POTOMAC ECONOMICS

Memorandum

TO: NEPOOL Markets Committee

FROM: David Patton and Pallas LeeVanSchaick

DATE: March 6, 2024

RE: EMM Comments re the Proposal to Transition the FCM to a Prompt Seasonal Market

As the EMM, we have recommended that ISO-NE transition its Forward Capacity Market (FCM) to a seasonal prompt capacity market that is much better adapted to address pressing reliability challenges in New England. The ISO has already delayed FCA19 for one year and is proposing an additional two-year delay to provide time for it to design and implement a prompt seasonal capacity market. Given the substantial benefits offered by this transition, we support the two-year delay so that the ISO and stakeholders will have time to flesh-out a detailed proposal to implement a prompt seasonal capacity market.

The ISO has worked with the Analysis Group to examine the pros and cons of moving to a prompt seasonal capacity market. The Analysis Group report identified a range of significant benefits, including that the seasonal market would allow for a better implementation of RCA.[1] The time required to implement a prompt market would also provide necessary time to refine the RCA proposal. However, some stakeholders continue to express concerns that a prompt market might lead to inefficient "price formation" in the capacity auctions and more out-of-market retention of capacity for reliability. This memo addresses these particular concerns and discusses the key benefits of transitioning to a prompt seasonal capacity market to meet the emerging reliability needs of the New England region.

A. Benefits of a Prompt Seasonal Capacity Market

The Forward Capacity Market was designed when the chief reliability concern was building new gas-fired generating capacity quickly enough to keep up with rapid load growth. The three-year forward auction was thought to facilitate new investment by providing adequate lead time for an investor to mobilize capital, permit, and build a generator after clearing in the auction. However, experience to date has shown that it does not efficiently facilitate investment because developers receive only one year of guaranteed revenue for resources with much longer economic lives and

[1] See *Capacity Market Alternatives for a Decarbonized Grid: Prompt and Seasonal Markets*, by Analysis Group, January 2024 version ("AG Report"), esp. pages 2-3.

it can create inefficient risk for developers related to the required in-service date.[2] The FCM can also make efficient retirement decisions much more difficult for owners of older resources.

In addition, slowing load growth, the entry of intermittent generation and battery storage, and growing winter fuel supply limitations together create reliability needs and concerns that the FCM cannot effectively address. While New England has sufficient installed capacity, the challenge will be to ensure that the capacity is available to maintain reliability under a wide range of conditions. The capacity market should play a key role in providing incentives for existing generators to arrange for firm gas supply, expand oil tank capacity, and/or increase energy storage duration capability. Even with improvements in capacity accreditation, the timing of the FCM and its lack of seasonal obligations limit its ability to provide efficient incentives.

The failure of the FCM to address the ISO's emerging winter reliability issues is evidenced by the Mystic retention and the creation of the Inventoried Energy Product ("IEP"). The IEP is effectively a supplemental out-of-market payment mechanism to address gaps in the current capacity market. Such out-of-market programs are costly and threaten to undermine the performance and incentives of the ISO's energy, ancillary services, and capacity market. Additionally, having an auction for installed capacity that does not consider whether resources have firm fuel access leads resources without firm fuel to receive inefficiently high capacity payments.

The ISO has been pursuing the Resource Capacity Accreditation ("RCA") project, which would help address winter reliability issues by improving the alignment between the compensation resources receive and the reliability value they provide. The ISO is working towards filing these rules later in 2024 for implementation by FCA 19 for the winter of 2028/29, although delaying FCA 19 and implementing a prompt seasonal by the winter of 2028/29 would help the RCA design in two ways. First, it would allow the ISO more time to work through the details of a more efficient RCA design. Second, RCA rules will perform better in a prompt market because the prompt market allows for more precise estimates of the marginal reliability impact of each technology before the auction.

B. Price Formation in Prompt Capacity Markets

Some stakeholders argue that a prompt capacity auction would lead to greater price volatility and would be more prone to periods of oversupply than a forward capacity auction. They believe that a forward auction facilitates competitive responses to surplus and shortfall conditions because it occurs three years ahead while a prompt auction provides little opportunity for competitive responses because it occurs several months before the capacity commitment period. However, this is generally not true for the reasons discussed below.

[2] See *2022 Assessment of the ISO New England Electricity Markets*, by Potomac Economics, External Market Monitor for ISO-NE, June 2023 ("2022 EMM Annual Report"), esp. pages xii-xiv.

