



August 12, 2015

Honorable Kathleen H. Burgess
Secretary to the Commission
New York State Public Service Commission
Empire State Plaza, Agency Building 3
Albany, New York 12223-1350
secretary@dps.ny.gov

RE: CASE 15-E-0302, In the Matter of the Implementation of a Large-Scale Renewable Program

Dear Secretary Burgess,

SEIA respectfully submits this correspondence in support of the comments filed by the Alliance for Clean Energy New York (ACE NY) and other clean energy industry associations in the above-referenced proceeding in response to the to the *Notice Instituting Proceeding, Soliciting Comments, and Providing for Technical Conference*, issued June 1, 2015.¹

Established in 1974, SEIA is the national trade association of the United States solar energy industry and is a broad-based voice of the solar industry in New York. Through advocacy and education, SEIA and its 1,000 member companies are building a strong solar industry to power America. There are 70 SEIA member companies in operation in New York working in all market segments – residential, commercial, and utility-scale. Additionally, many SEIA member companies engage in large scale solar project development throughout the United States. In addition, SEIA member companies provide solar panels and equipment, financing and other services to a large portion of New York solar projects.²

SEIA has been engaged in New York's Reforming the Energy Vision proceedings since Staff's initial proposal in 2014, and has continually supported adoption of large scale solar as part of a diverse energy mix to meet New York's long term energy and emissions reduction goals.³

¹ Case 15-E-0302

² The views expressed herein are the views of SEIA and not the views of any individual member company

³ See SEIA Comments in Case 14-M-01-01; Staff New York State Energy Planning Board. 2015. *The Energy to Lead; 2015 New York State Energy Plan*. Available at www.energyplan.ny.gov

Our organization is concerned that New York's Renewable Energy Portfolio Standard (RPS) Main Tier is expiring. With this new proceeding, New York State has a tremendous opportunity to build on and improve the RPS, and to fully develop its clean energy resources. Decisions made now will have long-lasting economic and environmental impacts. To ensure the success of the State's new large-scale renewables policy, we urge the Commission to heed the recommendations put forth by ACE NY.

Clean energy technologies like wind and solar are already working to diversify New York's energy portfolio and stabilize energy prices while reducing reliance on fossil fuels, creating new jobs, and supporting the tax base of local communities. A recommitment to promoting grid-tied renewable energy, especially one that is aggressive and long-term in scope, will send an important signal to our industry that New York is still ripe for investment and ready for business.

As discussed in more detail by ACE NY, we believe the best design for a successful LSR program will include:

- A target-driven approach that requires utilities to procure a specified percentage of renewable energy by specified dates, to ensure an investment level designed to achieve the new 50% by 2030 renewable energy goal;
- A utility obligation to enter into long-term, bundled power purchase agreements;
- Support for diverse technologies in order to realize the technical potential – and obtain the economic and environmental benefits – of the full range of clean energy technologies;
- Incorporation of Long Island into the program's geographic scope.

