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AI-Driven Power Demand Forecasting Platforms Market Forecasts to 2034 – Global Analysis By Forecasting Approach (Machine Learning-Based Forecasting, Deep Learning & Neural Networks, Hybrid AI + Statistical Models and Reinforcement Learning-Driven Forecasting), Deployment Model, Forecasting Horizon, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global AI-Driven Power Demand Forecasting Platforms Market is accounted for $2.4 billion in 2026 and is expected to reach $9.1 billion by 2034 growing at a CAGR of 18.0% during the forecast period. AI-based electricity demand forecasting platforms leverage artificial intelligence, machine learning models, and real-time data streams to estimate power consumption trends accurately. They assist utilities, grid managers, and energy companies in planning generation, minimizing costs, and maintaining stable grid operations. By processing historical consumption data, weather forecasts, market behavior, and IoT-enabled device inputs, these systems support smarter energy management and renewable integration. They also improve demand response efficiency and promote sustainable energy use across multiple sectors. Increasing deployment of smart grid infrastructure and ongoing digitalization in the energy industry are driving the rapid growth of these forecasting solutions worldwide globally.

According to the International Energy Agency (IEA), advanced digitalization and AI-driven forecasting tools are becoming critical for modern power systems, with global investment in smart grid digital technologies surpassing USD 50 billion in 2023, largely

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driven by demand prediction and optimization needs.

Market Dynamics:

Driver:

Growth of smart grid infrastructure

The increasing deployment of smart grid systems is strongly fueling the adoption of AI-based power demand forecasting solutions. These grids produce large-scale real-time data through intelligent meters and networked sensors, which help utilities, understand usage behavior more effectively. With the support of AI algorithms, this information improves demand prediction accuracy, minimizes energy losses, and supports stable grid operations. Energy providers are actively upgrading traditional infrastructure into digitalized networks to enhance performance and efficiency. As smart grid technologies expand across regions, the requirement for sophisticated forecasting platforms is growing rapidly across all types of energy consumption sectors worldwide.

Restraint:

High implementation and infrastructure costs

The expensive setup and infrastructure requirements significantly hinder the growth of AI-based power demand forecasting platforms. Organizations must invest heavily in advanced digital systems, powerful computing resources, cloud infrastructure, and expert workforce to deploy these solutions effectively. Many energy providers, particularly in emerging economies, struggle with limited budgets, which restrict large-scale implementation. The challenge becomes more complex when integrating with outdated legacy grid systems, further increasing costs. Ongoing expenses such as system maintenance, upgrades, and data management also add financial pressure. These cost-related challenges slow adoption, especially among smaller utilities, limiting market expansion across regions worldwide.

Opportunity:

Rising demand for energy efficiency and sustainability

The growing emphasis on sustainability and efficient energy usage provides major opportunities for AI-powered forecasting systems. Governments and organizations are

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increasingly focused on reducing carbon emissions and improving energy efficiency. AI forecasting tools help optimize power generation, minimize energy losses, and ensure better resource utilization. They also support demand response initiatives and encourage smarter consumption behaviors. As companies and countries adopt green energy policies and sustainability frameworks, the demand for precise forecasting technologies is rising. This global transition toward environmentally responsible energy systems is significantly boosting the adoption of AI-based demand prediction platforms.

Threat:

High dependency on data quality and availability

The heavy reliance on precise and consistent data poses a major risk for AI-powered forecasting platforms. These systems depend on vast datasets collected from smart devices, sensors, and energy grids to generate accurate predictions. When data is incomplete, inconsistent, or unreliable, forecasting accuracy declines significantly, leading to poor decision-making. In many areas, limited data infrastructure further exacerbates this problem. Inaccurate inputs can cause inefficient power distribution and instability in grid operations. Since AI models are highly dependent on data quality, any disruption or gap in data availability can significantly reduce system effectiveness and overall performance.

Covid-19 Impact:

The COVID-19 outbreak had a major influence on the AI-powered power demand forecasting platforms market by changing electricity usage patterns and speeding up digital adoption in the energy industry. Lockdown measures led to sudden fluctuations in residential, commercial, and industrial energy consumption, reducing the effectiveness of conventional forecasting approaches. This created strong demand for AI-driven systems capable of real-time data processing and flexible predictions. Energy providers increasingly relied on advanced analytics to manage irregular load conditions and maintain grid reliability. Remote monitoring and cloud-based solutions also became more widely used, accelerating the global shift toward intelligent forecasting technologies.

The machine learning-based forecasting segment is expected to be the largest during the forecast period

The machine learning-based forecasting segment is expected to account for the largest

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market share during the forecast period. Its strong position comes from its capability to process large volumes of data and accurately detect energy consumption trends. Utilities and energy providers prefer machine learning solutions because they are adaptable, scalable, and integrate easily with current grid systems. These models improve over time as they learn from new data, enhancing forecasting precision. Compared to more advanced or complex AI techniques, they are simpler to implement and manage. This practicality and efficiency make machine learning the most commonly adopted method in demand prediction systems.

