

Integration of distributed resources in the dispatch

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Abstract

Environmental concerns combined with the recent events in the Middle East and in Japan are increasing governmental pressures to accelerate the deployment of alternate sources of supply and the adoption of electric vehicles. As such, the deployment of distributed, intermittent resources presents several challenges ranging from cost effectiveness of the new technologies to reliability concerns.

The presentation will focus on a solution being deployed in the United States, which combines and co-optimizes demand response with behind-the-meter generation and energy storage assets. The co-optimized assets then participate in the wholesale energy and ancillary markets. Viridity Energy's solution is based on a real-time simulation and optimization platform (VPower), interfaced with the customer assets, the market operator and the distribution utility, which performs a security constrained optimal dispatch of behind-the-meter distributed resources.

The resulting solution provides a way to "firm up" intermittent renewable generation by co-optimizing it with storage and demand response, thus providing utilities with reliability enhancements, and improving the customer load factor, thus reducing the utilities capacity requirements. In addition to achieving supply savings, end customers are able to monetize "negawatt" revenues on the wholesale markets, resulting into an accelerated ROI and incentives to adopt the deployment of green technologies.

Examples of projects will be provided, ranging from campuses (Drexel University, University of Massachusetts, UC San Diego) to commercial buildings and transit systems (Philadelphia).