First, the primary factor that provides for price elasticity in the capacity auction is the sloped demand curve rather than the price-sensitivity of supply offers. The sloped demand curve supports efficient price formation by allowing prices to fall as the amount of surplus capacity rises at a rate that reflects the marginal reliability value of the additional capacity. The principal supply-side factor that determines the clearing price is the quantity of existing qualified capacity. Hence, prices will generally change substantially only when supply is changing significantly and cause prices to clear much higher or lower on the demand curve. There is no reason to expect larger year-to-year fluctuations in supply than have occurred under the forward capacity market historically. Therefore, price volatility should not be a substantial concern.

Second, the prompt auction format provides more flexibility to existing suppliers than the forward auction, facilitating price-responsive decision-making. In the FCA, decision-timing is highly regimented. Retirements must be noticed more than 50 months ahead of the CCP, while static delist bids are set three months before the FCA and 43 months before the CCP. In a prompt capacity market, suppliers have more flexibility about the timing of decisions related to retirement, which depend on the deadlines for the generator to notify the ISO that it may retire and for a final retirement decision. Most capacity is sold through bilateral transactions and/or voluntary forward auctions ahead of the prompt auction, which allows suppliers to evaluate whether to retire in a timeframe when there are opportunities for bilateral trading. For older generators, this is likely better suited to the timing of factors driving the decision rather than the rigid timelines of the forward auction, which can compel firms to make these retirement decisions prematurely.

Third, some stakeholders are concerned that capacity prices will be prone to clearing below efficient levels because they claim that going forward costs are largely unavoidable for generators participating in a prompt auction. This is not true. Regardless of whether an auction is conducted 3 years ahead or just a few months ahead, generators will typically consider the fixed cost of operations and maintenance, the need for capital expenditures, and any net revenue offsets. The existing generators with the highest going forward costs are typically ones contemplating capital expenditures that would be recouped over multiple years. Regardless of the auction timing, these decisions depend not only on the outcome of the upcoming auction, but typically also on their price outlook for the subsequent three to five years. The forward auction provides one year of capacity price certainty, but this has limited value when the decision to sell capacity involves a multi-year capital investment. On the other hand, the prompt auction format tends to facilitate bilateral trading which could allow the generator to enter into a multi-year hedging agreement that is better aligned with the recovery period for its capital expenditures.

Fourth, a key component of the cost for some capacity suppliers is the expected value of the PFP obligation, which is largely unaffected by the time between the auction and the capacity commitment period. Since generators that do not accept a CSO can receive PFP credits during reserve shortage events, capacity sellers generally treat this expected payout as a cost when selling capacity. This cost depends on the size and composition of the generation fleet relative to the ICR. This is not likely to differ much between the forward and prompt auction formats, except that generators participating in a prompt capacity market will have better information

regarding expected operating and supply conditions since the auction occurs much closer to the operating timeframe than the forward auction.

Fifth, the forward auction is susceptible to a major problem that undermines price formation, which is the problem of phantom new entry. Of the new generating resource capacity sold in the eight auctions for CCP 2016/17 to 2023/2024, 59 percent failed to build in time to reach commercial operation on time and 29 percent were ultimately cancelled.[3] This has depressed clearing prices in the FCA and sometimes required the ISO to obtain capacity in the reconfiguration auctions. This problem is eliminated under the prompt auction format since generators cannot sell capacity until ready to commence operation.

In summary, the prompt auction format does not lead to greater price volatility or uncertainty than the forward auction format. Both formats are similar in the following key respects:

- Both rely on the sloped demand curve for price elasticity in response to supply and demand shocks; and
- Suppliers decide whether to accept a CSO based on their ability to avoid the same going forward costs and/or PFP obligations.

In addition, the prompt auction format has two key advantages that support stable prices:

- The prompt auction format provides more flexibility to suppliers than the forward auction, facilitating price-responsive decision-making; and
- The prompt auction is not susceptible to phantom new entry, which has led to significant price suppression in some FCAs.

For these reasons, the prompt auction format is likely to result in better price formation than the forward auction format.

C. Impact of Auction Format on Out-of-Market Retention of Capacity

Since the creation of centralized capacity markets, a key challenge has been to reduce out-of-market retention for reliability. The most common reason resources are retained out-of-market is that the market does not fully reflect the reliability need the resource is satisfying. For example, ISO New England has from time to time retained resources out-of-market for local reliability needs not reflected in the capacity zone configuration. Likewise, the Mystic generators and Everett Marine Terminal are currently being retained out-of-market for their fuel-secure characteristics, which are not yet valued in the capacity market.[4]

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[3] See 2022 EMM Annual Report, Section V.B.

