TC Ravenswood, LLC (Ravenswood) submits the following comments in *support* of continued discussions associated with a forward procurement capacity market structure in New York. Ravenswood thinks the next logical step in the development of competitive markets is to add a forward procurement capacity market to the existing spot (balancing) market design. Ravenswood believes that in order for investments in new resources as well as existing resources to be made in an economic and competitive manner, investments in new and existing facilities need to be able to compete against each other in a manner where all their costs are represented and transparent, and decisions made in a coordinated fashion. A large risk driver associated with investment in generation is the lack of coordination in the investment decisions. There is a natural tendency for developers not to inform competitors (or the market place) of their intentions to invest, which could result in simultaneous entry. This in turn can result in a "boom-bust" cycle and inefficient outcomes. A forward procurement mechanism can be the vehicle used to assure the appropriate amount of capacity is procured based on forecasted needs. The transparent coordination of investment decisions promotes efficient entry and exit without the need for a command and control planning process.[1] That is the choice that New York needs to make; will competitive markets determine entry and exit or will centralized planning make those decisions.

It's hard to understand how the competitive market will be given the necessary time and information to provide the solutions necessary for future reliability and resource adequacy needs in the state without a more forward looking mechanism in place. A forward capacity market (FCM) is what the restructured competitive markets in PJM and ISO-NE have implemented and both moved ahead well after the existence of New York's spot Demand Curve auction. The IESO in Ontario, Canada is also in the process of designing a forward capacity market, this is taking place in spite of the fact most of the generation throughout the province is under contact, and not reliant on capacity market revenues. This is significant because PJM, ISO-NE, and IESO chose a FCM design (with balancing and reconfiguration mechanisms) even though they could have implemented just a spot auction construct. Notwithstanding statements and analysis that claim the New York spot market auction is "working reasonably well", efficient entry and the retention of existing resources needed for reliability are not being achieved without continual out-of-market interventions.

We have heard throughout our stakeholder discussions concerning the topic of FCMs and our neighbors that they are full of problems and the FCMs have not been the elixir the markets were hoping for. However, assessments performed by an independent, nationally renowned consultant, The Brattle Group, found otherwise. A Brattle Group assessment performed in August 2011 covering a period of 2007/2008 thru 2014/2015 found, among other things, "Stakeholders have raised a number of key concerns. We find, however, that several major criticisms of RPM are contradicted by the evidence

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[1] Cramton, P., and Stoft, S., 2006. http://www.cramton.umd.edu/papers2005-2009/cramton-stoft-market-design-for-resource-adequacy.pdf

available to date—most notably the arguments that RPM prices are too high, that RPM does not support investment in new generation of the right types in the right places, or that RPM cannot maintain reliability in the face of environmental retirements."[2]

In the context of New York's continued regulatory push for renewable resources, primarily wind and solar, and especially given the current regulatory initiative Reforming the Energy Vision (REV), the risks conventional generating resources face in having opportunity to recover their fixed costs are increasing and not adequately accounted for in the current spot market. The proliferation of renewables as well as resources at the distribution level, renewable or not, will have significant impacts on scarcity hours, which are the hours most relevant to conventional generators in terms of recovering large parts of their fixed costs. Going forward New York will need to focus more on the "missing money" problem to ensure resource adequacy regardless of recent enhancements to its energy markets aimed at decreasing the reliance capacity markets. As argued by professors Cramton and Ockenfelds [2011]: "...renewables are paid a subsidy for the electricity provided, which is independent of the electricity price. A major economic effect on conventional, market price-driven generation is that residual demand and thus 'normal' price levels decrease, and that price volatility increases. At the same time, however, conventional capacity must exit the market at a much slower rate than renewables enter, because sometimes the sun does not shine and the wind does not blow. As a result, the degree of capacity utilization of conventional generation is significantly reduced. Taken together, all these effects imply that the 'missing money' problem is becoming more severe as the renewables' share grows." A forward procurement mechanism will enhance coordination between state mandated initiatives, and the market realities associated with maintaining resource adequacy.[3]

Although Ravenswood thinks an FCM is the prudent course of action for New York, it does not presuppose what such a forward market should look like at this point, nor does it think an FCM supplants the need for a spot/balancing market. Both a forward and spot/balancing market are required. In addition, Ravenswood is aware that there are issues that need to be resolved including but not limited to market power and short term resource participation but that does not mean an FCM should not be developed. All it means is that the issues need to be addressed. Issues existed with the current spot capacity market design yet it was implemented. Issues continue to exist in the current New York (NY) capacity market design and a properly designed FCM would solve some of them, including the need for continual out-of-market intervention.

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[2] The Brattle Group. *Second Performance Assessment of PJM's Reliability Pricing.* http://www.pjm.com/markets-and-operations/rpm.aspx/20110826-brattle-report-second-performance-assessment-of-pjm-reliability-pricing-model.pdf

[3] Cramton, P., and Ockenfelds, A., 2011. http://cramton.umd.edu/papers2010-2014/cramton-ockenfelds-economics-and-design-of-capacity-markets.pdf

Failure to move toward an FCM will result in continued and likely increased out-of-market state intervention into the wholesale markets and a continued move back to centralized planning and away from competitive market solutions to future needs.

What should an FCM in NY strive to achieve (not meant to be an exhaustive list):

1. Forward price transparency, and coordinated investment decisions
2. Increased competition where new and existing resources compete for the same needs
3. Efficient entry/exit of resources
4. Resolve natural Seams Issues with neighboring control areas already operating FCM's
5. Build on lessons learned in PJM and ISO-NE on what has worked and what hasn't
6. Limit impacts associated with RMR contracts

Comments on the Analysis Group Report (AG Report):

The AG Report states ". . . New York's capacity market has worked reasonably well in ensuring power system reliability and market efficiency, why "fix" it?" This observation is overly simplistic and does not take into account the circumstances that have existed or address the needs of a competitive capacity market where entry and exit can be very lumpy.

