



Memorandum

TO: Todd Schatzski, Paul Hibbard, Vinh Le, David Allen, Ethan Avallone

FROM: Pallas LeeVanSchaick

DATE: October 13, 2017

RE: MMU comments on first draft of Analysis Group Report on *Alternatives Related to Capacity Market Resource Performance*

The wholesale markets were created to provide competitive market incentives that motivate and reward good performance. We support the NYISO's efforts to refine its market rules to enhance the incentives of suppliers to perform reliably and be available to help the ISO maintain reliability at the lowest cost.

The Analysis Group's report *Alternatives Related to Capacity Market Resource Performance* provides a useful survey of market designs that have been proposed or tested in other jurisdictions to improve the incentives for good performance by suppliers. These will facilitate stakeholder discussions about areas for potential improvement in the NYISO market rules.

This document provides the comments of the Market Monitoring Unit on the Analysis Group report, focusing on the concepts listed in Table 3.

A. Capacity Market Category

1. Critical period performance incentive (CPPI)

We do not recommend AG investigate this concept further. Essentially, this concept amounts to an increase in the operating reserve demand curves, except that it bundles the forward sale of energy and reserves during reserve shortages with the sale of capacity. If AG and the NYISO believe that the operating reserve demand curves are not sufficiently high to motivate good performance, it would be better to simply raise these levels rather than adopt a capacity performance incentive for several reasons. First, CPPI is poorly suited to a monthly capacity market, since the expected value of the bundled performance incentive could far exceed the clearing price of capacity in some months, creating new types of credit risk for the NYISO. While these could be resolved through market rule changes, these would require significant effort. Second, CPPI creates incentives for self-scheduling that can diminish the performance of the day-ahead market as a mechanism for coordinating efficient commitment decisions. Third, the current planning requirements significantly over-value the VOLL relative to any reasonable estimate of the true VOLL, which leads to inefficiently high levels of capacity investment under

the current market. CPPI compounds this inefficiency by shifting a portion of the capacity market compensation from units based on day-ahead availability to real-time availability during reserve shortages, leading some long lead time generators to start-up unnecessarily to garner more CPPI compensation.

2. Tailored availability mechanism

We agree that this is a promising area for further consideration. The NYISO capacity market uses the EFORD construct to provide incentives for availability, but the EFORD formulation treats all hours as equivalent regardless of conditions. Consequently, units that have long minimum run times and minimum down times tend to have better EFORDs than units of equivalent reliability that have short run times. For example, suppose an expensive generator is economic to run for one week per year and has a 10 percent probability of having an outage lasting 48 hours. If the generator has long minimum run times and minimum down times, it will be held on overnight, resulting in an EFORD of approximately 18 percent, but if the generator runs for 6 hours per day, it will have an EFORD of approximately 46 percent. This bias in favor of long lead time units would be reduced if the EFORD formula excluded or reduced the weight of low-demand or off-peak hours. To illustrate, if the EFORD calculation was based on 8 hours per day (e.g., 11:00 to 19:00), the short run time generator's EFORD would fall from 46 percent to 22 percent. We believe this would more reasonably reflect the reliability of the generator and reduce the disadvantage for short-run time units.

3. Separate winter fuel purchase

We do not support the use of a fuel procurement mechanism like ISO-NE's Winter Reliability Program since it discriminates in favor of certain technologies, thereby distorting incentives for investment in fuel secure resources. To the extent that the NYISO may have seasonal fuel security planning needs that are not represented in its capacity market, it would be beneficial for the NYISO to clearly define the needs and for AG to investigate concepts for a non-discriminatory technology-neutral market that procures resources to satisfy such needs.

B. Energy/Reserves Markets Category

1. Increase energy price cap and payment limit

We do not recommend AG investigate this concept further. There are very few circumstances when resources have short-run marginal costs that exceed the current offer cap, so under workably competitive market conditions this would have little impact on performance incentives. NYISO has no price caps, nor should it adopt one.

2. Increase reserve quantities

In general, if the NYISO's planning and operating criteria require additional reserves that are not reflected in the current market requirements, we agree that the reserve requirements should be increased. We are not aware of any such need to increase the current operating requirements.

