$MN)

Table 23 Global Renewable Energy Forecasting Software Market Outlook, By Cloud-Based (2025-2034) (\$MN)

Table 24 Global Renewable Energy Forecasting Software Market Outlook, By Hybrid Deployment (2025-2034) (\$MN)

Table 25 Global Renewable Energy Forecasting Software Market Outlook, By Technology (2025-2034) (\$MN)

Table 26 Global Renewable Energy Forecasting Software Market Outlook, By Artificial Intelligence & Machine Learning (2025-2034) (\$MN)

Table 27 Global Renewable Energy Forecasting Software Market Outlook, By Numerical Weather Prediction (NWP) (2025-2034) (\$MN)

Table 28 Global Renewable Energy Forecasting Software Market Outlook, By Statistical Forecasting Models (2025-2034) (\$MN)

Table 29 Global Renewable Energy Forecasting Software Market Outlook, By Digital Twin & Simulation Technologies (2025-2034) (\$MN)

Table 30 Global Renewable Energy Forecasting Software Market Outlook, By Application (2025-2034) (\$MN)

Table 31 Global Renewable Energy Forecasting Software Market Outlook, By Solar Power Forecasting (2025-2034) (\$MN)

Table 32 Global Renewable Energy Forecasting Software Market Outlook, By Wind Power Forecasting (2025-2034) (\$MN)

Table 33 Global Renewable Energy Forecasting Software Market Outlook, By Hybrid Renewable Forecasting (2025-2034) (\$MN)

Table 34 Global Renewable Energy Forecasting Software Market Outlook, By Grid Operations & Scheduling (2025-2034) (\$MN)

Table 35 Global Renewable Energy Forecasting Software Market Outlook, By Energy Trading & Market Bidding (2025-2034) (\$MN)

Table 36 Global Renewable Energy Forecasting Software Market Outlook, By End User (2025-2034) (\$MN)

Table 37 Global Renewable Energy Forecasting Software Market Outlook, By Utilities & Grid Operators (2025-2034) (\$MN)

Table 38 Global Renewable Energy Forecasting Software Market Outlook, By Renewable Energy Plant Operators (2025-2034) (\$MN)

Table 39 Global Renewable Energy Forecasting Software Market Outlook, By Energy Traders & Power Exchanges (2025-2034) (\$MN)

Table 40 Global Renewable Energy Forecasting Software Market Outlook, By Independent Power Producers (2025-2034) (\$MN)

Table 41 Global Renewable Energy Forecasting Software Market Outlook, By Government & Research Institutions (2025-2034) (\$MN)

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

I would like to order

Product name: Renewable Energy Forecasting Software Market Forecasts to 2034 – Global Analysis By Forecast Type (Short-Term Forecasting, Medium-Term Forecasting, Long-Term Forecasting, Very Short-Term & Nowcasting, Intra-Day Forecasting, and Hybrid Forecasting Models), Component, Data Source, Deployment Mode, Technology, Application, End User and By Geography

Product link: <https://marketpublishers.com/r/RC6BB224614FEN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/RC6BB224614FEN.html>