

# INTELLIGENT GRID SOLUTIONS

AWAKENING THE SMART GRID



Market Intelligence Report

SMART GRID

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Do you know what demand response is? If not, don't worry – unless you are employed by a utility, it's probably not a term you've seen or heard before. It is utility-industry terminology for certain types of programs targeted to customers. Here's the Smart Grid Dictionary definition of Demand response programs: "Utility programs designed to change on-site demand for energy through means of changes in prices, load control signals, or other incentives to customers. The programs are activated at times of peak usage. Demand response programs may include dynamic pricing/tariffs, price-responsive demand bidding, contractually obligated and voluntary curtailment, and direct load control/cycling. Utilities use these programs to address system reliability, asset use efficiency, market conditions, and avoid investments in new T&D."

What does this really mean? Here's the bottom line. Utilities now have power plants that only operate at the times when the need for electricity is greatest – called peak demand. These expensive assets (also known as "peaker" plants) may only operate for hours – seriously, mere hours – of time, but are required to deliver electricity at the times of greatest consumption, or else we experience blackouts. The most predictable periods of greatest electricity use are those hot spells in the summer when everyone cranks up their air conditioning. There are 8760 hours in a year. Some peaker plants only operate for 50 hours in a year. Global warming will certainly increase air conditioning use, but even then, it is hard to create a nice Return on Investment for a seldom-used peaker plant.

However, if utilities and consumers can work together to reduce other electricity usage during these extreme weather conditions that trigger peak demand, it means utilities can avoid adding more expensive peaker plants that sit idle except for those few hours in a year. If utilities have to build more power plants, consumers usually see rate increases. So, if we work with utilities to reduce our electricity consumption during these times, we all save money, or at least keep the cost curve under control. In fact, some programs could even offer money back to consumers who reduced their electricity use during specified timeframes.

Smart Grid technologies like smart meters and Home Energy Management Systems (HEMS) will dramatically increase the opportunities for consumers and utilities to work together to reduce and shift electricity consumption. As we've already seen with some smart meter rollouts, success is defined by the quality of the marketing and communications plans. The same will be true about programs that require consumer participation on a massive scale.

The Federal Energy Regulatory Commission (FERC) just closed the comment period for a Discussion Draft titled, "Possible Elements of a National Action Plan on Demand Response". This process invited feedback from the public on objectives, strategies, and actions that can ensure the maximum participation and success of demand response programs. Buried deep in the 76 page document was a question about whether or not the term "demand response" needs some consumer-friendly terminology. Absolutely and most definitely. If you need an explanation to understand that demand response really means an opportunity for consumers to save or make money, then you need to change the term.

In my comments to FERC, I suggested that at a national level, demand response programs should be called Smart Saver programs because there's no question about the objective. For many utilities, the greatest Smart Grid challenges are not technical, but instead are marketing and communications. There will be significant amounts of complex information that must be shared with residential consumers in the next few years about Smart Grid technologies and HEMS solutions as part of well-designed consumer enlightenment programs. If the utilities' starting point for consumer enlightenment is talking about demand response, a term that defies intuitive understanding, then the communications challenge is magnified.

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