1. New York has historically enjoyed a surplus of capacity in most regions, and therefore the current market structure has had few "tests" in terms of new entry coming into the market when a need actually materializes. This is exacerbated by the state's propensity to intervene with uneconomic out-of-market subsidies prior to a need arising or when a need arises.[4] The need for uneconomic out-of-market intervention indicates the existing competitive market design is not providing sufficient signals for developers to invest. Moreover, the uneconomic out-of-market intervention exacerbates the market flaw even more by suppressing prices such that price signals never reach a level that justifies investments in new capacity or maintaining existing capacity. Accordingly, it is overly simplistic to attribute resource adequacy to the existing capacity market working reasonable well, when in fact it has been uneconomic out-of-market subsidies and intervention that have propped up reliability not competitive markets.

[4] FERC's February 19, 2015 Order (Dockets ER12-2237-002, ER13-405-000 and EL15-37) shifting Reliability Must Run (RMR) responsibility to the NYISO does not change the uneconomic nature of the contracts nor the shortcomings in the market of not sending the proper price signals.

2. In areas where capacity was/is needed (i.e., Zone J) it has happened, with only one exception in the last 10 years, via PPA's from NYPA or Consolidated Edison of NY. Neither market prices nor market confidence (in terms of NYS intervention) have been sufficient to incent new build based on market signals/conditions. Instead, when some parties with either direct and indirect interests in the market, whom also possess significant market power, deem prices are too high or that prices could go too high, contracts are issued and new capacity is uneconomically contracted into the market thereby further eroding developers confidence to put money at risk that isn't supported by Power Purchase Agreements (PPAs). This couldn't be more clearly illustrated than by AG's own Table 2: "Selected Recent Resource Changes", [pg. 12 AG Report "NYISO Capacity Market"].

3. Significant resource turnover could be experienced in the next decade. According to the NYISO's Power Trends report in 2014, "Nearly 60 percent of the generating capacity in New York State is at least 30 years old. Steam turbines fueled by natural gas and/or oil have an average age of more than 40 years, while combined cycle units fueled by natural gas have an average age of little more than a decade." (Power Tends 2014). While a spot/balancing capacity market structure that is only short term may have been deemed acceptable in the past to ensure reliability, it will not by itself support the investments needed in existing and new resources to meet future reliability needs. A longer lead market with transparent price signals is needed to avert a return to central planning with only regulated solutions being chosen by NY in concert with investor owned utilities and ratepayers taking the risk.

One of the most paralyzing forces that deters private investment in any market, and the New York Energy/Capacity Markets are no exception, is the fear of government intervention (e.g., NYPA & ConEd PPA's authorized by the NYPSC), sweeping regulatory changes (e.g., REV), or state mandates (e.g., Energy Highway Initiative). These government interventions eliminate economic opportunities that investors rely on thereby imposing an untenable risk. These unnecessary risks make coherent, long-term investment decisions that are intended to be made based on sound market fundamentals very difficult if not impossible. AG makes the observation that, "[u]nder a forward market, there is a three-year lag between the initial procurement and the delivery year, meaning there is a significant lag between any rule changes designed to affect reliability/market inefficiencies and the initial period when those rules go into effect. This inefficiency would be expected to increase costs in nearly all circumstances." [pg. ES-3 AG Report "NYISO Capacity Market"]. However, any structure that discourages unnecessary rule changes or encourages less volatility

associated with major market rule changes is a benefit to the market, not a cost. Increasing confidence within the investor community that "overnight" legislation or government intervention will not be used as a lever by policy makers and regulators to thwart market opportunities would promote investment and potentially lower financing costs. The benefits from lower risk of rules changes would outweigh any "costs" due to a lag in implementing future efficiencies.

A major deficiency in the study is an omission of costs to consumers and markets associated with uneconomic out-of-market government intervention and government intervention in general. Reliability-must-run (RMR) contracts (RSSAs in NY) due to a lack of market-based alternatives available to solve reliability issues as they arise have a cost that is borne by consumers. A short term spot capacity market almost guarantees these types of contractual arrangements going forward due to the inability of market participants to respond to short term and intermittent signals. This was apparently one of the main reasons ISO-NE established an FCM - RMR contracts became more prolific in their control area. Although AG acknowledges that a FCM i) provides for greater opportunity to develop alternatives, and ii) reduces the length of required RMRs, which limits distortions in the market and risks to consumers, AG falls short of assigning a value to these benefits when evaluating the cost/benefit of adding an FCM to the existing spot/balancing market.

Both AG and Potomac Economics highlight the fact that lock-in provisions exist in both ISO-NE (7 yrs) and PJM (3 yrs). AG outlines potential upsides and downsides while Potomac Economics focused specifically on the downsides. Both consultants make the same rudimentary assumption (only a single resource offers into the auction with knowledge that no other resource will compete against it), highlighting an incentive that exists for such a resource to strategically bid or make offers well above its actual costs and a reasonable rate. While this may be an issue, it does not mean there is not a solution to such a problem. During conditions where competition does not exist or market power is prevalent (on either the buyer or supplier side of the market) mitigation measures can prevent unjust and unreasonable results. It is insufficient to make a claim that uncompetitive conditions could exist and therefore a FCM should not be developed when solutions could be developed. One of the major benefits of an FCM is the likely increase in competitive new entrants that will discipline markets and pricing based on actual and reasonable costs, returns and risks. This increased competition should result in the lowest cost to consumers and consumers will not have to take on the risk associated with centrally planned markets and government intervention.