

Enabling Technologies For The Smart Grid

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ELECTRONICS.CA PUBLICATIONS, the electronics industry market research and knowledge network, announces the availability of a new report entitled "Enabling Technologies for the Smart Grid".

According to a technical market research report, the value of the global market for enabling technologies for the smart grid was nearly \$23.7 billion in 2011, but is expected to increase to \$33.1 billion in 2016, for a 5-year compound annual growth rate (CAGR) of 6.9%.

The largest segment of the market, distributed energy generation and storage, is projected to increase at a CAGR of 9.2% to \$29.2 billion in 2016, after being valued at an estimated \$18.1 billion in 2011. The second-largest segment currently, communications, is estimated at \$2.8 billion in 2011, but is expected to decrease at a CAGR of -23.6% to only \$741.6 million in 2016.

The sensing, measurement, and control segment will increase in value from \$2.7 billion in 2011 to \$3.1 billion in 2016, for a CAGR of 3%. The smallest segment, transmission lines, will have the highest rate of growth, a CAGR of 87.2%, rising from \$16.9 million in 2011 to \$389 million in 2016.

The century-old U.S. electrical grid has been called the largest interconnected machine on earth. It consists of more than 9,200 electric-generating units with more than 1,000,000 MW of generating capacity, connected to more than 300,000 miles of transmission lines.

Several years ago, the U.S. National Academy of Engineering voted the national electrification made possible by this grid as the "most significant engineering achievement of the 20th century."

However, the grid is showing its age. There have been massive blackouts in recent years, including the 2003 Northeast blackout, the worst in the nation's history. Although it was accidental, the 2003 blackout was a reminder of the grid's vulnerability to terrorist attack.

And this blackout was foreshadowed by a troubling trend: According to the Department of Energy, 41% more outages affected 50,000 or more consumers in the second half of the 1990s than in the first half of the decade. The "average" outage affected 15% more consumers from 1996 to 2000 than from 1991 to 1995 (409,854 versus 355,204).

Regular power outages and blackouts cost the U.S. economy an estimated \$80 billion annually, according to a 2005 Lawrence Berkeley National Laboratory study. The figure reflects only direct losses to the economy, and does not take into account the inconvenience and frustration experienced by users during a power outage.

In addition to growing concerns about the U.S. electric grid's robustness and reliability, the grid was designed and built with one basic objective in mind " keeping the lights on.

Governments and utilities in the U.S. and elsewhere are investing in new technologies in order to build a 21st-century grid that runs more efficiently, generates higher-quality power, resists attack, is self-healing, enables consumers to manage their energy use better and reduce costs, and integrates decentralized generation (e.g., renewable energy) and storage (such as fuel cell) technologies.

These technologies are often referred to generically as smart grid technologies. Smart grid describes a set of related technologies, rather than specific technology with a generally-agreed-on specification.

The overall goal of this report is to reassess the business opportunities for providers of smart grid technologies that will arise over the next five years as products utilizing these technologies increase their market penetration.

Details of the new report, table of contents and ordering information can be found on Electronics.ca Publications' web site. View the report: <http://www.electronics.ca/publications/products/Enabling-Technologies-for-the-Smart-Grid.html>

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