VSPC Distributed Generation Forecast Working Group Update

Melissa Bailey

Background

- DGFWG was established in late 2013, in part due to stakeholder concern that distributed resources were not being adequately accounted for in ISO-NE's load forecast.
- The group has focused on PV resources because of their prevalence in the region.
- A Final Interim PV Forecast was issued in May 2014 based on 2013 installation data from distribution utilities and state policy goals
  - Pre-2013 DG was assumed to be embedded in the load forecast.
  - The 2014 DG forecast was not used in setting the region's Installed Capacity Requirement (ICF).

Economic Drivers of PV in New England

- In late 2014, ISO contracted with ICF International to identify the economic drivers of PV development. Primary drivers identified were:
  - Installed cost/first cost
  - Power Revenue (net metering, wholesale)
  - REC Revenue
  - Federal Tax Credits
  - Federal Depreciation
- The study analyzed the economics in each of the 6 states for 3 project sizes in 3 time periods (2015, 2019, 2024)
- ISO conclusions from the ICF study:
  - PV projects should continue to offer strong investment returns in the coming years.
  - The planned decline of the federal ITC in 2017, creates more challenging overall PV economics in later years, but projects are still projected to yield positive returns.
  - The report did not attempt to forecast PV deployment, but was used to inform ISO-NE's 2015 PV Forecast.

2015 PV Forecast

- ISO surveyed distribution utilities in the 6 New England states for distributed generation installed within their territories as of 12/31/14.
  - ISO requested the following information:
    - Project status (e.g., in-service/cancelled/pending/dismantled)
    - Location (Town/zip code)
    - Installed capacity, in kW_{ac}
    - Technology type (PV (tracking?), wind, fuel cell, CHP, etc.)
    - Online date – i.e., the date the project went into service
    - If terminology used differs from those described in (a)-(e) above, please note such differences ISO as how to interpret them accordingly
  - For Vermont this includes net metering, Standard Offer, and small utility-scale projects.
- ISO provided a Draft PV forecast in February and received stakeholder comments on the assumptions.
- ISO discounted the forecasted "policy-based" MW of PV by 5-25%and "post-policy" MW were discounted by 50%.

Final 2015 PV Forecast

States	Annual Total MW (AC nameplate rating)											Totals
	Thru 2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
CT	118.8	70.9	89.9	45.8	43.1	40.4	40.4	26.9	26.9	26.9	26.9	**556.8**
MA	666.8	197.0	229.8	51.4	48.4	45.4	45.4	30.2	30.2	30.2	30.2	**1,405.1**
ME	10.4	2.2	2.2	2.0	1.8	1.7	1.7	1.7	1.7	1.7	1.7	**28.9**
NH	12.7	4.3	4.3	3.8	3.6	3.4	3.4	2.3	2.3	2.3	2.3	**44.4**
RI	18.2	9.7	20.4	27.2	31.0	29.0	20.6	7.1	5.4	5.4	5.4	**179.3**
VT	81.9	40.4	40.4	22.3	13.9	6.3	6.3	6.3	6.3	6.3	4.2	**234.7**
Regional - Annual (MW)	**908.8**	**324.3**	**386.9**	**152.4**	**141.7**	**126.2**	**117.8**	**74.6**	**72.9**	**72.9**	**70.8**	**2,449.1**
Regional - Cumulative (MW)	**908.8**	**1233.1**	**1620.0**	**1772.4**	**1914.1**	**2040.3**	**2158.1**	**2232.6**	**2305.5**	**2378.4**	**2449.1**	**2,449.1**

Final 2015 PV Forecast

- Summer Seasonal Claimed Capability Forecast was estimated at 40% of Nameplate Capacity. (493 MW in 2015; 980 MW in 2024)
- PV development is happening more rapidly than projected in 2014; the 2015 PV forecast is higher than the 2014 PV forecast (387 vs. 180 MW for 2015.)
- The PV forecast classifies resources into 4 categories:
  - PV as a capacity resource in the Forward Capacity Market (FCM)
  - Non-FCM Settlement only Resources (SOR) and Generators
  - Behind-the-Meter (BTM) PV
    - Behind-the-Meter PV Embedded in Load (BTMEL)
    - Behind-the-Meter PV Not Embedded in Load (BTMNEL)
  - The categories are mutually exclusive; ISO is concerned with double counting of DG resources in their Load Forecast.
  - ISO has production data from 665 sites (82 MW capacity) across the region. This generation profile was used to estimate how much PV generation was embedded in loads.

Next Steps

- The 2015 Final PV forecast by state will be included in the 2015 CELT Report to be issued May 1st.
- The DGFWG will hold a meeting in June focused on data collection efforts.
  - ISO-NE will request information from distribution utilities on DG interconnection data as of April 30, 2014.
  - ISO-NE continues to focus on receiving historical PV energy production data.
- ISO staff will share the PV forecast and methodologies with the appropriate NEPOOL committee/subcommittee for consideration in how it may be used in planning studies.
- Discussions regarding the ICR and Resource Adequacy will likely occur in the Planning Advisory Committee.