

U.S. to boost renewables, energy efficiency and smart grid

President-elect Barack Obama has asked Congress "to act without delay" to pass legislation that included doubling renewable energy production in the next three years and building a new electricity "smart grid", reports Reuters.

In addition, Obama said he also planned to modernize 75 percent of federal buildings and improve energy efficiency in two million homes to save consumers billions of dollars on energy bills.

"Smart grid" describes a more efficient, cost-saving method of moving electricity along major long-distance transmission lines to local distribution power lines and disparate end-users in homes, businesses and schools.

Smart grid technology will help renewable power sources like solar panels and solar power plants and wind farms integrate into the overall transmission system. Conventional power grids have difficulty with the intermittent nature of solar and wind power. The technology also supports energy saving efforts.

Cost savings in the long run

The estimated cost of creating a nationwide "smart grid" by investor-owned utilities in the United States is USD50 billion over 10 to 20 years, said **Ed Legge**, an analyst with the Edison Electric Institute, a power industry lobbyist. Adding federally and locally owned utilities, the full cost would be about USD65 billion.

Smart grid advocates say utilities and customers will realize cost savings in the long run, despite the high roll-out costs.

Cutting demand during peak hours would reduce the need for capital spending on more power plants, substations and power lines. Proponents say it also will cut greenhouse gas emissions blamed for global warming.

After year-long study of smart grid technologies in the Pacific Northwest, U.S. officials and IBM estimated customers saved 10 percent on monthly power bills and cut power use by 15 percent.

If those figures could be realized nationwide, it could save between USD70 billion and USD120 billion in spending on new power plants and transmission lines, the study found.

Improving utility-customer communication

In a smart grid, computers and sensors, installed at power plants, substations and along power lines, would signal control centers that would better manage the

flow of electricity. For instance, computers would detect transmission bottlenecks and direct power around them.

Power outages are now monitored as customers call local utilities to report them. Smart grid computers would discover outages automatically.

"Smart meters" would be installed to replace conventional electricity meters. These would facilitate communication between utilities and their customers, letting them curb power use when demand peaks and prices are high.

The meters combined with smart appliances would make it possible to control and regulate appliances remotely.

Smart grid technology is in various forms of planning and implementation depending on the utility or state jurisdiction.

Investor-owned utilities account for about 70 percent of U.S. electricity use. Several utility companies have begun replacing conventional electricity meters with "smart meters" that receive signals from the grid and send signals back to grid operators.