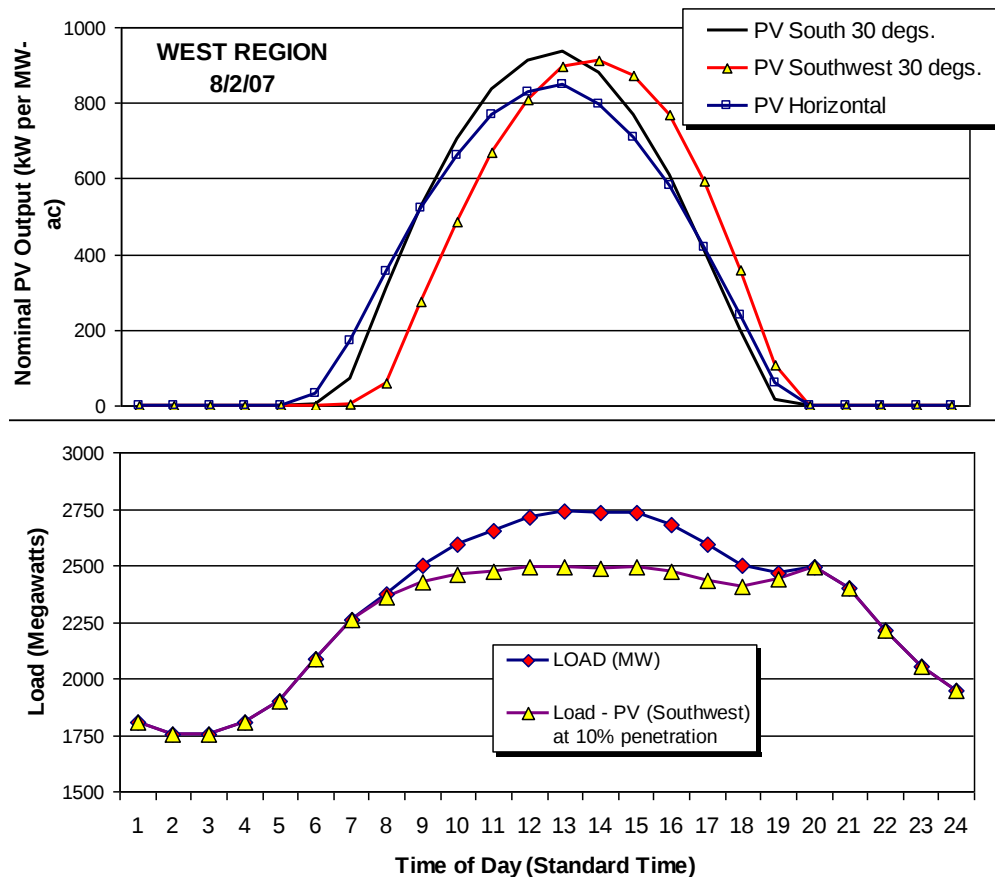
Large-scale Solar Provides Cost Competitive Electricity during Peak Hours

Large-scale solar projects being offered and installed currently show that solar is the most cost-competitive on-peak renewable energy resource today. With the right policies in place large-scale solar projects can provide affordable, reliable renewable energy to New York customers during the daytime hours when it's often needed most. For example, solar recently outbid other conventional resources in a competitive evaluation that reviewed a full suite of project costs and benefits for utility resource planning in Minnesota.⁴ When benefits such as on-peak output and locational benefits are properly valued, large-scale solar emerges as an important part of a balanced energy portfolio.

Further, solar generation is strongly correlated with system peaks. As illustrated in the graphic below, a simulation of 10% PV penetration against the annual system

⁴More info available at: <http://www.renewableenergyworld.com/rea/news/article/2014/01/minn-judge-solar-beats-natural-gas-for-utility-procurement>

peak for 2007 in Western NY (August 2), shows that with the right policies in place, the addition of PV can have a dramatic impact in lowering system peaks. The resulting wholesale market price suppression effect – reducing the market clearing price during extreme peak periods - translates into considerable consumer savings.⁵



In addition, large scale solar energy offers price certainty to utilities because the fuel is free once the system is constructed. This allows costs to be transparent and fixed over the length of the contract, which may be anywhere from 10-30 years. Even when conventional fossil-based generators offer long-term contracts, the actual energy price paid usually varies along with the underlying fluctuating fuel prices.⁶ As a result, solar is seen as a valuable hedge against volatile fossil fuel prices.⁷

⁵ Perez, Richard and Hoff, Tom, *Energy and Capacity Valuation of Photovoltaic Power Generation in New York* (prepared for the Solar Alliance and the New York State Energy Industries Association), March 2008. Other regions of the state were modeled and show a similar pattern.

⁶ While fuel-price hedging contracts exist, the terms of the contracts can be limited and tend to be very expensive.

⁷ More info available at: <http://www.nrel.gov/docs/fy13osti/59065.pdf>; In fact, Renewables Portfolio Standards, such as the California program, were initially adopted primarily for fuel diversity and hedging purposes, in response to the 2001 energy crisis that resulted in significant part from reliance on natural gas supplies.

