



The Rise of Smart Grid and Renewable Energy in the Electric Sector: Electrifying the Future

Smart Grid Overview:

With the advancement in technology, there is an immense increase in electrical energy demand that has become a challenge for its production and distribution. Urbanization and living standards have increased the demand for energy requirement. So this rising demand is growing the complexities of power grids by increasing requirements for greater reliability, efficiency, security, and energy sustainability concerns. Furthermore, there is a lack of monitoring and real-time control in traditional non-smart systems, which creates a challenging opportunity for smart grids to act as real-time solutions.

The smart grid represents an unprecedented opportunity to move the energy industry into a new era of reliability, availability, and efficiency that will contribute to our economic and environmental health. As per IEA (International Energy Agency), in 2021, investment in electricity grids has increased significantly by 6%, with advanced countries such as the U.S. and China raising funds and facilitating the electrification of buildings, industry, and transportation as well as integrating variable renewable energy sources into the power grid.

Therefore, the current electrical system has some significant transmission losses, low power quality, a high risk of rolling blackouts, insufficient electricity supply, and many other barriers, further opening up an opportunity for new innovative smart grid technologies. The smart grid also employs digital communications technology to monitor and respond to local variations in use, enabling the network to self-heal after a power outage. Through different smart grid solutions, the grid then delivers an efficient and dependable electricity supply, benefiting the economy and the environment and fostering innovative smart grid technologies. In addition, smart grid solutions are being recognized by governments in both developing and rising countries as a strategic infrastructure investment that will aid in their long-term economic development and hence, help them meet their carbon emission objectives. However, a lack of energy accessibility, particularly in developing nations, inadequate regulations, and failed attempts to modernize and extend grid infrastructure are hindering the market for innovative smart grid technology.

Major Challenges Faced by the Client:

In the past decade, the installation of renewable energy sources for electricity has grown at an annual rate of 25%, which has reached 29,500 MW as on March 2019 across the region. Distribution systems were also suffering from frequent and prolonged duration outages. To supplement capacity addition and electrification of remote areas, the client wanted to develop a smart-grid system that can provide all basic energy access. The integration of communication, computational, and advances in power devices can be harnessed to develop a smart grid that can monitor power flows from generation points to consumption in real-time.

Client Requirements:

The client has approached Data Bridge Market Research to better understand the current scenario of smart grid market and identify the business scope in the competitive landscape. Additionally, the client has asked for the following requirements:



Potential market size for their product portfolio	Key factors inflicting the adoption of smart grid and renewable energy
The future growth rate for the required market	Competitive analysis of leading market players

Furthermore, the client wanted to know about the current trends and technologies along with a detailed study of major players that are adopting in smart grid market so that they can expand their business accordingly

DBMR Approach to Overcome Client Challenge:

The smart grids include three major modules: automated control systems, communication technologies, and distributed intelligence. Data Bridge Market Research has prepared a business model for the client covering every aspect of the market, including the various solution and subsystems related to the grid.

DBMR Research Methodology:

To provide better insights into the market to the client, the company has bifurcated the smart grid market into various segments by offering deployment mode, sub-system & security type in the report. The offering segment is further categorized into solution, which includes firewall, identity and access management, security and vulnerability management, and services into professional & managed services.

Sub-system is further segmented into supervisory control, data acquisition/ industrial control system (SCADA/ICS), advanced metering infrastructure (AMI) and demand response and home energy management. In order to provide the client the insights into the market, Data Bridge Market Research has provided a detailed study of each segment along with the market size and growth rate so that the client could get an overview of the dominating segment along with the trend associated with it.

Furthermore, the company has provided a smart grid market competitive landscape that provides details by competitors, such as company overview, financial, recent investment in R&D, and new market initiatives. This further helped the client better understand the market player and identify the key vendors, market disruptors, and niche players dealing in the market.

In addition, Data Bridge Market Research has provided a regional basis analysis where it is studied that Asia-Pacific is projected to dominate the smart grid market in the coming future. This analysis helped the client plan and expand their business.

Hence, with this approach, the client could get better insights into the market and prepare their business model accordingly.



Business Impact:

The smart grid market is analyzed, and market size insights and trends are provided by country, solution, service, deployment mode, and sub-system and security type as referenced above. The market report curated by the Data Bridge Market Research helped the client to identify the scope of the business expansion and to understand the key strategy of the major leaders provided in the market. The report provided extensive details of the import/export analysis, pricing analysis and expert analysis to provide the client with a valuable market overview and market insights to help them make strategic decisions for identifying core market applications.

Outcome:

Data Bridge Market Research provided the client with better insights of the smart grid market by analyzing the smart grid market size, providing the competitive landscape and details of the segmentation so that the client could expand their footprint across the region. Furthermore, Data Bridge Market Research provided the client with actionable intelligence against its major competitors and changing market dynamics which helped them to analyze the company's growth changes in terms of penetration, technology, and future endeavors enabling the client to make business strategies.