Virtual Power Plant Market Research Report- Forecast to 2023

Global Virtual Power Plant Market Report by Technology (Distribution Generation, Demand Response, and Mixed Asset), by End-User (Commercial, Industrial and Residential) and by Region - Global Forecast to 2023.

Market Scenario:

A virtual power plant is a network of medium-scale, decentralized power generating units same as Combined Heat and Power (CHP) units, solar plants and wind farms as well as flexible power consumers and batteries. The unified units are dispatched through the principal control room of the virtual power plant but stays self-governing in their process and possession. The prime objective of the virtual power plant is to release the load on the grid by rapidly dispensing the power produced by the individual units during the peak load. Additionally, the combined power generation and power consumption of the interacted units in the virtual power plant is merchandised on the energy interchange platforms.

A virtual power plant is comprised of a fundamental IT control structure and distributed energy assets often renewable energy resources like solar, hydropower, wind and biomass units as well as flexible power consumers, by interacting all the partaking units via a remote control unit. It then establishes a data transfer between the fundamental control system and the and the partaking units. The fundamental control system is then unable to monitor, forecast, and dispatch the networked units.

Virtual power plants aim at the smoothly integrating a large number of non-conventional energy units into the existing central energy systems. It occurs through flexibility coming from all networked units. Moreover, the power vendors within a virtual power plant setup can use live data to enhance projecting and trading of renewable energies. As a result, virtual power plants progressively take over the role of the conventional power plants by selling their output on the wholesale markets and assuming authority for a balanced grid.

Global Virtual Power Plant market has been segmented based on technology, end-user, and region. Demand response segment by technology currently holds the largest share and is expected to hold its dominance in the virtual power plant market during the forecast period. Demand response is highly lucrative for investment due to everlasting benefits for end-users and improving the energy efficiency of the grid. Hence, demand response is expected to show high growth rate. However, the Industrial by end-user held the largest market share in 2016 and is expected to have the largest share over the forecast period. Industrial end-users are among the highest adopters of the virtual power plant setups and services and thus provide great contribution to the market expansion. The peak load of the electricity is the highest in various industries such as petroleum, paper & pulp, and chemical among others, which has created a productive market for virtual power plants in the industrial sector.

The industry is expected to have a huge number of technological advancement over the forecast period owing to rigorous developments in power sector coupled with growing consumer preferences for uninterruptible power supply. The market is also expected to have high expansion activities by multinationals and well-established companies. Mergers and acquisition activities are expected to be seen over the forecast period.

The global virtual power plant market is expected to grow at ~ 22% CAGR during the forecast period.
Market Segmentation

Global Virtual Power Plant Market

The growth of virtual power plant market is driven by various factors in regions, across the globe. The major factor boosting the market growth is the growing demand for power through a reliable power source is expected to drive the global industry over the forecast period. Virtual power plant helps in delivering energy peak usage times and the end-users can save up the excess energy in the energy storage devices such as batteries. Also, the growing government mandates and initiatives for customer engagement, and incentives programs might prove to be an added boost for the end-user segment. The global rise in the demand for non-conventional energy in the power generation sector, changes in dynamics of power grids from centralized to distributed, and regulating costs and easy convenience of energy storage drive the development of the virtual power plant market. The phenomenal growth in the construction industry, exclusively in the Asia Pacific region is expected to propel the overall virtual power plant market during the forecast period.

Key Players

The key players of global Virtual Power Plant market are ABB Ltd. (Switzerland), Autogrid Systems, Inc. (U.S.), Blue Pillar, Inc. (U.S.), Cisco Systems, Inc. (U.S.), Comverge (U.S.), Cpower Energy Management (U.S.), Enbala Power Networks, Inc. (Canada), EnerNOC, Inc. (U.S.), Flextricity Limited (U.K.), General Electric Company (U.S.), Hitachi, Ltd. (Japan), International Business Machines Corporation (U.S.), Robert Bosch GmbH (Germany), Schneider Electric SE (France), and Siemens AG (Germany).

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