Large-scale Solar Supports Reliable Grid Operations and Ancillary Services

In addition to providing low cost peaking power, large scale solar can play an important role in providing grid stability when such grid stability attributes are properly valued. Large-scale solar PV operators include advanced ancillary services that enable projects to operate more like conventional power plants and actively contribute to the stability and reliability of a regional grid as part of a balanced energy portfolio.⁸ Some of these features include voltage regulation, active power controls, ramp-rate power controls, fault ride-through, and frequency response controls. These capabilities are managed through the use of a plant-level controller specifically engineered to regulate real and reactive power output of the solar facility such that it behaves as a single large conventional generator, although within the limits dictated by the intermittent nature of the solar resource. According to a study from Lawrence Berkley National Laboratories, applying this type of aggregation to 23 sites reduces the amount and magnitude of intermittency by 84% over 1 minute and 69% over 1 hour.⁹ These advanced features enable solar PV to provide a state or region with additional system flexibility by responding to utility and independent system operator instructions.

On an aggregated basis, large-scale PV resources provide significant reliability and transmission benefits to a state or regional grid. Even if solar PV output varies at a few individual locations due to localized cloud coverage, when the sum of the solar installations in a geographic area is assessed, the variability is reduced and can be managed by the grid operator. The benefit of geographic diversity further emphasizes the need to encourage a viable and diverse market for large-scale solar. In a recent study regarding the integration of wind and solar in PJM, General Electric International, Inc. (GE) found that PJM's large geographic footprint significantly reduced the magnitude of variability-related challenges as compared to smaller balancing areas.¹⁰ GE noted that an individual solar PV plant's variability is significantly reduced when solar plants are aggregated and located in a geographically diverse manner throughout PJM.¹¹

Further, with the proper market signals solar generation deployment can be targeted in congested areas to provide relief for transmission and distribution systems, defer costly transmission upgrades, and help maintain grid reliability. Similarly, small utility-scale power plants may be sited in specific locations to ease congestion on a particular transmission line.

As renewable energy becomes a larger component of the electricity sector, the generation profile of the electric resources available throughout the day is changing.

⁸ See "Grid-Friendly" Utility Scale PV Plants, First Solar at 3 and 13 (August 13, 2013).

⁹ "Implications of Wide-Area Geographic Diversity for Short-Term Variability of Solar Power," (LBNL).

¹⁰ See PJM Renewable Integration Study, General Electric International, Inc. at 12 (February 28, 2014) (GE Study).

¹¹ See Id. at 12 and 15.

For example, solar and wind resources peak in terms of output at specific times depending on geography and other factors. The addition of renewable energy has spurred grid operators and regulators to think differently about matching supply and demand.

Utilities, RTO's and policymakers are already addressing the changes to grid operations presented by increased renewable penetration. For example, in areas of an electric grid where the peak energy use is in the late afternoon, market signals can support the configuration of solar systems to coincide with peak demand later in the day. Solar can also be coupled with storage technologies to match their output to local power demand patterns, including evening peaks. This can be done economically, if supported through appropriate policies, pricing options, and program offerings.¹²

Further, while we wholeheartedly support the recommendation for a long-term deployment strategy, we call on the State to make a stronger funding commitment than is embodied in the Options Paper thus far.

We appreciate the opportunity to weigh in on this critical dialogue and look forward to working with the Commission and other stakeholders as this proceeding continues. Our companies are enthusiastic about the potential market opportunity presented by New York for solar energy across the spectrum of system sizes and market segments, and we look forward to increasing our presence in New York within the framework of a new strong, long-term, and innovative large-scale renewable program.

Respectfully submitted,

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¹² See "Teaching the Duck to Fly: Integrating Renewable Energy," available here: <http://www.raponline.org/featured-work/teach-the-duck-to-fly-integrating-renewable-energy>