



Perspectives on IMAPP and Demand Response

October 21, 2016

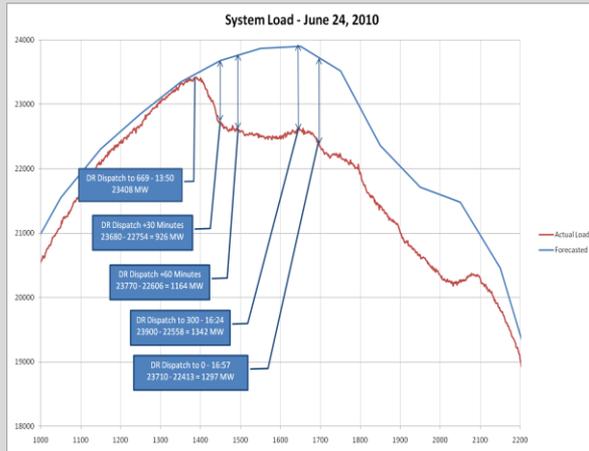
IMAPP: Where are we headed and why should we care?

- Region's high dependence on natural gas and increasing penetration of renewables underscores the need for fast and flexible capacity resources. Lynchpins behind "Pay for Performance:"
 - *"Many of these challenges could be resolved if suppliers undertook additional operational-related investments, whether in dual-fuel capabilities, short-notice and/or non-interruptible gas supply agreements, **new fast-responding demand response assets**..." (ISO-NE Pay for Performance White Paper)*
- DR/DER that provides reserves not only facilitates the integration of renewables but reduces carbon emissions
 - *"Overall Navigant estimates that DR can directly reduce CO2 emissions by more than 1 percent through peak load reductions and provision of ancillary services, and that it can indirectly reduce CO2 emissions by more than 1 percent through accelerating changes in the fuel mix and increasing renewable penetration." (Navigant, AEMA, 2014)*

IMAPP: The risks of unintended consequences

- To avoid unintended consequences that these fast, flexible resources are no longer incented to participate in wholesale markets, IMAPP process needs to better consider:
 - Clean resources that do not depend on energy market/PPA revenues
 - Impact of proposals on capacity market prices

DR: Attributes of the Resource



- Flexible system resource:
 - Highly reliable
 - Fast-responding (≤ 30 minutes)
 - Dispatched at sub-load zone level, and highly distributed nature mitigates non-performance risk
- Clean resource for region
- Dependent on competitive wholesale markets for deployment in region
 - Does not receive out of market payments

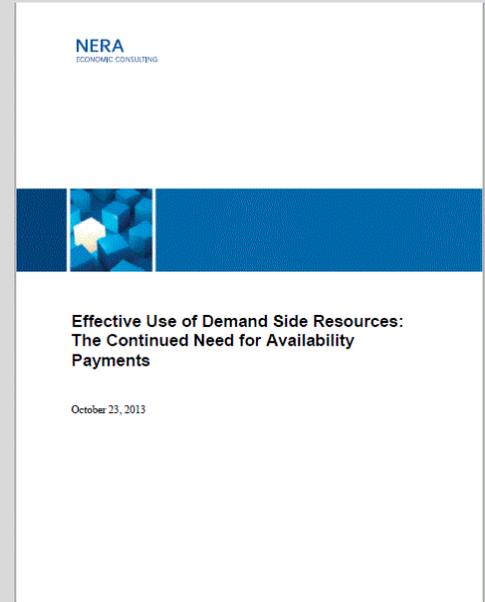
→IMAPP should preserve and strengthen the role of DR in New England

Demand Response's Role in ISO-NE: Past, Present, and Future

- Under past and current market design and rules, DR was/ is an emergency product
 - In 2018 under Pay-for-Performance (PfP), DR is an economic/reserve product
 - Will be fully integrated into the co-optimized energy and reserves market - perform in ≤ 30 minutes
 - Will deliver “negawatt hours” when dispatched, and clean reserves when not dispatched
 - Will continue to have high opportunity costs for customers to reduce consumption
- DR with a CSO will be well-utilized as a reserve resource beginning in 2018 but will not receive significant revenues from the energy market**

A Competitive Capacity Market is Essential to DR and other Customer-Sited Resources

- As documented in academic literature, capacity payments are foundational to DR participation and to end-use customer participation.
 - Same may be true for other innovative technologies (DER)
 - A competitive capacity price signal is foundational for DR and reserves does not happen without it
 - FCM reduces the speculative nature of investment, and an uncompetitive FCM price will dampen enthusiasm for new technologies
- *Capacity markets play a unique role specific to Demand Resources that is different from Generation resources***



IMAPP Proposal Implications

- Multiple proposals attempt to create a new market design to achieve public policy goals by fundamentally changing what capacity market design and revenues are intended to compensate
 - The FCEM and carbon price proposals significantly increase the role of energy market payments
 - To extent that energy revenues seek to cover capital as well as operating costs of projects, and those energy revenues are considered “in market” for purposes of the FCM, capacity pricing will be impacted
- The two-tiered pricing proposal seeks to accommodate public policy deployment while maintaining a competitive capacity market

Considerations for IMAPP Process Going Forward

To preserve and grow DR/DER participation in ISO-NE, IMAPP solutions need to:

- Preserve a competitive capacity market
 - Any proposal should describe its impacts on capacity market, specifically re price suppression
- If “clean” technologies are brought to market via an energy market, enable a level playing field for demand response
 - FCEM proposal should be amended to include a revenue opportunity for clean resources providing reserves
 - Provides a revenue stream to maintain the competitive positioning of these clean resources relative to those resources included under umbrella of public policy incentives