New Solutions Require New Thinking

America’s demand for power threatens to overburden an already congested electric system. The U.S. Department of Energy is addressing these energy challenges with innovative solutions to energy generation. Its Renewable and Distributed Systems Integration (RDSI) Program is helping to alleviate congestion, reduce greenhouse gas emissions, and improve reliability by investigating answers such as

- Microgrid technologies
- Distributed generation
- Two-way communication systems
- Demand response programs

Reducing Peak Demand

The RDSI program aims to reduce peak load on distribution feeders 20% by 2015. To help achieve this goal, RDSI is sponsoring demonstration projects nationwide. From California to New York, these projects are bringing together stakeholders across the distribution chain: homebuilders, industry, utilities, universities and national labs. The public-private partnerships are developing new approaches to generating energy by harnessing the power of cutting-edge technologies as diverse as photovoltaics, fuel cells, hydro turbines and pumped water storage.

Renewable Distributed Generation is “Smart” because it...

- Reduces greenhouse gas emissions
- Improves efficiency
- Helps defer system upgrades
- Reduces peak load
- Alleviates congestion
- Improves reliability
- Enhances energy security

Empowering Consumers

Imagine a grid where utilities and consumers work together to alleviate congestion and meet growing energy demands. RDSI is working to facilitate this reality by focusing on the integration of on-site, clean distributed and renewable generation.

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New Thinking at Work

To help address the nation’s energy challenges, the U.S. Department of Energy’s Renewable and Distributed Systems Integration (RDSI) Program recently selected nine demonstration projects. Each one will integrate on-site, clean, distributed generation to demonstrate a 15% peak load reduction on a distribution feeder. The nine projects, located throughout the United States, cut across all levels of the distribution chain, from neighborhoods to industrial facilities to utilities, and are developing different approaches for reaching their goal. Some of the technologies being integrated are plug-in hybrid vehicles (PHEVs), wind turbines, photovoltaics, pumped storage, compressed air storage, microgrid technologies, and feeder automation systems.