New England States
Committee on Electricity

**To:** **ISO-NE, DGFWG**
**From:** **NESCOE (***Contact: Dorothy Capra)*
**Date:** **March 9, 2015**
**Subject:** **Comments on Draft 2015 Solar PV Forecast**

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The New England States Committee on Electricity (NESCOE) appreciates ISO New England's (ISO-NE) continued work on a Solar Photovoltaic (PV) Forecast, which ISO-NE presented to the Distributed Generation Forecast Working Group in draft form on February 27, 2015. Ultimately, ISO-NE's application of an appropriate forecast to system planning and resource adequacy determinations will reflect the fact that New England consumers are increasingly investing in clean, distributed energy resources in furtherance of state energy programs and policies.

NESCOE appreciates the opportunity to provide comments in connection with ISO-NE's draft 2015 Solar PV Forecast. Specifically, ISO-NE developed the forecast using the most current data and information provided by state governments and electric distribution companies (EDCs) in connection with states' distributed generation programs. The information provided by the states and EDCs testifies to the rapid pace of expansion of DG, in particular installed solar PV. In its 2014 forecast of solar PV as to the end of 2014, ISO-NE projected that there would be 246.5 MW of new solar PV in New England, and the recent survey of EDCs indicates that the actual increase was 410 MW. Thus, on a New England-wide basis, solar PV capacity was 40% greater than the PV Forecast. Differences between an estimate and an actual value are understandable and, in this case, should provide an opportunity to consider changes to the proposed forecast discount levels.

At the February 27, 2015 meeting of the Distributed Generation Forecast Working Group (DGFWG), we heard additional testimony to the rapid growth from the EDCs:

- National Grid stated that they have been receiving about 800 applications for new PV interconnections per month;
- Solar panel costs are dropping sharply, reducing the capital cost barrier to new entry;
- Drop in solar panel costs are poised to offset the impact of the elimination of the federal Investment Tax Credit slated for 2017;
- The initial capital cost barrier has also been addressed by companies who will provide the capital for solar PV installation in exchange for the use of roof top space and discounted future electricity costs; and
- There is potential for expansion of state goals for installed solar PV (as Massachusetts did in 2014).

NESCOE agrees with ISO-NE that the results of the ICF study are useful in determining suitable discount factors applied over the forecast horizon. While ISO-NE points out that the planned reduction in the federal Investment Tax Credit along with reduced state policy

support creates "more challenging overall PV economics in 2019 and 2024 relative to 2015," the exhibits in the ICF report show that PV remains a good investment for developers. For example, the "fully supported PV economics" in Massachusetts, 2024 utility, commercial, and residential scale project economics are -$0.09, -$0.002, -$0.001 per kWh, respectively. Similarly, in Connecticut the "fully supported PV economics" for 2024 utility, commercial, and residential scale project economics are -$0.111, -$0.034, and -$0.059 per kWh, respectively. This information, while not dispositive, indicates that the climate for continued investment in solar PV will remain robust throughout the study period, and there is no justification from the ICF report for applying the high discount factors reflected in ISO-NE's Draft 2015 Solar PV Forecast. On the contrary, the indicative results in the ICF report argue for discount factors *lower* than those developed for the 2014 forecast. Lower discount factors would be even further justified when considering that investors are often willing to accept a lower return on investment than 10%, and that trends suggest that wholesale and retail prices are likely to be higher than assumed in the ICF report.

Despite the growth of installed capacity in 2014, the optimism expressed in the recent DGFWG meetings based in part on the evidence described above, and the results of the ICF report indicating that the economics of PV are likely to remain favorable, ISO-NE proposes to apply discount factors for years 2017-2024 that are higher than developed for the 2014 PV forecast. These estimates start at 5% in 2015 and quickly reach 35% in 2017 and 50% for state policy-based estimates in 2020. Given the documented results for 2014 and the momentum in new solar PV installations, we believe that ISO-NE's discount factors are too conservative.

While some adjustment to account for uncertainties may be appropriate, ISO-NE should reconsider the discount factors applied to reasonably anticipated solar PV penetration levels in the draft 2015 PV Forecast. Especially during the current state programs' horizon, discounts reaching 50% are not reasonable. Adhering to such extreme discounts has significant consumer cost implications and does not comport with recent actual experience. Using these discount factors, ISO-NE would be planning the bulk power system assuming that at least half the states' documented PV goals are not realized from 2020 and beyond. Because the discount factor translates into system needs and ultimately consumer spending, any discount has to be reasonable.

NESCOE suggests that the following discount factors are a more appropriate adjustment to account for uncertainty associated with PV expected to result from state programs. For ease of reference, they are compared to the ISO-NE proposed factors.

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| NESCOE | 5% | 10% | 15% | 20% | 25% | 25% | 25% | 25% | 25% | 25% |
| ISO-NE | 5% | 10% | 35% | 40% | 45% | 50% | 50% | 50% | 50% | 50% |

Further, given the results of the ICF study, ISO-NE should reduce its post-policy PV discount rate from 75% to 50%.