ESI
Possible Amendments

New England States Committee on Electricity

NEPOOL Markets Committee

September 4, 2019

Disclaimers –
ISO-NE Design Proposal is Moving Too Quickly

- NESCOE does not have a point of view at this time about ISO-NE's Energy Security Improvements "ESI" proposal and this presentation should not be interpreted as expressing one.
- Because of the fast-tracking of all things energy security, today we provide for ISO-NE's and others' benefit some possible amendments we may present at the September 18, 2019 NEPOOL Markets Committee meeting.
- Concerns, questions and possible positions will emerge with continued dialogue and understanding.
- Today, we appreciate feedback to help us think through the range of questions and possible design solutions that ISO-NE's proposal raises.

The questions and ideas reflected in this presentation should not be viewed as a NESCOE or any individual state position

Further Disclaimers

NESCOE is continuing to assess ISO-NE's stated objectives for ESI

None of the amendments identified in this presentation are intended or should be construed as opining on whether ISO-NE's proposal or the concepts identified in this presentation are adequate or appropriate to advance key energy security objectives

Even with these amendments, analysis suggests that ESI as amended would be unlikely to fully solve the emerging concerns around market power mitigation, but would be a step in the right direction.

ESI: Possible Amendments for Consideration & Feedback

Not a proposal or a position

Emerging Concerns

- NESCOE remains deeply concerned that consumers will be on the hook if the design fails to create competitive outcomes, either through actual withholding or lack of incentive to participate
  - What happens if on the colder days the option offers are not competitive?
  - What disincentive do resources have if the proposal fails to receive offers?
- We have yet to be convinced that the ***increased fuel measures*** assumed in the impact analysis ***will actually occur*** and ***if the proposal will actually and appreciably change resource behavior***
- How likely is it that the proposal will prevent or limit future retirements/RMRs?
  - Understand no one can predict with certainty, but not much discussion on likelihood to date
- We have yet to see the benefit of DA GCR/EIR in the non-winter months
  - Will it create a more efficient outcome than operator actions?
- A "wait-and-see" approach to key design elements and analysis provides insufficient protections for consumers
  - e.g., mechanism to mitigate market power critical

Possible Amendments

1. Create a must offer requirement for resources with a Capacity Supply Obligation
2. Increase the strike price by 25%, with two options
3. Remove EIR for the nine non-winter months
4. Remove RER for the nine non-winter months

At this time we are considering these as one set of potential amendments, not four separate amendments.
We may decide to separate, eliminate, modify these based on today's discussion.

Must Offer Requirement

Must Offer Requirement

- Section III.13.6.1.1.1 of the tariff states that a generator with a CSO *"shall be offered into both the Day-Ahead Energy Market and Real-Time Energy Market at a MW amount equal to or greater than its Capacity Supply Obligation whenever the resource is physically available."*

- This concept would be extended to the ESI products for which a resource is eligible to provide
  - Objective is for the same tariff obligation as DA energy offers

Section III.13.6.1.1.1

- This requirement compels a resource with a CSO to make its energy available to the market.
- Without this tariff provision, a supplier could acquire a CSO, never produce a single MWh of energy and receive capacity payments.
  - The supplier basically could get "something for nothing".

Energy Options

- At the highest level, the ISO's ESI proposal is a sophisticated approach for apportioning all of a resource's ***available MWs (or energy)*** into the wholesale energy market.
- Some MWs will be labeled as ***energy*** to be delivered the following day, while other MWs will be labeled as "options" that *may* result in ***delivery of energy*** the following day.
- ISO-NE August 2019 - *" 'Physical' DA energy sales and DA energy call options have the* ***same financial and physical elements****… Are subject to the* ***same participant obligation*** *to only offer if the seller has the intent and the capability to deliver…. Energy call options* ***are no more, and no less, financial v. physical than the day-ahead forward sale*** *of energy from the same 'physical' resource."*

Energy and Options are Similar

- ISO April PPT Slide 47 - *"Paying for obligations to deliver the output that a **reliable system** requires creates a level playing field for competitors that **deliver energy reliably** through cold-weather conditions"*
- ISO August PPT Slide 12 – *"The jointly optimized day-ahead clearing will determine **the optimal schedule** for all resources (meaning whether to schedule the resource for **energy only, some combination of energy and option awards, option awards only**, or nothing at all) in each hour to maximize social surplus"*

Must Offer Benefits

1. The "must offer" requirement will make it more difficult for suppliers with a CSO to ***physically*** withhold the new ancillary services options from the Day-Ahead Energy Market.
   a) Expanding the must offer requirement to ESI would increase the number of resources offering the new ancillary service options and likely incent suppliers to firm up inventories.
   b) Increased participation will increase the likelihood that the estimated savings to consumers and expected reliability benefits will materialize.
   c) Increased participation will increase competition and increase the likelihood the option prices are competitive.

