

Smart Grid Data Analytics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-07-01 | 120 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License \$4750.00
- Team License (1-7 Users) \$5250.00
- Site License \$6500.00
- Corporate License \$8750.00

Report description:

Smart Grid Data Analytics Market Analysis

The Smart Grid Data Analytics Market size is estimated at USD 8.25 billion in 2025, and is expected to reach USD 14.60 billion by 2030, at a CAGR of 12.10% during the forecast period (2025-2030). Growing volumes of advanced metering infrastructure (AMI) data, rapid deployment of distributed energy resources (DERs), and expanding electric-vehicle (EV) charging networks are pushing grid operators to adopt cloud-native analytics that can turn petabytes of raw information into timely, actionable insights. Artificial intelligence (AI) and machine-learning engines now underpin load forecasting, outage prediction, and DER orchestration, giving utilities the tools to shift from reactive to predictive grid management. Vendors that bridge legacy SCADA environments with modern cloud services are seeing stronger demand, especially in markets with stringent cybersecurity mandates such as NERC-CIP and IEC 62443. Simultaneously, mounting decarbonization targets are prompting regulators to require real-time carbon-intensity reporting, creating further pull for sophisticated analytics.

Global Smart Grid Data Analytics Market Trends and Insights

Utility AMI Roll-outs Hitting Critical Mass

Comprehensive AMI deployments now stream millions of time-stamped meter readings daily, giving utilities unprecedented visibility into low-voltage networks. Germany's 98.2% success rate in remote power-limitation commands proved that next-generation meters support near-real-time grid interventions. Utilities are therefore scaling analytics engines that ingest

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

150,000 data points per hour per feeder to predict overloads, preempt equipment failures, and refine tariff structures. A pilot across 20 substations and 184 feeders demonstrated that event-based analytics trimmed unscheduled maintenance by 28% and deferred USD 4 million in capex.

Shift to Cloud-Native Grid-Edge Analytics

Connecting smart meters to 5G backhaul cuts latency to single-digit milliseconds, enabling edge devices to filter noise and forward only high-value events to the cloud. Utilities avoid building costly data centers and instead subscribe to elastic processing power that runs AI models for topology optimization or volt-var control. Siemens already books over EUR 1.7 billion (USD 1.81 billion) in software-centric revenue by bundling its grid applications into a secure cloud layer.

Legacy SCADA/MDMS Interoperability Gaps

Utilities often operate devices from dozens of vendors, each using proprietary protocols. Bench tests on digital substations uncovered handshake issues that forced operators to purchase middleware gateways, inflating integration budgets by 17%. The need for rigorous cyber-physical validation extends project timelines as utilities test edge-to-cloud data paths for deterministic performance.

Other drivers and restraints analyzed in the detailed report include:

Mandatory Decarbonization Reporting by TSOs and DSOs / AI-Optimized EV-to-Grid Load Balancing Pilots / Rising Analytics-Traffic Backhaul Costs in Rural Feeders /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Cloud deployments captured 61.2% of the smart grid data analytics market in 2024 and are forecast to grow at 13.1% CAGR to 2030. Utilities value the ability to spin up advanced AI workloads without capital outlays, while hyperscale providers guarantee multilayer cybersecurity and continuous software upgrades. In contrast, on-premise deployments persist where regulators mandate data residency or where latency-sensitive feeder automation requires local compute. As Siemens' grid-software revenue already surpasses USD 1.81 billion, investment is shifting toward "analytics-as-a-service" subscriptions that monetize continuous insights rather than one-time licenses.

Growing adoption of virtual power plants (VPPs) illustrates why the cloud model scales better. The U.S. Department of Energy targets 80-160 GW of aggregated VPP capacity by 2030, and nearly every platform relies on distributed cloud microservices to run stochastic optimization across millions of devices. As those requirements intensify, the smart grid data analytics market size for cloud deployment is projected to capture USD 9.8 billion by 2030, more than tripling the on-premise total.

Metering analytics represented 40.2% revenue in 2024, reflecting utilities' historic focus on billing accuracy, theft detection, and time-of-use tariff design. Yet, asset and grid-edge analytics is the fastest climber at 13.9% CAGR as operators prioritize condition-based maintenance for transformers, reclosers, and power electronics. IBM's survey shows 70% of digitally mature utilities already use AI to schedule maintenance windows, cutting forced outages by 23%.

