



DISTRIBUTED GENERATION IN MASSACHUSETTS

Massachusetts Department of Public Utilities



DISCLAIMER

Comments reflect my personal observations, and do not necessarily reflect the position of the Commonwealth of Massachusetts, the Department of Public Utilities (DPU), or the DPU Commissioners.



OVERVIEW

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- This presentation focuses on recent developments in Distributed Generation (DG) policy.
- Primary programs for DG discussed in this presentation:
 - Net metering.
 - Renewable Portfolio Standards (RPS), specifically the solar carve-out.
 - Grants & Rebates.



OVERVIEW (CONT.)

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- Policies regarding DG Participation in ISO-NE Markets.



OVERVIEW (CONT.)

- Please note that the following programs are interrelated

DG Program Name	Eligible DG Technologies	Eligible Nameplate Size(s)	Anticipated Capacity	Program End Date	Total Anticipated Funding (Total \$)	Limited to within MA Borders?	Responsible Agency/Entity
Net Metering	Solar, Wind, Anaerobic Digestion, and Agricultural	2 MW _{AC} for private entities; up to 10 MW _{ac} for public entities**	999 MW _{AC} *	None	TBD	Yes (IOUs)	DPU
RPS	Solar, Wind, Ocean, Fuel Cells, Landfill Gas, Hydro, Biomass, Hydrokinetic, and Geothermal	n/a (except for Hydro)	Variable	None	TBD	No	DOER
<i>Solar Carve-Out</i>	Solar	6 MW _{DC} **	1,600 MW _{DC}	2020 (target date)	TBD	Yes***	DOER
Grants	Various	Residential Scale		Rolling		Yes	CEC

*Increased from 666 MW_{AC} presented in September 2013

**Limits per land parcel

***Connected to IOUs or munis



OSGF

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

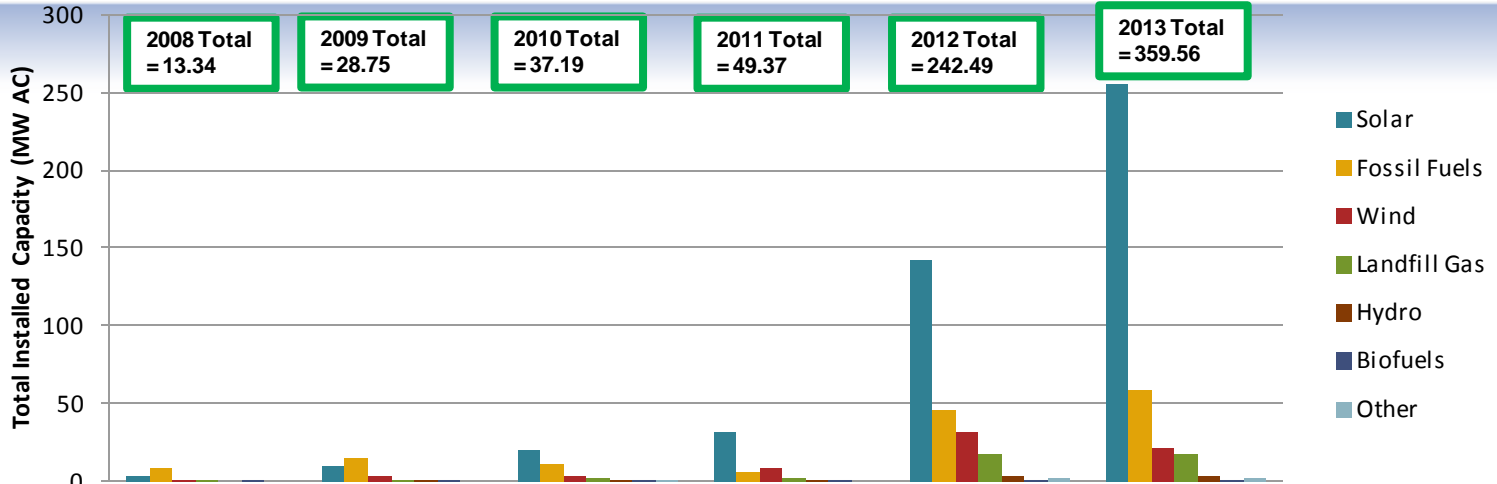
- Every year, the electric distribution companies file on-site generating facility ("OSGF") reports to the DPU.
- The DPU aggregates data on installed capacity and files a report to the MA Legislature.
- The data gives a snapshot of installed DG.
- Problems with data:
 - Only filed once per year (~March).
 - Only includes investor-owned utility data.
- Actual (i.e. measured) *production data* is not included in the OSGF for every facility.
 - There is no requirement that *production* be measured.
 - Many OSGFs offset on-site load.