2. The "must offer" requirement will require suppliers with CSOs to submit option offers, which can then be monitored and evaluated by the IMM and EMM.
   a) Otherwise, the IMM and EMM can only evaluate the voluntary option offers, which may not be a true representation of the costs to provide the new ancillary services.
   b) ISO and IMM would not know, when a resource failed to offer, whether it was unavailable/ineligible or simply chose not to participate; the information is valuable for a full understanding of the system situation at the time.

Must Offer Concerns

- A must-offer requirement could lead additional resources to incur the fixed costs associated with providing it; could raise capacity offer prices and costs (inefficient).
- A must-offer requirement alone does not prevent exercise of market power withholding without an effective reference price.
- NESCOE currently evaluating these concerns

Tariff Redline

- TBD

Increase Strike Price by 25%

Costs with Little Benefit

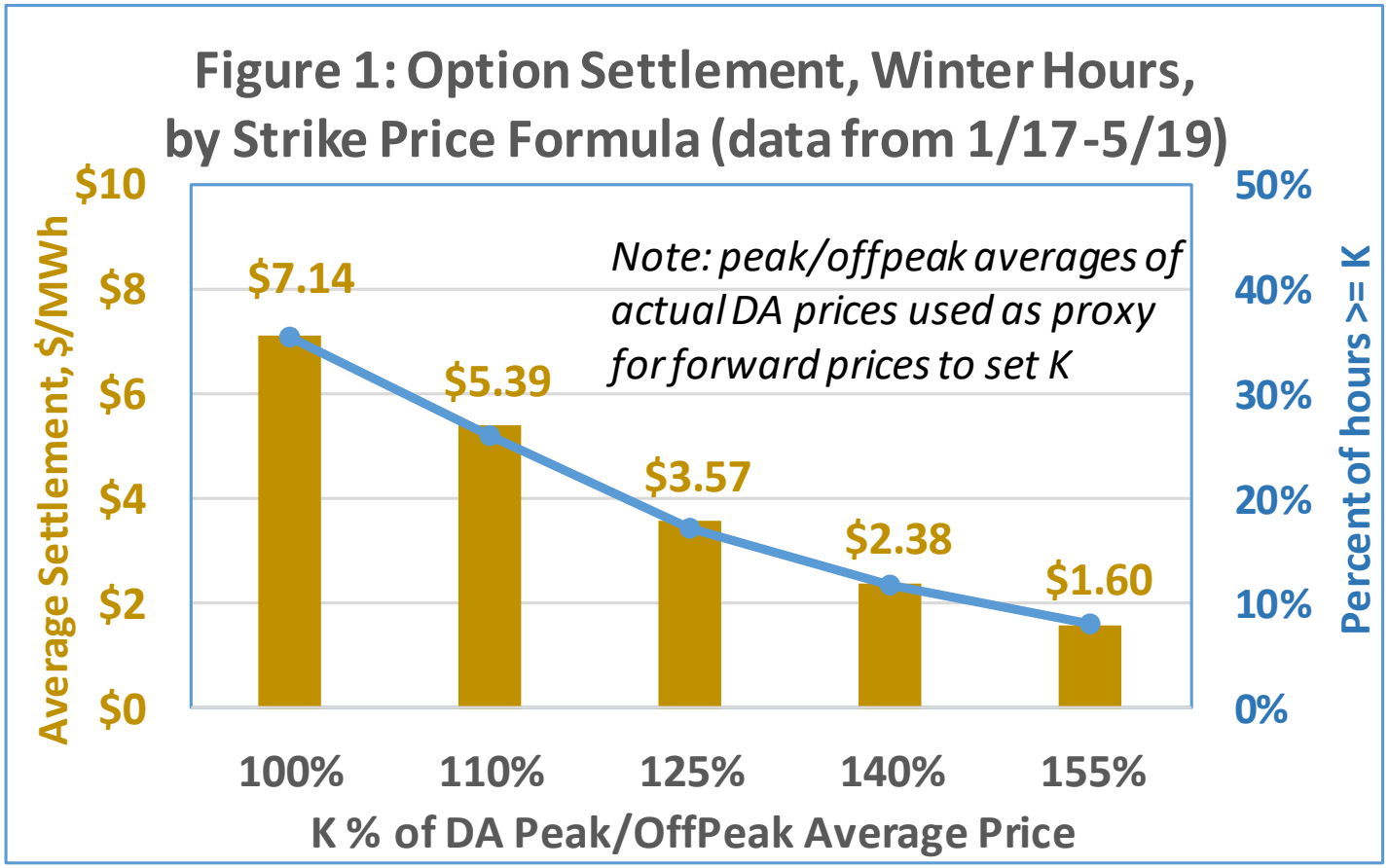
- ***Issue:*** Option will get exercised at times when energy security is not an issue both in the winter and non-winter months and, due to only one average strike price for on-peak/off-peak hours, during many hours of each day
  - This creates option risk for providers
- ***Potential Solution for Discussion:*** Increase strike price by 25%
  - Reduces the frequency of option getting exercised, should lower costs
  - Has minor effect on incentives to cover the call and deliver energy
- This could also increase participation under the ESI proposal
  - Increases likelihood of design being successful

