

Speaker: Michael Siemann, PhD  
Organization: Whisker Labs  
Email: [msiemann@whiskerlabs.com](mailto:msiemann@whiskerlabs.com)

In recent years, increases in electricity demand have exceeded increases in electricity generation capacity because programs such as demand response (DR) have been able to curtail demand when the grid is strained. Building heating, ventilation, and air conditioning (HVAC) loads are the most dynamic seen throughout the year and, hence, the first targeted by many utility DR programs. The most common approach over the past decade has been residential direct load control using remote compressor cycling, but as the need for capacity increases and this technology becomes antiquated in our more connected world, utilities have been turning to programs that focus on connected thermostats.

Our team at Whisker Labs has been delivering demand response capacity in utility programs since 2012 by bringing intelligence to connected thermostats. At the core of our technology is the use of grey-box building energy models and hyper-local weather data and forecasting. These models serve as a simulation engine for all aspects of HVAC loads in DR which our demand response management system (DRMS) serves up to fill the needs of utilities, independent system operators (ISO), and retail electricity providers (REP). In this session we will share what we've learned while administrating a wide range of residential and commercial DR programs across North America these past seven years. Specifically, we plan to highlight the advantages of intelligent thermostat control over traditional switch technology and more standard control strategies (simple setback). Additionally, we will discuss several nuances of the resource many administrators may not yet be aware of to help them, and policy makers, plan for the future.