[4] Mystic 8 & 9 units were retained for local transmission security in FCA 12 for CCP 2021/22, and the units were retained along with the Everett Marine Terminal for fuel security needs in FCA 13 for CCP 2022/23. See *2019 Regional System Plan*, ISO New England, October 31, 2019, pages 56-58.

Some stakeholders reason that prompt capacity markets are inherently more likely to retain capacity out-of-market for reliability because forward capacity markets provide more time to develop a regulated transmission solution when the retirement of a generating facility would result in a reliability criteria violation. However, this ignores other key factors that determine whether capacity is retained out-of-market, including factors that can lead to more uneconomic retention under the forward auction format.

First, it has become apparent from the retention of the Mystic and Everett Marine Terminal facilities and the progress of the RCA project that when a market enhancement is needed to address a reliability need, it is more difficult to address the need quickly in the context of a forward capacity market. The NYISO's prompt capacity market will allow it to implement marginal capacity accreditation rules much sooner than ISO-NE. The NYISO will introduce marginal accreditation in the 2024/25 Capability Year, and the NYISO it is finalizing a proposal for implementation in the 2025/26 Capability Year to distinguish among the firm gas, non-firm gas, and oil-fired generators for accreditation purposes.[5]

Second, when a capacity market (regardless of whether it is a prompt or forward market) is designed to set prices efficiently at each location and all reliability needs are reflected in its requirements and resource accreditation, the need to retain resources out-of-market will be very limited. Additionally, when a reliability need is extremely localized, transmission solutions can be evaluated, selected, and constructed more quickly. This reduces the likelihood of a temporary need to retain capacity out-of-market. Hence, if the capacity market compensates resources efficiently, retirement-driven reliability needs are usually so localized that a transmission solution can be completed in time to allow the generator to retire rather than be retained out-of-market or to be retained for a relatively short duration.

1. Example of Potential Retention of a Retiring Unit: Forward v. Prompt Market Timing

While the forward capacity market may seem to provide additional time to consider alternatives to retaining a resource out-of-market, there are circumstances when the prompt market provides more time for evaluation, reducing the likelihood of out-of-market retention.

For example, suppose an existing generator is considering whether to retire after CCP 3/4 (i.e., the Capacity Commitment Period from June of year 3 to May of year 4). In a forward market, the generator may submit:

- A retirement delist bid in the FCA for CCP 5/6 in April of year 1 – If this delist bid is rejected for reliability, the generator will be retained out-of-market in CCP 5/6.

After the attempt to delist, the ISO may evaluate reliability needs and consider potential reliability solutions in consultation with stakeholders, but these will not be determined before the

[5] See *Modeling Improvements for Capacity Accreditation*, presented to the NYISO ICAP Working Group on March 4, 2024. Rules to distinguish between firm and non-firm fuel resources are scheduled for a stakeholder vote on March 27 and filing to FERC in 2024-Q2.

FCA for CCP 5/6.[6,7] Since the retirement delist bid is submitted 50 months before CCP 5/6, it provides a long period to evaluate, select, and build transmission alternatives, but this is only after the unit has been retained out-of-market for CCP 5/6.

In contrast, consider this scenario would play out in a prompt capacity market with a 12-month retirement notification requirement and an expedited process for evaluating reliability needs and solutions:

- Generator seeking to retire in CCP 5/6 submits a retirement notice in May of year 4 – If the reliability need is very localized, the ISO performs an expedited need assessment in 1-3 months, triggering a review of solutions on a compressed schedule and leaving 3-5 months for construction before CPP 5/6.[8]

If construction can be completed in three to five months, the generator is able to retire without any period of out-of-market retention in the prompt market scenario. If construction takes up to 15 months, the generator is retained for one year (CCP 5/6), the same duration as the forward market. The prompt market would lead to a longer period of uneconomic retention only if the transmission solution was relatively large and took more than 18 months to build, which is unlikely given the state of the transmission system and very low levels of congestion in New England. Hence, while there are circumstances when advance timing of the FCA could help shorten the period of an out-of-market retention, the prompt market allows for a longer period between the retirement notice and the process to evaluate solutions, which could help avoid or limit the duration of out-of-market retention.

