

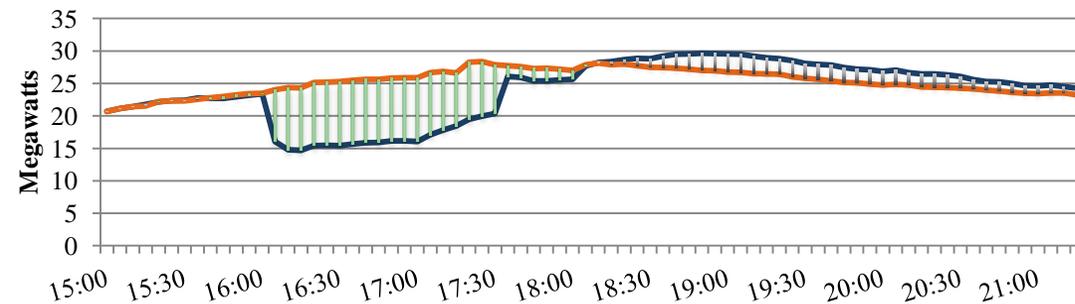


DR as a Reliability Resource for Grid De-carbonization

**A National Summit On
Smart Grid and Climate Change
October 13, 2015**

Overview

- DR is a Proven Reliability Resource
- Clean Power Plan
- Demand Response Reduces Carbon Emissions
- Demand Response Should be Incorporated in all State Plans



Demand Response is a Proven Reliability Tool

- Demand Response has grown to provide over 27,000 MW of Capacity in the competitive wholesale energy markets.*
- According to PJM, during the Polar Vortex, demand response resources, while not required, “respond[ed] and assisted in maintaining the reliability of the system.”**
- PJM also stated “The total amount of demand response provided during the Polar Vortex was larger than most generating stations.”***

* US Demand Response Market Outlook 2014, GreenTech Media, GTM Research

** Analysis of Operational Events and Market Impacts During the January 2014 Cold Weather Events, May 8, 2014, p. 20.

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Clean Power Plan

- Draft CPP Rule Issued in June 2014
 - Draft included four building blocks, including “Demand Side Energy Efficiency”.
 - Demand Response not specifically included in Building Blocks.
 - AEMA and its members met with EPA officials to discuss specifically including Demand Response into its final rule.
 - Commissioned a study by Navigant to quantify emissions reductions from Demand Response.
 - Included hard data with formal comments to EPA.
- Final CPP Rule released in August 2015
 - Demand Response included explicitly in final rule.

Clean Power Plan

*“In this interconnected system, system operators, whose decisions, protocols, and actions, to a significant extent, dictate the operations of individual EGUs and large ensembles of EGUs, must reliably balance supply and demand using available generation and demand-side resources, including EE, **demand response** and a wide range of low- and zero-emitting sources. These resources are managed to meet the system needs in a reliable and efficient manner.”*

Clean Power Plan final rule, page 84

Demand Response Reduces Carbon Emissions

- Four pathways for DR to reduce carbon emissions
 - Direct
 - Load Reduction
 - Ancillary Services
 - Indirect
 - Increases level of renewables penetration
 - Competitive economics of DR force changes in system-wide fuel mix
- Navigant Conclusions:
 - Deployment of DR can yield > 1% carbon reduction through Direct pathways.
 - Deployment of DR can yield > 1% carbon reduction through Indirect pathways.

Demand Response Should be in State Plans

- Several environmental initiatives constraining traditional generation assets (one factor driving the creation of this conference).
- DR is a proven reliability resource
- Deployment of DR has now been shown to reduce emissions
- DR is a tool that facilitates deployment of renewable resources by changing the load profile in response to intermittent resources.
- Costs of DR, while not discussed here, are declining.
- From a state's perspective, this is win-win-win.
- Deploy DR to facilitate compliance with CPP goals.

Follow Up?

Frank Lacey

610-813-6379

724-413-0849

Frank.lacey@cpowercorp.com