OSGF- CAPACITY

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets



	2008	2009	2010	2011	2012	2013
Solar	3.02	9.55	20.34	31.59	141.95	255.85
Fossil Fuels	8.94	14.49	11.51	6.15	45.79	58.99
Wind	0.86	3.35	3.55	9.10	31.13	21.15
Landfill Gas	0.46	0.60	1.62	1.60	17.23	17.23
Hydro		0.10	0.05	0.35	3.19	3.43
Biofuels	0.06	0.65	0.12	0.58	1.53	1.25
Other			0.01		1.67	1.66

Source: DPU On-site Generating Facility Reports to MA Legislature



NET METERING – ELIGIBLE TECHNOLOGIES

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- Eligible Technologies: *

1. solar;
2. wind;
3. anaerobic digestion; and
4. Agricultural.

* DPU is currently studying whether to permit small hydro to net meter. Report and recommended legislation due to legislature by July 1, 2015



NET METERING – NEW POLICIES

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- Net Metering Caps for IOU's Increased in November 2014:
 - Private cap: 4% (up from 3%); and
 - Public cap: 5% (up from 3%)
 - Forecast to yield +333 MW of net metered resources

Note - Net metering caps are based on the IOU's *highest historical peak load*



NET METERING DATA

AS OF 12/10/2014

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

Private: Available, Interconnected, Reserved and Pending Capacity (Values in kW)

Company	Net Metering Cap	Interconnected (a)	Reserved Cap Allocations (b)	Pending Cap Allocations (c)	Capacity Available Under Cap (e)	Waiting List (d)
<u>NGrid</u>	205,240	105,506	35,270	9,429	55,036	0
<u>NStar</u>	199,120	75,235	7,550	3,781	112,555	0
<u>WMECO</u>	33,800	8,987	1,685	1,434	21,694	0
<u>Unitil</u>	4,080	2,509	69	10	1,492	0
<u>NGrid-Nantucket</u>	1,819	364	0	0	1,455	0
Total	444,059	192,600	44,574	14,654	192,231	0

Public: Available, Interconnected, Reserved and Pending Capacity (Values in kW)

Company	Net Metering Cap	Interconnected (a)	Reserved Cap Allocations (b)	Pending Cap Allocations (c)	Capacity Available Under Cap (e)	Waiting List (d)
<u>NGrid</u>	256,550	135,369	52,524	6,196	62,461	0
<u>NStar</u>	248,900	102,821	40,453	1,511	104,116	0
<u>WMECO</u>	42,250	14,534	5,260	4,752	17,705	0
<u>Unitil</u>	5,100	3,047	0	0	2,053	0
<u>NGrid-Nantucket</u>	2,274	0	0	0	2,274	0
Total	555,074	255,770	98,236	12,458	188,609	0



NET METERING PRODUCTION DATA

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- Actual (i.e. measured) *production data* is not available for every facility
 - Net metering facilities $> 60 \text{ kW}_{AC}$ are required to have (monthly) production meters



NET METERING – POSSIBLE FUTURE POLICY CHANGES

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- August 6, 2014 Legislation re Future Design of Net Metering
 - Net Metering and Solar Task Force
 - Established to review the long-term viability of net metering.
 - Develop recommendations on incentives and programs to support deployment of 1600 MW of solar.
 - Task Force Report is due to the Legislature by March 31, 2015.
 - Small Hydro
 - DPU is studying the feasibility, impacts and benefits of allowing customers of electric distribution companies to net meter electricity produced by small hydroelectric facilities.
 - Report to legislature including draft legislation due to the Legislature by July 1, 2015.