The convergence of edge computing and AI is key: sensors now embed lightweight neural networks that flag anomalies locally, forwarding only high-risk events to the cloud. This tiered architecture lowers bandwidth bills while enabling sub-second fault isolation. Consequently, the smart grid data analytics market size for asset intelligence is forecast to reach USD 4.4 billion by

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

2030, representing 30% of total spending and reflecting the shift toward proactive grid stewardship.

Smart Grid Data Analytics Market is Segmented by Deployment (Cloud-Based and On-Premise), Solution (Transmission and Distribution Network, Metering Analytics, and More), Application (Advanced Metering Infrastructure Analysis, Demand Response Analysis, and More), End-User Vertical (Public Utilities and Municipalities, Investor-Owned Utilities, and More), and Geography. The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

North America generated the largest revenue, holding 37.1% of the smart grid data analytics market in 2024, due to mature AMI roll-outs, wholesale market reforms, and federal investment tax credits that reward DER orchestration. Utilities here increasingly bundle analytics subscriptions into rate-based filings, ensuring stable cost recovery. Canada's new AI R&D hub for battery manufacturing further strengthens the regional ecosystem, positioning local vendors near key EV-supply-chain customers.

Asia-Pacific is the fastest mover with a projected 13.8% CAGR to 2030. China's State Grid Corporation embeds analytics in every phase of its ultra-high-voltage projects, while India's Revamped Distribution Sector Scheme allocates USD 40 billion to digitalize feeders. Malaysia's AI-based charging pilots illustrate how emerging economies leapfrog legacy infrastructure to adopt cloud-native solutions. Consequently, the region's contribution to the smart grid data analytics market size will nearly double by 2030, surpassing USD 4 billion.

Europe benefits from stringent decarbonization rules and data-space initiatives that mandate interoperability. Germany's 98.2% command-success benchmark validates continent-wide technical maturity. Southern Europe's emphasis on open energy data is pushing distribution companies to adopt standardized analytics that expose real-time metrics to third-party service providers.

South America and the Middle East, and Africa collectively represent under 10% of revenue today, but rising electrification and renewable targets are catalyzing pilot deployments. Utilities in Chile and the United Arab Emirates now integrate PMU-based analytics to stabilize high solar penetration, signaling fertile ground for vendor expansion once telecom backhaul improves.

List of Companies Covered in this Report:

Siemens AG / Itron Inc. / Landis + Gyr Group AG / Oracle Corporation / SAS Institute Inc. / Schneider Electric SE / GE Vernova / IBM Corporation / Hitachi Energy Ltd. / AutoGrid Systems Inc. / Uplight Inc. / Uptake Technologies Inc. / Tantalus Systems Corp. / Amdocs Ltd. / Sensus USA Inc. (Xylem) / Honeywell Smart Energy / Networked Energy Services / Grid4C Inc. / Atonix Digital LLC / Gridspertise S.r.l. / Tollgrade Communications Inc. / C3.ai Inc. / Opower (Oracle Corporation) / Accenture plc / Enlit AI Ltd. /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

Table of Contents:

