

Vermont SMARTgrid: RELIABILITY & IMPROVED ELECTRICAL SERVICE

What is smart grid?

“Smart grid” is an upgraded electric system that uses fiber optic cable and digital technology to relay information back and forth between customer meters and the utility, and between the utility and various components of the electric grid. When fully operational, smart grid will provide a more reliable electric system, with the ability to incorporate renewable energy sources and offer customers innovative rate options and other tools to manage their electric use.

Improved power quality

Have you ever had to reset your digital clocks even though you didn't notice the power was out? That's because digital equipment and electronics are sensitive to even momentary interruptions and small fluctuations in power. While residential customers may only need to reset a clock, a manufacturer may lose its current production if power quality fails or power is interrupted. An advanced electric grid can better maintain consistent power quality to meet the needs of digital technology.

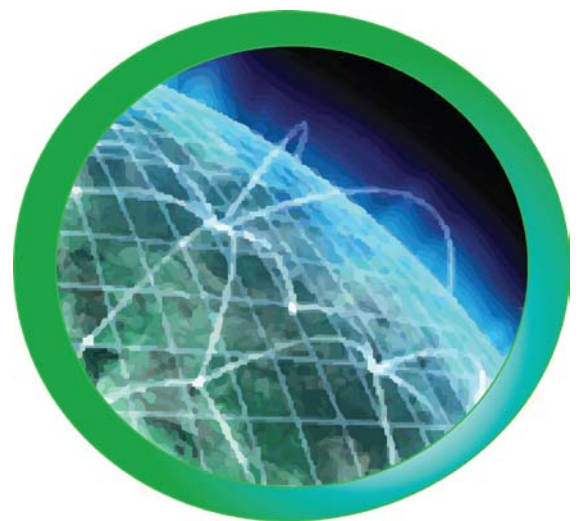
Reducing the potential for large-scale blackouts

The U.S. has experienced five massive blackouts in the past 40 years; three of them in the past decade. The annual cost of power failures has been estimated at \$80 billion¹, with wide-ranging impacts from halted plant production, food spoilage, traffic light failures, and interrupted credit card transactions. Smarter grid technologies will help prevent these kinds of large-scale events by detecting and isolating power outages before they become rolling blackouts. A smarter grid can also help ensure that service is restored quickly and strategically to emergency services.

¹ See K. LaCommare and J. Eto, “Costs of Power Interruptions to Electricity Consumers in the United States,” LBNL-58164, Lawrence Berkeley National Laboratory, Berkeley, CA, February 2006. This reports reviews several different analyses and reports with some reported estimates of electric outages at well over \$100 billion annually.

Better outage management

No matter how reliable our electric system, Vermont's rugged natural environment means we will have unplanned outages from time to time. A smarter grid will help utilities detect outages sooner, leading to better outage management and quicker and more efficient restoration of service. When problems do occur, utilities will be able to minimize their impacts by isolating affected areas and in some cases rerouting power through automation or remote operation.



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For more information: <http://www.velco.com/smartgrid> or <http://www.sgiclearinghouse.org/>