

Smart Grid Overview

Smart Grid technology enables electric utilities to improve their operating efficiencies and reduce costs. Consumers will be able to make smarter energy choices by working with the utility to manage their overall power consumption. The resulting “Smart Grid” will deliver improved energy efficiency and help reduce green house gas emissions globally.

For **utilities**, Smart Grid technology provides several benefits. It boosts distribution reliability and visibility, helping utilities manage energy peaks and to operate more profitably and efficiently while avoiding serious issues like blackouts. By optimizing capacity on a daily basis, utilities minimize their need to tap into additional, more expensive power sources. Specific benefits include:

- Deliver energy more reliably, efficiently and with more security
- Reduce carbon emissions
- Operate more profitably
- Lessen foreign fuel dependencies

Consumers also benefit from Smart Grid technology. With its two-way communication capabilities, the Smart Grid gives consumers real-time cost and information about their energy consumption and their energy-use patterns. With this information in hand, consumers can potentially reduce their carbon emissions and manage their energy costs proactively, using smart devices to lower their energy use. Specific benefits include:

- Lower utility bills
- Manage energy consumption
- Reduce carbon footprint

“A smart electrical power grid could decrease annual electric energy use and utility sector carbon emissions at least 12 percent by 2030 – the equivalent of taking 55 million cars off the road.”
(Pacific Northwest National Laboratory, January 2010)

“By 2014, the U.S. smart grid market is expected to double from its 2009 value of \$21.4 billion to \$42.8 billion. The global market is predicted to grow even more forcefully, from \$69.3 billion in 2009 to \$171.4 billion in four years.” (Zpryme, December 2009)

“Americans are projected to use about 30 percent more electricity by 2030. The Electric Power Research Institute, the think tank of the utility industry, estimates that smart grid technologies could potentially lower projected annual energy consumption in 2030 by 1.2 to 4.3 percent.”
(The Electric Power Research Institute, February 2009)