

New England States Committee on Electricity

To: ISO-NE
From: NESCOE (*Contact: Allison Smith*)
Date: August 1, 2014
Subject: Comments on Use of PV Forecast presented at July 11 DGFWG

The New England States Committee on Electricity (NESCOE) submits the following comments to ISO-New England (ISO-NE or ISO) in response to presentations given at the July 11, 2014 Distributed Generation Forecast Working Group (DGFWG). NESCOE supports ISO-NE's proposed uses of the Solar PV Forecast in transmission planning studies, but is concerned with the decision to not include installed PV MW in the final values used for the forecast. Our comments will further describe the concern and the impact of the proposal to exclude installed MW.

The New England states would like to thank ISO-NE for a very informative meeting of the DGFWG on July 11, 2014. ISO-NE convened an impressive group of experts to share their knowledge and experience related to interconnection issues. We appreciate ISO-NE's outreach to these resources which will be helpful in our ongoing analysis of increased solar PV penetration in this region. It is apparent that a great deal of effort has been put into thoughtfully crafting a reasonable approach for including the PV forecast into Transmission Planning in New England.

NESCOE appreciates the detailed analysis of available PV data and output coincident with peak. We hope this type of data analysis will be ongoing as more data is available from within the region and from any other studies that may inform this value.¹

Additionally, NESCOE supports the ISO's determination to review critical load levels in the VT/NH Assessment and the Pittsfield/Greenfield study and to reduce load in the SEMA/RI Solutions Assessment to accommodate the PV Forecast.

NESCOE agrees with ISO's decision to complete "in progress" studies under the current set of assumptions as long as the critical load levels determined in these studies will be reviewed against the new load levels once the PV forecast is taken into account.

¹ NERC Integration of Variable Generation Task Force, IBM study to improve solar forecasting, NREL and others.

NESCOE is however concerned with a major adjustment to the forecast value that was communicated at the July 11, 2014 DGFWDG meeting. The ISO revealed a material change in methodology for the treatment of already installed MWs. Prior to the July 11th meeting, the working assumption, based on what was previously communicated to the DGFWDG, was that all installed PV would be counted after discounting MW to the seasonal claimed capability (SCC). The rationale for counting installed PV was that the recent surge in PV installations would not be wholly accounted for in the econometric forecast since recent years load levels are weighted equally with historical data. ISO-NE appears to have modified its approach without prior discussion and the basis for that modification is not clear. As described at the July 11th meeting, the forecast will only apply to future years and all installed PV will be discounted to zero, with the assumption that this generation is already embedded in the load forecast as load reducers.

Completely removing the installed PV load will result in needs being overstated until the historic data averages “catch up” to the recent increases in PV installations. This assumption will set in motion a practice that, especially in the near term due to large growth in PV, undercounts the benefits associated with PV. While in 5-10 years, this methodology would indeed lead to a forecast that appropriately captures the load reducing effects of installed PV through historical data, the short term costs of using this approach are likely to be substantial.

For example, as the ISO states in the draft Regional System Plan 2014,

“Data gathered by the ISO indicate that, starting at relatively low levels in recent years, about 250 MW_{AC} of PV was installed in the region by the end of 2012.² By the end of 2013, installed nameplate PV jumped to almost 500 MW_{AC}.”

The ISO’s new proposed methodology would reduce the ten-year forward value of installed solar PV from 632 MW³ (already discounted to 26% of nameplate MW in 2024) to 384 MW.⁴

Additionally, not including installed PV capacity grossly understates the impact of PV in some localities in the region. The chart below shows how including installed PV capacity, discounted to SCC values, affects PV MW as a percent of 90/10 loads in 2024 compared to ISO’s analysis that excludes installed PV. The column “% of 90/10 load” shows the penetration of PV MW as percent of load based on the SCC MW values in the ISO’s Final Interim PV Forecast, and 2024 90/10 load.⁵ These percentages are 160% of the values ISO presented at the July 11 DGFWDG.⁶

² The DC nameplate rating of a PV installation is equal to the sum of the ratings of its solar panels, whereas its AC nameplate rating is determined by the sum of the rating(s) of its inverter(s).

³ ISO-NE Final Interim PV Forecast April 2, 2014, slide 9.

⁴ Using PV Forecast in Longterm Planning, July 11, 2014, slide 22.

⁵ Ibid, slide 30.

⁶ Ibid.

	MW by State ⁷	% of Total MW ⁸	Discounted MW by State/Zone ⁹	2024 90/10 Load	% of 90/10 load	ISO's analysis
CT	561.8	22%	137.37	8955	1.53%	<1%
MA	1752.8	68%	428.59			
Boston			46.72	7340	0.64%	<1%
Central			59.57	2055	2.90%	1.8%
SEMA			173.58	3670	4.73%	2.9%
Springfield			148.72	2660	5.59%	3.5%
ME	30	1%	7.34	N/A		No Impact
NH	35.4	1%	8.66	N/A		No Impact
RI	62.8	2%	15.36	N/A		No Impact
VT	141.8	5%	34.67	1250	2.77%	1.90%
Total	2584.7	-	632			
Discounted	1805	-				
SCC	632	-				

In light of the significant impact this change could have, NESCOE respectfully requests more discussion surrounding the assumption that all installed PV MW should not be included when assessing solar PV's impact on loads ten years into the future.

It is important to account for the correct capacity value associated with installed solar PV in the present and in forecast values used in planning assumptions in order to capture for consumers the full range of benefits associated with investment in PV. With the adoption of the Performance Incentive design and zonal demand curves, an understatement of PV MW will affect the zonal transmission security analysis (TSA) and local sourcing requirements (LSR) that anchor the zonal demand curves and possibly change a resource's ability to delist for reliability reasons. NESCOE looks forward to discussing how installed PV and the PV Forecast will be used in resource adequacy determinations.

In conclusion, NESCOE appreciates the analysis of solar PV resources and the time ISO has spent with the DGFWG to develop a Solar PV Forecast. We disagree with the most recent decision to discount installed PV MW to zero and ask ISO to further discuss this proposal with the DGFWG. Understating the impact of solar PV growth will lead to overly conservative planning and reliability analyses, thereby increasing overall consumer costs unnecessarily. A more reasonable approach would be to adequately reflect installed PV MW in current system analysis and load forecasting.

⁷ Final Interim PV Forecast values April 2, 2014

⁸ MW by state divided by Total MW

⁹ Percent of Total MW times SCC Discounted total(632 MW) by state or MA zone.