The smart city authorities segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the smart city authorities segment is predicted to witness the highest growth rate. This expansion is fuelled by increasing urban development and significant investments in smart urban infrastructure globally. Smart cities depend on connected technologies, IoT systems, and real-time analytics to manage electricity usage efficiently. AI forecasting tools assist authorities in balancing energy loads, improving distribution efficiency, and supporting sustainable urban operations. Growing emphasis on environmental goals, reduced emissions, and digital city management is further driving adoption. As urban areas evolve into data-driven ecosystems, the need for advanced forecasting solutions is rising quickly.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share. This leadership is supported by highly developed digital infrastructure, early implementation of AI technologies, and the strong presence of key energy and technology firms. The region benefits from advanced smart grid networks that produce extensive real-time data for accurate forecasting. Utilities across the United States and Canada are increasingly adopting AI solutions to improve grid stability, enhance energy efficiency, and lower operational expenses. Additionally, favourable regulatory support and a strong push toward renewable energy integration further boost market expansion across the North American energy sector.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR. This expansion is supported by strong urban growth, rising energy consumption, and significant investments in modernizing power infrastructure across major

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economies like China, India, Japan, and South Korea. Governments are encouraging digital upgrades in the energy sector and increasing renewable energy deployment, which enhances demand for forecasting solutions. Rapid industrial growth and smart city initiatives also contribute to market expansion. Additionally, utilities in the region are increasingly adopting AI-based systems to improve operational efficiency, optimize energy usage, and strengthen grid reliability.

Key players in the market

Some of the key players in AI-Driven Power Demand Forecasting Platforms Market include Siemens Energy, Hitachi Energy, GE Vernova, Schneider Electric, ABB, IBM Watson Energy & Utilities, Accenture, DXC Technology, Enel X (formerly EnerNOC), AutoGrid, OSIsoft (AVAEVA), Uptake Technologies, SparkCognition, mPrest Systems, Thinkbridge, Eniverse, Bloom Energy and VOLTaware.

Key Developments:

In December 2025, GE Vernova has signed an agreement with Greenvolt Power to supply onshore wind turbines for the Gurbanesti wind farm in Calara?i county, Romania. The contractual scope covers the supply, installation, and commissioning of 42 units of 6.1MW, 158m rotor turbines. This marks the second major onshore wind agreement for GE Vernova Romania within two months, following an earlier announcement to deliver another 42 turbines for the Ialomi?a wind farm in the country.

In November 2025, Siemens Energy has signed a contract to design and deliver the power conversion system for Oklo's Aurora powerhouse reactors. The contract will see Siemens Energy conduct detailed engineering and layout activities for a condensing SST-600 steam turbine, an SGen-100A industrial generator, and associated auxiliaries to support Oklo’s first advanced reactor, the Aurora powerhouse at Idaho National Laboratory.

In November 2025, Hitachi Energy India and Bharat Heavy Electricals Ltd (BHEL) have executed a novation agreement that transfers contractual rights and obligations for the Rajasthan HVDC project from Rajasthan Part I Power Transmission Ltd (RPPTL) to an Adani Group entity. The agreement, completed, formalises the replacement of RPPTL with AESL Projects Ltd (APL) as the contracting party.

Forecasting Approaches Covered:

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- Machine Learning-Based Forecasting
- Deep Learning & Neural Networks
- Hybrid AI + Statistical Models
- Reinforcement Learning-Driven Forecasting

Deployment Models Covered:

- Cloud-Based Platforms
- On-Premise Solutions
- Edge & IoT-Integrated Forecasting

Forecasting Horizons Covered:

- Short-Term (Minutes to Hours)
- Medium-Term (Days to Weeks)
- Long-Term (Months to Years)

Applications Covered:

- Grid Load Balancing & Stability
- Renewable Energy Integration
- EV Charging Infrastructure Demand
- Industrial & Commercial Energy Management
- Smart Home & Consumer Demand Forecasting

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End Users Covered:

- Utilities & Grid Operators
- Independent Power Producers (IPPs)
- Large Industrial Enterprises
- Commercial Buildings & Campuses
- Smart City Authorities

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Italy
  - Spain
  - Netherlands
  - Belgium

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- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

South America

- Brazil
- Argentina
- Colombia

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- Chile
- Peru
- Rest of South America

Rest of the World (RoW)

- Middle East
  - Saudi Arabia
  - United Arab Emirates
  - Qatar
  - Israel
  - Rest of Middle East
- Africa
  - South Africa
  - Egypt
  - Morocco
  - Rest of 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)

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- 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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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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