Same as August

Higher Strike Price

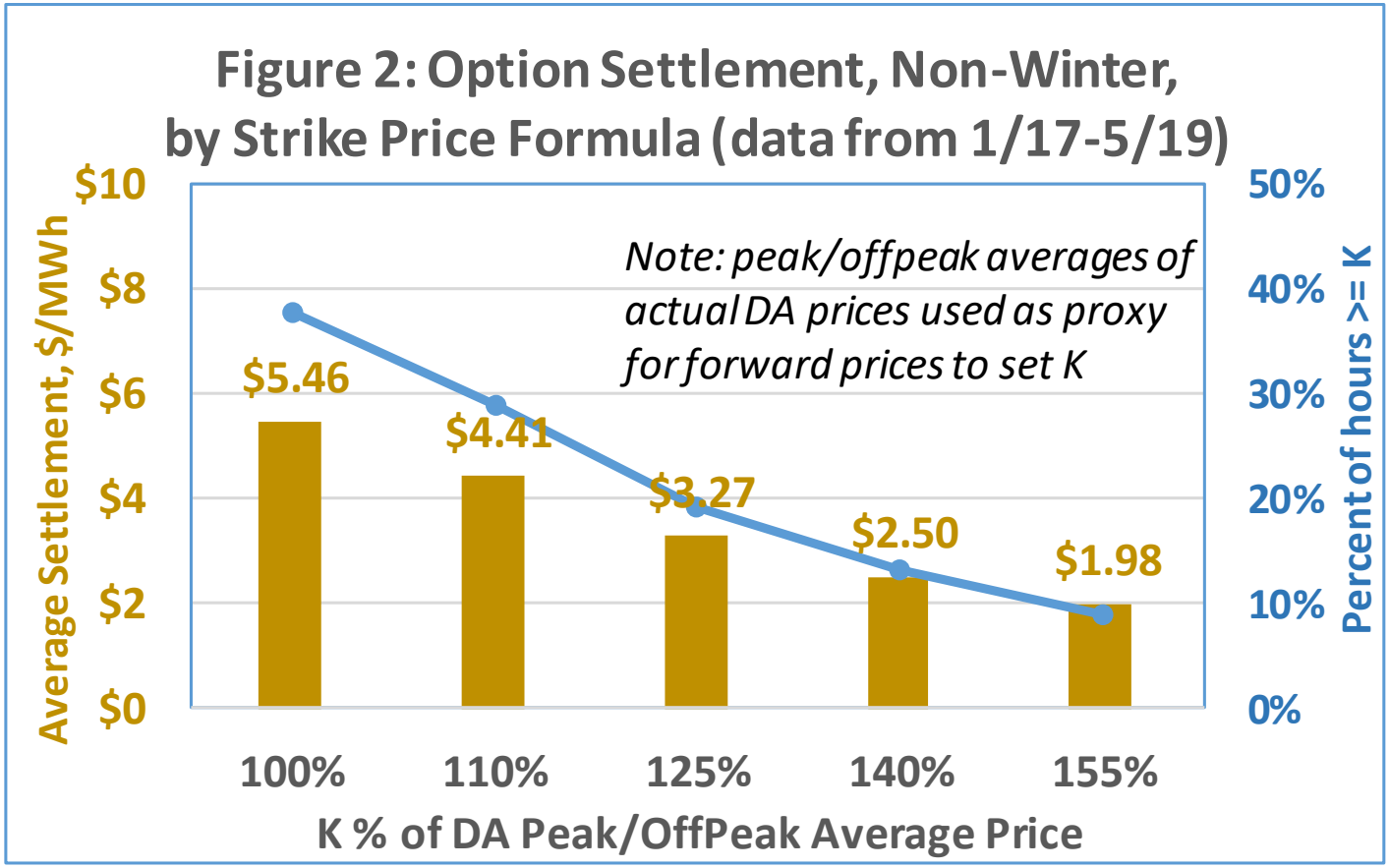
- A higher strike price would shrink the option close out value (RT price – K).
  - Because offers reflect this settlement, a higher strike price would reduce offer prices and clearing prices.
- It would reduce the number of market participants whose marginal cost is greater that the strike price. This may make participation somewhat more attractive to these market participants.
- For sellers whose settlement is not fully hedged by RT operation and add a risk premium to their offers, a higher strike price would reduce such risk premiums, by shrinking the exposure.

