NEPOOL IMAPP Stakeholder Discussion October 21, 2016

Capacity markets & efficient renewable procurement in a carbon-constrained world:

Near-term vs. Long-term

Pete Fuller

Today's Discussion

- ✓ **IMAPP Objectives –** States and market participants
- ✓ **'Accommodate' vs. 'Achieve' –** Existing state policy requirements vs. anticipated policy objectives
- ✓ **Two-tier Pricing as a Critical Near-term Step** – maintains price signals and revenue for existing and needed new conventional resources during market transition.

IMAPP Objectives

- ✓ **States' Objective 1**: Accommodate states' near-term procurement mandates in wholesale markets with existing or revised market rules, to maintain reliability at least cost.
  - ✓States will be proceeding with mandated contracting processes
  - ✓According to the States, the existing renewable technology resource (RTR) exemption 'reasonably accommodates' state objectives

- ✓ IMAPP Status:
  - ✓Two-tier pricing proposal enables all state policy resources to participate in FCM and avoids 'double-payment' for centrally-procured (FCM) and state-procured capacity
  - ✓NRG proposal for two-tier also respects Wholesale Suppliers' Objective 1 (below), while RTR exemption and Public Systems' proposals do not

IMAPP Objectives

- ✓ **States' Objective 2**: Implement an ISO-NE administered auction framework for state-mandated policy requirements.
  - ✓Provide flexibility for states to specify, e.g., quantity, technology, location
  - ✓Additional design specs: i) revenues should be considered 'in market' for FCM mitigation purposes; ii) states control purchase requirements; iii) enable comparison of alternatives needing transmission or not
- ✓ IMAPP Status:
  - ✓Broad interest in FCEM/FCM-C concept, with many details yet to be worked out; this will take time
  - ✓Incorporating all of the states' criteria could lead to a 'Swiss Army Knife' design to accommodate <u>any</u> future state policy; may not work particularly well for any of them
  - ✓In-market vs. out-of-market treatment of revenues cannot be decided *a priori*

IMAPP Objectives

- ✓ **States' Objective 3**: Implement a 'need-based' mechanism in the ISO-NE markets to enable states to retain existing resources for policy purposes.

- ✓ IMAPP Status:
  - ✓A carbon adder in the energy dispatch could likely address revenue challenges for existing desired resources, but is not necessarily need-based nor easily adjustable over time
  - ✓A targeted, contract-based approach to retaining existing resources could be accommodated in a two-tier pricing mechanism with appropriate extension of MOPR to Existing Resources

IMAPP Objectives

- ✓ **Wholesale Suppliers' Objective 1**: Support and accommodate states' policy objectives without bearing the full cost of them through wholesale market price suppression
  - ✓Just as states insist that policy mandates of one state not impose costs on consumers in another state, state policies should not impose undue burdens on investors relying on FERC-jurisdictional markets.
  - ✓Wholesale markets are the basis for building and maintaining reliability infrastructure, and need to be free of distortion from entry and exit driven by non-market/non-economic factors

- ✓ IMAPP Status:
  - ✓NRG's two-tier pricing proposal is the only solution proposed to date that directly addresses this objective

‘Accommodate’ vs. ‘Achieve’

- ✓ There are existing resources with state-backed contracts pursuant to state policy objectives
- ✓ States have existing statutory requirements to secure additional resources to meet policy objectives
- ✓ The ISO-NE markets must *accommodate* these existing resources and laws while maintaining the integrity of price formation and investment incentives
- ✓ The long-term objective should be to obviate the need for future statutes by enabling the markets to *achieve* a low-carbon, sustainable fleet for the future

To the extent states establish policy goals not met through carbon/renewable attributes that can be integrated into the markets, those can be accommodated through two-tier pricing

The near-term issue – FCM Price Formation

- ✓ With full application of mitigation, i.e., all resources offering at a competitive level (green supply curve), the clearing price in this example is **$7.66/kW-mo**, and the cleared quantity is 35,429MW.
  - o The total market cost is $7.66/kW-mo x 35,429MW = **$3,257 million**
- ✓ With 1,000MW of State Policy (SP) Qualified Capacity inserted as price-takers (blue supply curve), the clearing price is **$6.83/kW-mo**, and the cleared quantity is 35,604MW
  - o The total (market) using the blue curve would be $6.83/kW-mo x 35,604MW = **$2,918 million**
  - o This is the price-suppression effect of out-of-market capacity
- ✓ Adjusting the market demand (dotted pink demand curve) leads to similar price suppression. Clearing with the green supply stack, the clearing price would be **$6.83/kW-mo**, and the cleared quantity would be 34,604MW
  - o The total market cost is $6.83/kW-mo x 34,604MW = **$2,838 million**



Source: NRG analysis

The Near-term Challenge

- ✓ States are moving ahead with additional policy-based procurements
- ✓ FCM, and the ISO-NE markets overall, need to maintain the integrity of price formation to support efficient merchant entry and exit
- ✓ NRG's two-tier pricing mechanism:
  - ✓ Enables all state policy resources to access FCM compensation
  - ✓ Maintains marginal price signals for private investment decisions
  - ✓ Does not impose the full cost of state policies on capacity suppliers
- ✓ Two-tier pricing should be pursued even as the region works to develop a market design to *achieve* a low-carbon, sustainable fleet for the future

Questions?