

# U.S. Smart Grid to Cost Billions, Save Trillions

<http://www.reuters.com/article/2011/05/24/us-utilities-smartgrid-epri-idUSTRE74N7O420110524>

NEW YORK

Tuesday, May 24, 2011 4:54pm

EDT Reuters News

NEW YORK (Reuters) - A planned modernization of the U.S. national power grid will cost up to \$476 billion over the next 20 years but will provide up to \$2 trillion in customer benefits over that time, **according to industry experts.**

The so-called "smart grid" will save energy, reduce costs and increase reliability by delivering electricity from suppliers to consumers using two-way communication that can control appliances, the charging of electric vehicles and the flow of power from renewable sources at customers' homes.

"The implementation of the smart grid is a continuous process. As new technology is developed and becomes cost effective, it is being used to find the most effective way to meet supply and demand," Matt Wakefield, smart grid program manager at the Electric Power Research Institute (EPRI) said in a conference call on Tuesday.

To make the power system of the future a reality, EPRI, a non-profit electric research and development company, said power companies need to invest between \$17 and \$24 billion a year over the next two decades. **Much of those costs will be passed onto consumers.**

**"We need to tell power customers there is going to be an improved power system that will result in reduced costs even if they do not see an immediate reduction in their bill," said Clark Gellings an EPRI Fellow.**

By the year 2050, EPRI estimated the average electric bill will probably go up by about 50 percent if the smart grid is deployed. If not, Gellings said, the average electric bill could go up by almost 400 percent.

**Some of the biggest technology firms in the world are competing to supply the smart grid infrastructure, including International Business Machines, General Electric, ABB, Siemens, Google, Toshiba, Cisco and Microsoft.**

Last week, Japanese multinational Toshiba agreed to buy Swiss smart grid company Landis+Gyr for \$2.3 billion.

## MEETING SUPPLY AND DEMAND

The giant technology firms want to manufacture the devices and software needed to enable generating facilities to communicate with the equipment that uses electricity.

In addition to the giant technology firms, all sorts of firms in the power, renewable, appliance and auto industries can use the smart grid to interact with their customers.

Power retailers, like NRG and Consolidated Edison's ConEdison Solutions, can use the smart grid to sell more demand response and other services.

Appliance manufacturers, like Whirlpool and Haier Electronics, can sell more energy efficient appliances, and auto manufacturers, like Ford Motor and General Motors, can use the smart grid to power up their electric cars.

The nation's current power grid was not designed to meet the needs of a restructured electric marketplace, the increasing demands of a digital society or the increased use of renewable power production.

The grid today primarily consists of large coal, nuclear and natural gas-fired generating stations connected to local distribution networks by a high voltage network. The power flows predominantly from the power plant to the consumer.

## **RENEWABLES ON THE RISE**

The smart grid will continue to depend on large nuclear and fossil-fired power plants but also includes a substantial number of energy storage and renewable generating facilities.

Not surprisingly, the major technology companies like GE, Siemens and Toshiba, also dominate the renewable space. But there are plenty of other wind and solar companies that can benefit from the smart grid, including FirstSolar, Sharp and Vestas Wind.

### **Consumers want reliable and low cost power but increasingly they also want clean electricity.**

In his State of the Union message in January, President Barack Obama set a goal of 80 percent clean energy by 2035 and even though he included nuclear power and clean coal in that goal, there is still a lot of room for more renewable sources.

The United States gets about 46 percent of its power from coal, 21 percent from natural gas and 20 percent from nuclear. Renewables, like wind and solar, generate less than 5 percent of the total, according to data from the federal government. End

(Reporting by Scott DiSavino; Editing by Alden Bentley)