However, we have found local areas such as New York City and sub zonal load pockets where operating reserves are needed to satisfy operating reliability criteria.^{1,2} Reflecting these reserve requirements in the day-ahead and real-time markets would provide better incentives to build and maintain assets in areas that provide local benefits. On a related note, we have found that there is a wide variation in the performance of off-line reserve providers in starting-up after receiving an instruction. For example, one 20 MW ten-minute GT may produce an average of 17 MW ten minutes after start-up while another 20 MW unit may produce an average of 5 MW. However, the NYISO provides the same payments to both units for operating reserves. We recommend the NYISO create rules that would compensate units in accordance with their expected performance if they were started up.³

3. Increase reserve pricing

Over the last decade, the NYISO has had relatively high operating reserve demand curves and transmission demand curves relative to the neighboring areas in ISO-NE and PJM. Consequently, NYISO has benefited from high levels of imports during summer peak demand conditions. However, both ISO-NE and PJM will be implementing performance incentive provisions that could eventually compensate resources more than \$6,000/MWh for energy or operating reserves during a reserve shortage. We expect this will greatly reduce the incentives for non-ICAP resources to import to NYISO during peak summer conditions in the future. Thus, we recommend that AG consider how the market rule changes in PJM and ISO-NE will affect interchange under high load conditions and whether it may be beneficial to increase the NYISO's operating reserve demand curves to keep up with neighboring markets.

4. External resource energy offer requirements

It is important to maintain a distinction between capacity (i.e., the availability of a resource to provide energy) and energy. This concept would seem to impose burdens on capacity importers that might require them to import when it would not be economic to do so. If the NYISO is concerned that some capacity importers are not truly available in real-time, this should be addressed with a process that ensures that each capacity importer is available in a way that is roughly equivalent to the requirement for an internal generator. This may include requirements to demonstrate that transmission capability has been obtained, that the unit can respond to an SRE, etc. Notwithstanding, ICAP importers that are committed through an SRE may have an opportunity and incentive to inflate their offers above competitive levels. Thus, we recommend that AG consider whether a market power mitigation measure should be adopted to ensure that an external capacity supplier is not able to inflate its offer above competitive levels.

C. Eligibility/Comparability Requirements Category

1. Fuel Assurance, including Dual-fuel capability

¹ Reliability commitments occur routinely for local N-1-1 reliability criteria.

² Some reserves are counted towards satisfying N-1 transmission security criteria but receive no compensation. See the 2016 State of the Market Report, Recommendation #2016-1.

³ See the 2016 State of the Market Report, Recommendation #2016-2.

We do not recommend AG investigate this concept further. Dual-fuel requirement for new builds would be inefficient to the extent that it (a) may lead to inefficiently high levels of dual-fuel capacity and (b) may preclude efficient alternatives such as a gas-only generator with a firm gas contract or gas supply from a relatively unconstrained pipeline. Furthermore, since such a requirement would likely be applied to new generators but not old ones, it could delay the retirement of existing gas-only generators by reducing the profitability of having dual-fuel capability and/or increasing cost barriers to new entry.

2. 24-hour notice requirement

We agree that this is a promising area for further consideration. Capacity markets are generally designed to ensure that resources will be available to the ISO during the day-ahead commitment time frame before critical periods. This allows the ISO to ensure sufficient resources will be available the next day. However, some large older units take much longer than 24 hours to start up from initial notification, so a 24-hour availability requirement would require them to incur significant additional costs, including additional staffing costs and/or fuel costs to keep the unit in a “warm” state. It would be inefficient to require such measures for every resource 365 days per year, but it may be cost-effective to require such measures during certain critical high load periods (e.g., when peak load is forecasted to exceed a high level such as 28 to 30 GW).

3. Outage scheduling requirements

In principle, we agree with the statement in Table 3 that changes in this area “May not be worth the effort considering that NYISO can reject outage scheduling requests that would cause reliability risks.” However, if AG identifies any gaps in the current process that prevent it from rejecting outages that would cause reliability risks, it would be useful to point them out.

4. External Resources Performance

We agree that this is a promising area for further consideration. Like internal resources, external resources should be expected to be available in the ordinary day-ahead scheduling processes, including the day-ahead market and SRE process. However, the NYISO may need to make some changes to the SRE process timing to line-up with the scheduling procedures of neighboring markets. However, ICAP importers that are committed through an SRE may have an opportunity and incentive to inflate their offers above competitive levels. Thus, we recommend that AG consider whether a market power mitigation measure should be adopted to ensure that an external capacity supplier is not able to inflate its offer above competitive levels.

Feel to contact us with any questions.