1 INTRODUCTION

1.1 Study Assumptions and Market Definition

1.2 Scope of the Study

2 RESEARCH METHODOLOGY

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

3 EXECUTIVE SUMMARY

4 MARKET LANDSCAPE

4.1 Market Overview

4.2 Market Drivers

4.2.1 Utility AMI roll-outs hitting critical mass

4.2.2 Shift to cloud-native grid-edge analytics

4.2.3 Mandatory decarbonisation reporting by TSOs and DSOs

4.2.4 Cyber-secure analytics for NERC-CIP and IEC 62443 compliance

4.2.5 AI-optimised EV-to-Grid load balancing pilots

4.2.6 Real-time DER orchestration requirements (solar, storage, VPPs)

4.3 Market Restraints

4.3.1 Legacy SCADA/MDMS interoperability gaps

4.3.2 Rising analytics-traffic backhaul costs in rural feeders

4.3.3 Data-ownership disputes between DSOs and customer apps

4.3.4 Shortage of advanced analytics talent at utilities

4.4 Industry Value Chain Analysis

4.5 Regulatory Landscape

4.6 Technological Outlook

4.7 Industry Attractiveness - Porter's Five Forces Analysis

4.7.1 Threat of New Entrants

4.7.2 Bargaining Power of Suppliers

4.7.3 Bargaining Power of Consumers

4.7.4 Threat of Substitutes

4.7.5 Intensity of Competitive Rivalry

4.8 Impact of Macroeconomic Factors on the Market

5 MARKET SIZE AND GROWTH FORECASTS (VALUES)

5.1 By Deployment

5.1.1 Cloud-based

5.1.2 On-premise

5.2 By Solution

5.2.1 Transmission and Distribution Network

5.2.2 Metering Analytics

5.2.3 Customer Analytics

5.2.4 Asset and Grid-Edge Analytics

5.3 By Application

5.3.1 Advanced Metering Infrastructure Analysis

5.3.2 Demand Response Analysis

5.3.3 Grid Optimisation and Predictive Maintenance

5.3.4 Renewable and EV Integration Forecasting

5.4 By End-user Vertical

5.4.1 Public Utilities and Municipalities

5.4.2 Investor-Owned Utilities (IOUs)

5.4.3 Cooperative and Community Utilities

5.4.4 Large Energy-Intensive Enterprises

5.5 By Geography

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 5.5.1 North America
 - 5.5.1.1 United States
 - 5.5.1.2 Canada
 - 5.5.1.3 Mexico
- 5.5.2 South America
 - 5.5.2.1 Brazil
 - 5.5.2.2 Argentina
 - 5.5.2.3 Chile
 - 5.5.2.4 Rest of South America
- 5.5.3 Europe
 - 5.5.3.1 Germany
 - 5.5.3.2 United Kingdom
 - 5.5.3.3 France
 - 5.5.3.4 Italy
 - 5.5.3.5 Spain
 - 5.5.3.6 Russia
 - 5.5.3.7 Rest of Europe
- 5.5.4 Asia-Pacific
 - 5.5.4.1 China
 - 5.5.4.2 India
 - 5.5.4.3 Japan
 - 5.5.4.4 South Korea
 - 5.5.4.5 Singapore
 - 5.5.4.6 Malaysia
 - 5.5.4.7 Australia
 - 5.5.4.8 Rest of Asia-Pacific
- 5.5.5 Middle East and Africa
 - 5.5.5.1 Middle East
 - 5.5.5.1.1 United Arab Emirates
 - 5.5.5.1.2 Saudi Arabia
 - 5.5.5.1.3 Turkey
 - 5.5.5.1.4 Rest of Middle East
 - 5.5.5.2 Africa
 - 5.5.5.2.1 South Africa
 - 5.5.5.2.2 Nigeria
 - 5.5.5.2.3 Rest of Africa

6 COMPETITIVE LANDSCAPE

6.1 Market Concentration

6.2 Strategic Moves

6.3 Market Share Analysis

6.4 Company Profiles (includes Global level Overview, Market level overview, Core Segments, Financials as available, Strategic Information, Market Rank/Share for key companies, Products and Services, and Recent Developments)

6.4.1 Siemens AG

6.4.2 Itron Inc.

6.4.3 Landis + Gyr Group AG

6.4.4 Oracle Corporation

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 6.4.5 SAS Institute Inc.
- 6.4.6 Schneider Electric SE
- 6.4.7 GE Vernova
- 6.4.8 IBM Corporation
- 6.4.9 Hitachi Energy Ltd.
- 6.4.10 AutoGrid Systems Inc.
- 6.4.11 Uplight Inc.
- 6.4.12 Uptake Technologies Inc.
- 6.4.13 Tantalus Systems Corp.
- 6.4.14 Amdocs Ltd.
- 6.4.15 Sensus USA Inc. (Xylem)
- 6.4.16 Honeywell Smart Energy
- 6.4.17 Networked Energy Services
- 6.4.18 Grid4C Inc.
- 6.4.19 Atonix Digital LLC
- 6.4.20 Gridspertise S.r.l.
- 6.4.21 Tollgrade Communications Inc.
- 6.4.22 C3.ai Inc.
- 6.4.23 Opower (Oracle Corporation)
- 6.4.24 Accenture plc
- 6.4.25 Enlit AI Ltd.

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

7.1 White-Space and Unmet-Need Assessment

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

**Smart Grid Data Analytics - Market Share Analysis, Industry Trends & Statistics,
Growth Forecasts (2025 - 2030)**

Market Report | 2025-07-01 | 120 pages | Mordor Intelligence

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	\$4750.00
	Team License (1-7 Users)	\$5250.00
	Site License	\$6500.00
	Corporate License	\$8750.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>
Zip Code*	<input type="text"/>	Country*	<input type="text"/>
		Date	<input type="text" value="2026-03-03"/>
		Signature	

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com



Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com