New England States
Committee on Electricity

To: **ISO-NE**
From: **NESCOE**
Date: **January 7, 2014**
Subject: **Comments on ISO-NE Draft Interim PV Forecast**

On December 16, 2013, ISO-NE presented a draft interim forecast of solar PV to the Distributed Generation Forecast Working Group (DGFWG). NESCOE commends ISO-NE for producing an interim PV forecast and generally supports the draft presented at the December 16 meeting.

The draft interim forecast provides an estimate of the amount of solar PV coming on-line in the next ten years as a result of state programs. As ISO-NE made clear at the DGFWG meeting, the draft represents an interim forecast and ISO-NE expects to include additional information in the distributed generation (DG) forecasts for subsequent years. NESCOE supports the interim forecast's focus on state programs that provide incentives for solar PV; while such a focus does not provide the complete picture of expected DG growth, it does capture the mechanism that is driving a large percentage of new DG.

In addition, NESCOE appreciates that time constraints make it difficult to include DG technologies beyond solar PV and conduct econometric studies that examine the likelihood of DG resources being constructed without the assistance of state programs in this year's forecast. NESCOE looks forward to working with the DGFWG to include such information in next year's DG forecast.

Specifically, some states have programs that support the growth of additional DG technologies such as combined heat and power (CHP). Next year's DG forecast should include such generating resources that do not participate in ISO-NE markets, but that will on a going forward basis contribute substantial energy to the system, offset future loads and reduce consumer costs over the long-term. For those years beyond the reach of current state policies and programs, the next DG forecast should also consider econometric studies that predict the reasonable growth of solar PV due to declining costs to consumers.

In connection with the interim forecast, NESCOE continues to be concerned about the proposed discount factor for the years after each state reaches its solar PV goal. The interim forecast proposed by ISO-NE assumes that, once each state program ends, there will be a constant amount of new solar PV each year that is equal to the amount created under the last year of the state program. ISO-NE proposes to discount this amount by 75%. NESCOE recognizes that there is uncertainty regarding the extent to which state programs will continue and, more specifically, whether and when solar PV will become sufficiently cost-effective to result in consumer investment without state programs. NESCOE concurs with ISO-NE that power system reliability is a priority for ISO-NE and consumers alike, and recognize that conservatism in the approach to a DG forecast is one mechanism to protect reliability. However, NESCOE urges ISO-NE to consider the following factors in striking an appropriate balance between conservatism and realism in connection with solar PV penetration. In developing a reasonable number for the amount of solar PV coming into service if and when state policies and programs may terminate, it is reasonable and appropriate to consider the following factors: (1)

precedent that the New England states frequently extend programs to support renewable resources once a particular state goal has been reached[1]; and (2) current examples of solar PV projects being installed in New England outside of any state program due to the declining cost of solar technologies.

NESCOE proposes a discount factor of 50% for new solar PV in connection with any assumption about New England states ending solar PV programs instead of ISO-NE's more conservative proposal for a 75% discount factor. The discount rate is ultimately a qualitative judgment that needs to reflect reasonable predictions regarding state support of solar PV deployment and declining cots that are already causing some customers to invest without state support. The 50% discount factor better reflects the appropriate balance between conservatism and the reasonable likelihood of continued PV solar installations whether through continued state support or declining costs.

With regard to the Installed MW used in the Interim PV Forecast, NESCOE advises ISO-NE to use the most recent MW numbers available in each state for 2013. Specifically, in Massachusetts there were 425 MW PV installed as of December 31, 2013.[2] After accounting for a DC to AC conversion ratio of 83%, installed MW in 2013 for MA should be 352.75 MW rather than 322.2 MW as stated in the Interim PV Forecast. It is important to correct this number because installed MW are not discounted in the forecast.

[1] In both Massachusetts and Vermont, the goal for new DG was increased considerably once the initial goal was achieved. Likewise, state renewable portfolio programs and energy efficiency goals have been extended beyond initial goals.
[2] http://www.mass.gov/eea/grants-and-tech-assistance/guidance-technical-assistance/agencies-and-divisions/doer/

Finally, NESCOE will work with ISO-NE to provide further information as needed to eliminate potential double-counting of MW in this forecast and the energy efficiency forecast that could arise due to resource qualification provisions of energy efficiency and alternative energy resource programs. The state agencies have expressed a strong interest in assisting ISO-NE as it continues to conduct a responsible analysis of all DG in the region (including solar, wind, and CHP) for its forecasting activities. To ensure against double counting, such an analysis should take into account the following:

1) The amount and identification of DG that has sought qualification in the Forward Capacity Market. This should include
    a. Any DG in the EE portfolios that have been submitted on behalf of utilities, identifying explicitly any CHP which was eligible for EE rebates and, due to the rebates terms, were unable to submit their assets individually;
    b. Any DG that has sought qualification for FCM outside of utility EE portfolios
2) The amount and identification of DG participating in state incentive programs, including
    a. Projects qualifying for the region's RPS programs;
    b. Projects qualifying for the Massachusetts APS program;
3) The amount and identification of DG seeking Net Metering in the region
4) The amount and identification of DG seeking interconnection in the region

Again, NESCOE recognizes the time and resources ISO-NE has committed to developing this forecast over the past few months and commends the work completed so far.