Option Settlement - Winter



Increasing the strike price reduces frequency and lowers close out costs

Option Settlement - Summer



Same in the Summer

Why 25%, not 10% or 50%

- Balancing the incentive decrease with potential benefits and consumer savings is subjective
- The reduction in cost/frequency of option strike declines significantly after 25%
- 25% balances consumer savings and still provides incentive when RT prices spike into scarcity hour range

Same as August

Tradeoffs of Higher Strike

- Downside is a somewhat weakened incentive to invest in fuel created by the option.
  - Also dependent on market participants' expectations of RT prices and their expectations regarding how their output impacts RT prices.
- The tradeoff – ***greater participation and lower consumer cost*** with a higher strike price, in ***exchange for somewhat lower incentive impact*** – may be especially attractive in the ***early years*** of ESI implementation, when there is little or no experience of how the proposal will work under various system conditions, and much uncertainty about its possible cost impacts and vulnerability to exercise of market power.

Strike Price – Additional Risk Mitigation

- ISO proposes to base the strike prices on two-day-ahead peak and off-peak forward prices
  - Price expectations at time of the DA market may be very different
  - Not "shaped" to hourly pattern
- A better match between strike prices and DA prices, reducing supplier risk, could be ensured as follows:
  - Initially set the strike prices based on the forward prices, however:
  - If the actual DA energy price is higher than the forward price for any hour, the strike price settlement formula uses the actual DA price.
- This approach guarantees market participants that K is based on a price that is never less than the DA price for each hour.
  - Results in K uncertain at the time of DA market, but would reduce perceived risk and uncertainty while not harming incentives to cover.
- Example (using 125%): Forward price = $40, so initial K is $50; actual DA price is $44, so final K is $55/MWh for the hour.
- Unclear if resources would just bid on known forward price and take the upside.

Option: 25% Phases Out at High Prices

- Optional concept – at high strike prices*, the 25% phases down to zero.
- Example (phases out the 25% between $200 and $300):
  - Forward price below $200/MWh: K = forward x 1.25
  - Forward price over $300/MWh: K = forward x 1.00
  - Forward price between $200 and $300/MWH: K = forward price x (1.00 + .25* ($300-forward)/($300-$200)
- Ensures full incentive from the option when system is under stress.

* Depending on concept on the previous slide, could be the higher of forward or DA price.

Possible Amendments

1. Increase strike price by 25% (multiply by 1.25)
   - K = forward price x 1.25
2. Use actual DA price to set strike price when higher than forward price
   - K = max (forward price, actual DA price) x 1.25
3. Phase out the 25% at high forward prices
   - K = forward price x (1.00 + .25 x (min(1, max(0,(FwdB-forward price)/(FwdB-FwdA)))) where FwdA, FwdB are the lower and upper forward prices between which the 25% phases out.

Tariff Redline

- TBD

No EIR or RER in the “Non-Winter” Months

Winter Only Issue

- Over many months developing its ESI proposal, the ISO-NE has not established that there is a "fuel security" issue in the nine non-winter months
- ISO FERC presentation July 15, 2019:
  - Slide 40 - "Model studies ***winter months***, when the proposed solutions are expected to have largest impact on market and reliability outcomes"
  - Slide 10 - Gas pipelines reaching New England from the West are fully utilized in ***cold weather***
  - Slide 25 - …predominant resources for replacement energy and load-balancing reserves. (are) Gas-only or dual-fuel, and face production ***uncertainty during winter***

- FERC directive focused solely on energy security – price formation can be addressed separately, as necessary and appropriate.
  - ISO FERC presentation July 15, 2019, Slide 2: In July 2018, the Commission directed ISO New England "to develop longer- term market solutions" to the region's energy security challenges

Prevent the "Slow Leak"

- ISO-NE contends option offer prices, clearing prices, and total cost impact should be very low outside of winter
  - Per ISO-NE, option close out should net close to $0 costs for consumers
  - There's no experience with this novel proposal and the non-winter cost may not be so
- Even if low, we remain concerned while it may be low, it will be over 75% of all hours
- Analysis Group - ***As for non-winter periods, the mild winter results generally "provide the most useful information" but differences in non-winter and winter conditions could lead to different impacts.***

Other Concerns

- Cost impact is possible $144M *per quarter*
- While there may be other "reasons" or "benefits" for EIR or RER outside of the winter months, ISO-NE nor NEPOOL have spent sufficient time evaluating those consumer costs and benefits
- Nor has any impact analysis been completed
  - How can consumers, or FERC, have confidence in the program without proper analysis or sufficient stakeholder discussion?
- Any delay to further understand the costs and benefits of this change in the non-winter months will not delay implementation
  - What's the hurry here….

Amendment

- Set RER and EIR quantity to zero from March 1 through November 30 of each calendar year.

Tariff Redline

- TBD

Thank You We Look Forward to Your Feedback

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