



Smart Grid Facts

Economic Benefits of a Smart Grid

- Obtaining 20% of U.S. electricity from wind in 2030 would create 500,000 gross jobs and \$450 billion in economic impact. (Source: U.S. Department of Energy)
- Transmission congestion costs homeowners and businesses in the Eastern U.S. \$22 billion per year in the form of higher electricity prices. (Source: Union of Concerned Scientists)
- A stronger power grid will also be more reliable, significantly reducing the immense cost of power outages for American consumers and businesses. The 2003 blackout in the Northeast U.S. and Canada caused an estimated \$7-10 billion in economic losses. (Source: ICF Consulting)
- Up to 280,000 new jobs can be created directly from the deployment of Smart Grid technologies, in addition to enabling a substantial number of indirect jobs through the deployment of new technologies. (Source: GridWise Alliance)
- The solar industry can create an estimated 440,000 gross jobs and \$325 billion in economic development over the next eight years. (Source: Solar Electric Power Association)
- The wind energy sector alone will account for 184,000 jobs in the European Union in 2010, and an estimated 318,000 by 2020. (Source: European Wind Energy Association)
- An investment of \$10 billion in 25-year solar power purchase agreements would produce 4,000 MW of energy and create 350,000 jobs. (Source Solar Energy Industries Association)

Environmental Benefits of a Smart Grid

- "Smart Grid" enabled distribution would reduce carbon dioxide emissions by up to 25%. (Source: The Electric Power Research Institute)
- A 25% reduction in CO₂ emissions would lower electric sector CO₂ emissions by 7.6 billion tons by 2030; the same impact as removing 140 million cars from the road. This reduction would in turn lower electric sector coal use by 18%, electric sector natural gas use by 50%, and avoid the construction of 80,000 megawatts (MW) of new coal-fired power plants. (Source: U.S. Department of Energy)
- The wind power capacity installed in Europe by the end of 2007 (56.5 GW) will eliminate the emission of about 90 million tons of CO₂ per year (Source: European Wind Energy Association)
- The use of wind as 20% of the U.S. power supply would save 4 trillion gallons of water between now and 2030. (Source: U.S. Department of Energy)

Smart Grid as an Energy Solution

- A state-of-the-art high-capacity transmission line can carry as much electricity as six standard lines, at 1/3rd the cost, using 25% less land, and with 1/10th the line losses. (Source: American Electric Power)



- “Smart grid” enabled distribution could reduce electrical energy consumption by 5-10%, carbon dioxide emissions by 13-25%, and the cost of power-related disturbances to business by 87%. (Source: The Electric Power Research Institute)
- Cyber-security technologies to reduce the grid’s vulnerability to terrorist attacks will only be effective with an upgraded digital system. (Source: Energy Security Leadership Council)
- Almost 300,000 MW of proposed wind projects, more than enough to meet 20% of our electricity needs, are waiting in line to connect to the grid because there is inadequate transmission capacity to carry the electricity they would produce. (Source: U.S. Department of Energy)
- Smart grid enabled energy management systems have proven in pilots to be able to reduce electricity usage by 10–15%, and up to 43% of critical peak loads. (Source: The Brattle Group, SMUD and PNNL.)