2. New York ISO Prompt Capacity Market Experience

Some stakeholders have noted that New York has had several generators retained out-of-market since 2012 and attributed these to the NYISO's prompt capacity market. However, the auction lead time had very little to do with the out-of-market retention of these generators. As described below, the basis for the retention of each of these generators was that they each provided significant value that was not compensated in the NYISO markets, including: having zero-carbon emission attributes, providing congestion relief, and/or satisfying local reliability needs.[9] In

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6 ISO Tariff Section II, Attachment K, Sections 4.1 and 4.2.

7 AG Report, Section III.B.4.a.

8 This assumes ISO New England's tariff could be modified to conduct the need assessments with fewer opportunities for stakeholder input before the study is complete. NYISO has a 12-month notification requirement and a need assessment process that is shorter, requires less collaboration with stakeholders, and allows for the NYISO to move more quickly for a "Immediate Reliability Need" as discussed in NYISO OATT Section 38.

9 In addition, the NYISO recently determined that if the air permits of the Narrows GTs and Gowanus GT Barges 2 & 3 are allowed to expire after April 2025, it would result in reliability needs on a portion of the local transmission owner's 138 kV system and for 345 kV circuits into the New York City zone. Consequently, the New York Department of Environmental Conservation ("DEC") can delay the expiration for the air permit for up to 48 months. If the Narrows GTs and Gowanus Barges 2 & 3 continue in operation after April 2025, the

addition, the procedures used at the time for evaluating whether to retain capacity were not optimal for minimizing the quantity and duration of out-of-market retention. Hence, the timing of the auction did not play a significant role in the out-of-market retention of these resources.

Nuclear RSSA and ZECs

Starting in January 2015, the New York Public Service Commission ("PSC") retained the 582 MW Ginna nuclear facility under a Reliability Support Services Agreement ("RSSA") for local transmission security needs primarily on the 115 kV system. The PSC retained the plant even though its owner had not submitted a formal retirement notice, noting the potential "adverse impact on the local community" if the plant was allowed to retire.[10] In April 2017, the Ginna facility transitioned from the RSSA to receiving Zero Emission Credit ("ZEC") payments, which "provide revenues to eligible nuclear facilities for their zero-carbon environmental attributes." At the same time, the PSC began to retain an additional 2.8 GW at the Fitzpatrick and Nine Mile nuclear facilities with ZECs.[11] All three facilities are entitled to receive ZECs through at least 2029.

Cayuga & Dunkirk RSSAs

The PSC initially retained the Cayuga and Dunkirk generators under RSSAs for 115 kV transmission security planning criteria in January 2013 and June 2013.[12] As the NYISO Market Monitoring Unit, we stated that:

> The large number of unsatisfied reliability needs and the widespread use of cost-of service agreements are both strong indications that the competitive markets are not providing adequate incentives for competitive new entry and/or the maintenance of existing resources on the 115kV system in Zones A through F. The principal reason is that transmission congestion on the 115kV system is managed exclusively with out-of-merit commitment and dispatch, rather than by incorporating the constraints in the NYISO's day-ahead and real-time markets.
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> Over the last 12 months, 115kV congestion was managed using out-of-merit dispatch of Dunkirk and/or Cayuga units in nearly 700 hours. Hence, the NYISO wholesale market

units are not expected to receive out-of-market compensation given that they were never expected to retire for economic reasons.

[10] *Order Directing Negotiation of a Reliability Support Service Agreement and Making Related Findings*, State of New York Public Service Commission, Case 14-E-0270, dated November 14, 2014. Numerous comments were received from federal, state, and county government officials highlighting the importance of the plant to the local community, environment, diversity, etc. (see pages 12-14) The order stated: "As the public comments establish, the Ginna facility and its employees are the linchpin of the economic health of the local Wayne County community, and its economic benefits are felt throughout the Rochester region." (see page 23)

[11] *Order Adopting a Clean Energy Standard*, State of New York Public Service Commission, Case 15-E-0302, dated August 1, 2016.

[12] See PSC Cases 12-E-0270 and 12-E-0136.

> currently provides no market incentives for resources that contribute to satisfying the reliability needs of the 115kV system in up-state New York.[13]

In 2018, the NYISO began to secure 115 kV transmission facilities in western and central New York through the day-ahead and real-time markets, but the Cayuga and Dunkirk units were significantly under-compensated before this for providing congestion relief.

