Discussion of Capacity Market Reform Considerations

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Problems with Existing Capacity Market Design

- Poor definition of product.
- Tenuous connection to performance.
- Services required of non-ICAP resources without explicit linkage to compensation method.
  - Obscures value of purchase to buyer.
  - Undermines collective market effectiveness and proper market valuation of generation services.
- All are interrelated.

Explicit Linkage Between Services and Compensation Needed

- **<u>Capacity Resources</u>**
- Physical call option on energy.
- Financial call option on energy.
- Any other restrictions on generation participation in the market not compensated through hourly markets.

- **<u>Non-Capacity Resources</u>**
- No physical call option on energy.
- No financial call option on energy.
- No restrictions on generation participation in market not compensated through hourly markets.

Physical Call Option on Energy

- **Capacity Resources**
- Must offer available generating capability into day ahead market.
- Accepts day ahead operating reserve obligation, if scheduled.
- Can export energy, but only on a recallable basis.
- Planned outages must be approved by ISO-NE to facilitate its managing operable capability levels.

- **Non-Capacity Resources**
- Must offer available generating capability into RT dispatch, however, no limitations on bidding.
- Flexibility to offer a portion of its generation day ahead without incurring an operating reserve obligation.
- Can export capacity as either monthly capacity or hourly non-recallable energy sales.
- ISO notification, but not approval, of planned outages required.

Financial Call Option on Energy

- **<u>Capacity Resources</u>**
- Day ahead bids for energy capped at $1000/MWh.
- Prohibition on rebidding when scheduled day ahead.
- Call option to buyer must be real – energy revenues above $1000/MWh (or lower bilaterally agreed value) should be credited to capacity buyer.

- **<u>Non-Capacity Resources</u>**
- Allowed to bid to higher levels, at least equal to the costs retail customers willing to pay to avoid involuntary curtailment.
- Wider tolerance for mitigation. Where mitigation deemed necessary, there is capacity need and mitigation should not be a substitute for capacity purchases.

An Effective Financial Call Option Requires:

- Higher bid price flexibility for non-capacity resources than allowed for bids of capacity resources.

- Limitations (if any) on non-capacity resource bids must minimally assure that market prices can rise to levels at which demand elasticity can occur.

- The amount by which capacity resource spot energy market proceeds exceed the capacity resource bid cap ($1000/MWh – lower levels can be negotiated bilaterally) need to be credited to the capacity buyer.

Consideration of Other Currently Uncompensated Generator Services.

- **Capacity Resource**
- Limitation on level of economic low limit bids.
- Restriction on frequency of update to start-up and no load bids.
- Limitations on payment of costs for cancelled start.
- Other?

- **Non-Capacity Resource**
- Can bid economic low limit up to economic maximum limit.
- Can update start-up and no load bids daily.
- Payment of start-up bid if cancelled by ISO.
- Removal of any other restrictions on market participation for which generator not explicitly compensated in hourly markets.

Key Features of Proposed Improvements.

- Explicit linkages between compensation mechanisms and supplier obligations adds better definition to capacity product.

- Real financial call option on energy creates meaningful hedge to buyers and allows the market to evaluate supplier performance and location.

  - Buyers can evaluate the availability of resource and can even negotiate performance incentives or LDs. Superior to UCAP methodology.

  - Buyers can evaluate 'deliverability' between their load and resource based on their forecast of LMP differential since that affects the value of the call option to them. Superior to either interconnection based deliverability standards or arbitrary zonal determinations. Does not preclude ISO recommendation/requirement of minimum aggregate purchases or local capacity purchases.

Market-based Performance Rating

- While UCAP improves the connection between availability performance and capacity value, it is arbitrary and pools suppliers to some degree based on its use of averaging. (Unavailability in low LMP hours has same impact as unavailability in high LMP hours.)

- A real financial call option does not require use of arbitrary factors and allows each LSE to evaluate the likelihood that its call option will be available when most needed (i.e., when the option is in the money).

Market-based Deliverability Rating

- Interconnection-based deliverability standards may be reasonable where such an approach has been historically applied, however, it is unworkable in NEPOOL where less severe interconnection requirements have been the standard.

- Determination of zonal requirements may be reasonable in assuring reliability in chronically congested areas, however, if their use is expanded to areas of less chronic congestion, this method becomes more problematic.

- A real financial call option does not require a change in interconnection standards or arbitrary factors. It allows each LSE to evaluate the deliverability of each resource to its points of withdrawal based on the likelihood that its call option will be available when and to the degree needed (i.e., when option is in the money and the degree to which it covers its own energy purchase risk).