Big Data Analytics Market In The Energy Sector - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 110 pages | Mordor Intelligence

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Report description:

The Big Data analytics market in the energy sector is expected to record a CAGR of 13.15% during the forecast period. Big Data analytics plays a crucial role in reducing energy consumption and improving energy efficiency in the energy sector, thus boosting the demand for analytics in the industry.

Key Highlights
The scarcity of fossil fuels is increasing the dependency on alternate energy sources, such as solar, wave, and wind turbines, where consumption is rising rapidly. Thus, it has become imperative to use advanced big data-based analytical tools to understand the behavior or adaption of these energy sources. The volatility in oil prices leads to high expenditure on energy-related projects, creating demand for big data analytics. Thus, the need for quality information is increasing, which may boost the market's growth and profitability.
The energy sector faces many problems like predicting production demand, enhancing efficiency, optimizing load distribution and optimization, and optimizing operational processes. Many large corporates like BP and Halliburton have adopted data analytics, while there is a high scope for small companies with lesser data to achieve new heights. Big data analytics helps deliver consistent and data-backed outputs to avoid downtime or supply chain disruption.
Some service providers collaborate to deliver effective analytics services. In September 2022, Schlumberger and Cognite announced entering a strategic partnership to integrate Schlumberger's Enterprise Data Solution for subsurface with Cognite's open industrial DataOps platform, Cognite Data Fusion. The partnership would allow customers to integrate data from wells, reservoirs, and facilities in a single, open platform and leverage embedded AI and advanced analytics tools to optimize production, reduce costs and decrease operational footprint.
However, the recent COVID-19 outbreak revealed the negative impacts of uncertainty on decision-making processes and markets. When market participants started receiving real-time information about the situation, the energy markets began to ease. Big Data

can be used in such scenarios to amplify information to various stakeholders to prevent panic and ensure market stability and security of supply.

Also, after the COVID-19 pandemic, the growing awareness of the benefits of smart metering and increased investment in alternative energy sources are driving market expansion. Furthermore, the volatility of oil prices, the depletion of fossil fuels, and emerging trends for improved efficiency and dependability in power transmission contribute to the demand for Big Data analysis in the energy sector. The pandemic also highlighted the shortage of trained labor with domain-specific knowledge limiting industry expansion.

Energy Sector Big Data Analytics Market Trends

Smart Metering to Fuel Market Growth

Smart metering in Big Data analytics involves grid operations, field services, resource planning, customer experience, and regulatory compliances. It helps predict demand and forecast based on the data collected, which is likely to boost the market growth.

Also, Big Data analytics in smart metering helps project energy consumption, which plays a vital role in managing demand and supply and mitigating the waste of energy. For instance, Siemens introduced the incorporation of Big Data analytics with smart meters to achieve deeper insights from the smart grid, which, in turn, offers data to mitigate extra energy consumption and increase profit margins.

Moreover, utilities that require decarbonization and decentralization can benefit from metering data by adding other information sources like geographic information systems (GIS), CIS, and weather data. AWS Quick Start deploys the Smart Meter Data Analytics (MDA) platform on AWS Cloud. This platform helps the utilities tap the value of energy consumption data while removing heavy lifting. The platform also allows utilities to provide new services such as load prediction, deeper customer engagement through proactive notifications, predictive maintenance on distribution assets, and circuit quality analytics.

Depending on the business context, the individual operating systems can send data to the platform and get actionable insights. For example, According to a report by AWS shared in October 2021, Kalkitech is an AWS Select Technology Partner, providing meter communication solutions such as a protocol stack for meter reading applications, a large-scale meter simulator, and a meter test tool. The company offers these tools per the regulatory bodies, providing smart metering as a cloud-based service. Developing countries, such as India and Brazil, are hugely investing in the energy sector, which is expected to boost smart metering with advanced Big Data techniques in the coming years.

Asia-Pacific to Emerge as the Fastest-Growing Market

Factors, such as the increasing adoption of IoT and smart technologies and various government initiatives, such as smart cities, across Asia-Pacific countries, including China and India, affirm the region as the fastest-growing region in the Big Data analytics market in the energy sector.

According to the recent data released by the National Smart Grid Mission, Ministry of Power, out of the total allocated quantity of 11.16 million smart meters, 3.73 million were installed across various states in India as of January 2022. EESL aimed to replace 25 crore conventional meters with smart meters in India through the Smart Meters National Program (SMNP) to reduce AT&C losses. In the Asia-Pacific, China is expected to be the leading country in Big Data analytics in the energy and utility sector due to its large population and increasing rate of adaptation of smart metering and smart grid systems.

According to Bloomberg, in May 2022, the Chinese government reported having invested around USD 4.3 Billion on clean energy projects like solar and wind projects in the first fourth months of 2022, about 204% compared to the investment in the same

period in 2021. Such promising investments will attract smart metering and related projects at the generation level and for further consumption to several end-users in the country, propelling the demand for big data analytics for the best utilization of the resources.

Additionally, there has been significantly high activity in the overall region's power generation sector. The energy sector in the region is increasingly adopting greener power generation solutions, especially in India, China, Japan, and Singapore. Such trends are expected to drive the market's growth in the Asia-Pacific region during the forecast period.

Energy Sector Big Data Analytics Market Competitor Analysis

The Big Data analytics market in the energy sector is consolidated, with major players dominating the market share. Due to factors a lack of skilled workforce (with analytical skills and expertise), rising privacy concerns, and data breaches, new players are finding it difficult to enter the market. The competitive rivalry is expected to be high due to higher market penetration and the ability to invest in new technologies.

February 2022 - cQuant.io, an energy analytics company, partnered with Microsoft to scale its cQuant energy analytics solution, helping customers reduce their greenhouse gas emissions with reliable renewable energy purchases.

February 2022 - IBM and SAP strengthened their partnership to help clients move workloads from SAP Solutions to the cloud. IBM announced teaming with SAP to provide technology and consulting expertise, making it easier for clients to embrace a hybrid cloud approach and move mission-critical workloads from SAP Solutions to the cloud for regulated and non-regulated industries.

Additional Benefits:

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

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