The PSC asserted jurisdiction over local reliability issues when Cayuga and Dunkirk submitted their notices. Under the PSC's process, the local transmission owner was responsible for evaluating needs, conducting a competitive RFP process, and contracting with solution-providers, while the NYISO had a supporting role. The transmission upgrades needed to replace Cayuga were not approved until 23 months after its original notice, and they were not completed for another 35 months in April 2017. Nonetheless, the Cayuga facility continued to operate until just before the New York DEC implemented a policy of shutting down all coal-fired generation by 2020. The PSC's process moved very slowly partly because it did not entrust the process to an independent entity such as the NYISO, and it did not have provisions to discourage "toggling" (which is where a wholesale generator uses its pivotal position for reliability to move into an out-of-market contract before continuing to operate as a wholesale generator after it is no longer pivotal).

In addition, the PSC may have retained unnecessarily large quantities of generating capacity for excessive periods. As FERC stated in a related order:

> Unlike the RSSA contracts discussed in the original Complaint that procure adequate capacity to address short-term reliability needs, the Dunkirk repowering agreement appears to procure more capacity than is needed for short-term reliability, and for a much longer term. We are concerned that if the additional capacity created by the repowering agreement above the amount needed for short-term reliability is allowed to offer into the NYISO capacity market at prices below the cost of repowering, such capacity might deter new entry or displace less-costly existing capacity in NYCA. As a result, capacity market prices could be artificially suppressed.[14]

Ultimately, FERC asserted jurisdiction over rates for generators retained for local reliability in New York and approved tariff provisions that set forth the responsibilities of the NYISO and local transmission owner for expeditiously evaluating reliability needs after a generator submits a retirement notice, selecting reliability solutions, and determining whether to retain generators out-of-market.

Conclusions from New York

A few conclusions can be drawn from these cases. First, out-of-market retention has resulted principally because of: a) failures of the wholesale market to compensate resources that satisfy

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13 *Market Monitoring Unit Review of the NYISO's 2014 RNA*, dated August 13, 2014.

14 *Order Denying Complaint, Independent Power Producers of New York, Inc. v. New York Independent System Operator, Inc.*, Docket No. EL13-62-000, Issued March 19, 2015, P 69.

local congestion management and other local reliability needs of the system, and b) the desire to retain resources for public policy reasons. Second, these factors would likely have caused each of these units to be retained out-of-market under a forward capacity market construct as well.

Third, the duration of the out-of-market compensation has depended primarily on the preferences and decision-making timeframes of the PSC rather than the amount of time that would have been necessary for the NYISO to evaluate reliability needs and select and construct solutions. Ultimately, the prompt auction format and retirement notification process have been relatively minor contributory factors in New York's retention of resources out-of-market. Accordingly, it is misguided to think that ISO New England can avoid or even reduce future out-of-market retention of capacity by preserving its forward capacity market.

D. Conclusions

A prompt capacity market is a superior mechanism for satisfying the planning requirements of New England, especially as it undergoes major changes in resource mix and factors driving reliability risks. In particular we find that the prompt auction format:

- Is likely to result in better price formation than the forward auction format because:
  a) it provides more flexibility to suppliers than the forward auction, facilitating price-responsive decision-making; and
  b) the prompt auction is not susceptible to phantom new entry, which has led to significant price suppression in some FCAs.
- Should facilitate more efficient investment decisions by eliminating unnecessary entry timing risks and better motivating shorter lead-time investments;
- Allows for more efficient retirement decisions be providing the flexibility to shorten the retirement notice deadline to be better aligned with the factors that generally motivate resource retirements;
- Allows for more accurate resource accreditation based on the current portfolio of generation and suppliers' fuel procurement decisions, which ultimately improves the incentives governing these decisions.
- Will not likely increase the likelihood or frequency of out-of-market retention of resources. If the capacity market compensates resources efficiently, inefficient retirements should be avoided and localized needs created by efficient retirements can typically be addressed by a transmission solution in a timely manner. Consequently, there is no reason to expect out-of-market retention to be more prevalent under the prompt capacity market than under the forward market.

For the reasons discussed in this memo, we urge stakeholders to support the ISO's proposal to further delay FCA 19 to provide additional time to transition to a prompt seasonal capacity market and refine the Resource Capacity Accreditation reform proposals before CCP 2028/29.

DBP and PLVS