RPS & APS

ELIGIBLE TECHNOLOGIES

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- Class I Eligible Technologies:
Post 1997 and
 1. solar;
 2. wind;
 3. ocean thermal, wave, or tidal;
 4. fuel cells w/renewable fuel;
 5. landfill gas;
 6. run-of-river hydro *up to* $30 MW_{AC}$;
 7. low-emission biomass;
 8. marine or hydrokinetic energy;
or
 9. Geothermal.

- SREC Eligible Technologies:
 1. PV that is used on-site, in MA, and interconnected
- Class II Eligible Technologies:
 1. same as Class I, except *pre* 1998 $7.5 MW_{AC}$ hydro limit; or
 2. municipal solid waste pre 1998
- APS Eligible Technologies:
 1. gasification tech.;
 2. CHP;
 3. flywheel storage;
 4. paper-derived fuel; or
 5. efficient steam tech.



RPS & APS DATA

- DOER has granted Statement of Qualifications to the following:

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

Category	Date of Data	Qualified (MW _{AC} ; except SRECs which is MW _{DC})	Qualified & Operational (MW _{AC} ; except SRECs which is MW _{DC})	Under Review (MW)
RPS Class I	12/9/14	3,744.65	3,074.05	12.88
<i>SREC</i>	12/9/14	835.70	651.20	A lot of solar is in development in MA
RPS Class II				
<i>Non MSW</i>	12/9/14	174.83	174.83	
<i>MSW</i>	12/9/14	283.55	283.55	
APS	12/9/14	332.28	332.28	
Total		5,371.01	4,515.91	12.88



RPS & APS PRODUCTION DATA

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- Production data is available for every facility
 - Interval meters, however, are not required
- Spreadsheets summarizing all qualified units are available on [DOER's website](#)



RPS & APS

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- RPS-qualified facilities are (often) eligible for other programs, such as:
 - Net metering;
 - Grants; and
 - State tax incentives.
- SREC-qualified facilities, however, are forbidden from using multiple incentive programs (e.g. some grants).
 - Are eligible for net metering.



RPS & APS – NEW POLICIES

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- DOER launched SREC-II program in April 2014 to continue growth of solar market to meet Governor's new goal of 1,600 MW_{DC} by 2020.
 - Currently about 700 MW_{DC} installed (256 MW in 2014 alone).



GRANTS & REBATES

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Policies re: DG Participation in ISO-NE Markets

- Grant & rebate programs – for electricity – administered by the MA Clean Energy Center:
 - Commonwealth Hydro;
 - Commonwealth Solar II (PV < 15 kW_{DC}); and
 - Commonwealth Wind
- Incentives vary by program
 - Most grants & rebates, while important, are not the primary driver for development
- Commonwealth Solar II ends in 2014, but will be followed closely by a \$30 million DOER sponsored loan program, which will subsidize solar loans for MA homeowners.



POLICIES GOVERNING DG PARTICIPATION IN ISO-NE MARKETS

- In MA Electric Distribution Companies are required to register DG connected to their networks as Settlement Only Generators (See D.P.U 09-03-A).
 - The rationale is that money earned by the LDCs in the energy market will help to shield LDC's non-DG customers from impact of loss of revenue from net-metered customers

Outline

- Overview
- OSGF
- Net Metering
- RPS & APS
- Grants & Rebates
- Polices re: DG Participation in ISO-NE Markets



www.mass.gov/dpu

Thank you

Brian Ritzinger

**Electric Power Division
MA Department of Public Utilities
One South Station
Boston, MA**

Brian.Ritzinger@state.ma.us

**Information on MA Net metering:
www.Mass.gov/dpu/netmetring**