



DISTRIBUTED GENERATION IN MASSACHUSETTS

Massachusetts Department of Public Utilities

December 8, 2015



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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
 - 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

*Limits per land parcel

**Connected to IOUs or munis



OSGF

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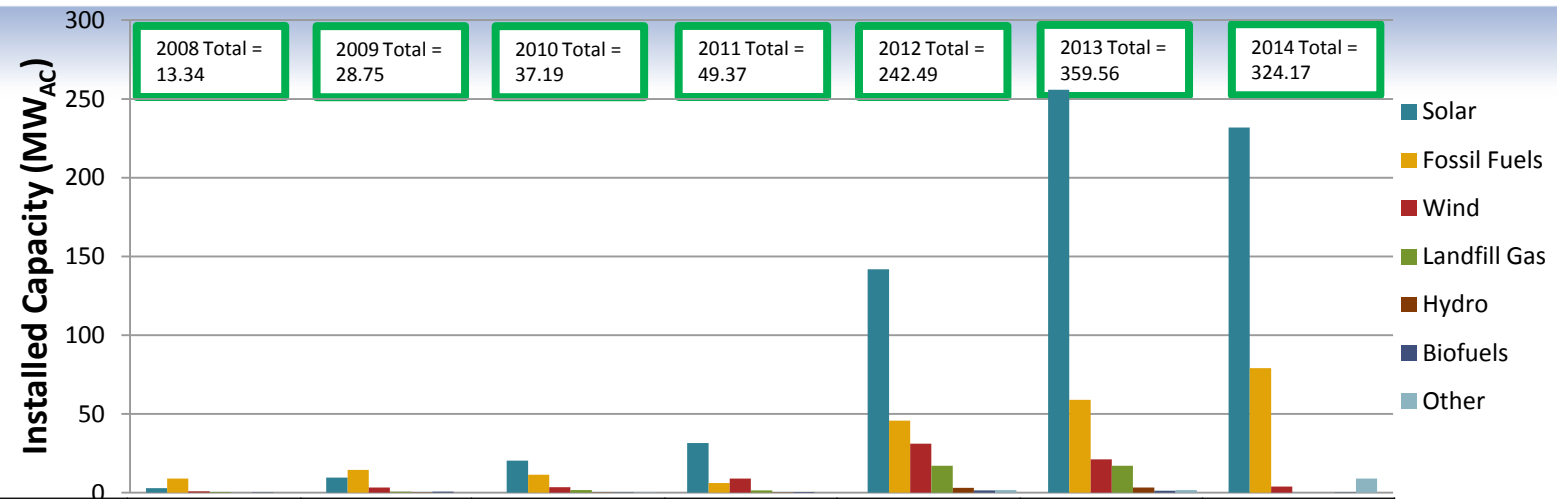
- Every year, the electric distribution companies file on-site generating facility ("OSGF") reports to the DPU
- The DPU aggregates data on installed capacity and files a report with the MA Legislature
- The data gives a snapshot of installed DG
- Problems with data:
 - Only filed once per year (~March)
 - 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 – INSTALLED CAPACITY BY YEAR

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	2008	2009	2010	2011	2012	2013	2014
Solar	3.02	9.55	20.34	31.59	141.95	255.85	231.76
Fossil Fuels	8.94	14.49	11.51	6.15	45.79	58.99	79.14
Wind	0.86	3.35	3.55	9.10	31.13	21.15	3.97
Landfill Gas	0.46	0.60	1.62	1.60	17.23	17.23	0.00
Hydro	0.00	0.10	0.05	0.35	3.19	3.43	0.00
Biofuels	0.06	0.65	0.12	0.58	1.53	1.25	0.30
Other	0.00	0.00	0.01	0.00	1.67	1.66	9.00

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



NET METERING – ELIGIBLE TECHNOLOGIES

- Eligible technologies:
 1. solar
 2. wind
 3. anaerobic digestion
 4. agricultural
- Other technologies, including hydroelectric, are eligible for net metering as class I facilities (up to 60 kW_{AC})

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NET METERING – CURRENT CAPS

- Net metering caps for IOUs:
 - Private cap: 4%
 - Public cap: 5%

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

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NET METERING DATA

AS OF 12/1/15

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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	116,169	87,569	1,016	486	72,237
<u>NStar</u>	199,120	91,346	27,322	4,916	75,536	0
<u>WMECO</u>	34,160	11,092	3,257	244	19,567	0
<u>Unitil</u>	4,080	2,909	564	49	558	569
<u>NGrid-Nantucket</u>	1,819	364	536	0	919	0
Total	444,419	221,880	119,248	6,225	97,066	72,806

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	190,588	62,789	3,119	54	49,928
<u>NStar</u>	248,900	119,682	40,599	651	87,969	0
<u>WMECO</u>	42,700	21,652	0	5,207	15,841	0
<u>Unitil</u>	5,100	3,047	0	0	2,053	0
<u>NGrid-Nantucket</u>	2,274	100	0	0	2,174	0
Total	555,524	335,068	103,388	8,977	108,091	49,928

Data available at: www.massACA.org



NET METERING PRODUCTION DATA

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- 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: SMALL HYDRO

- Department investigation into net metering of small hydroelectric facilities in D.P.U. 14-118 resulted in a Report to the General Court and proposed Draft Legislation
- Report recommendations include:
 - allow hydroelectric facilities up to 2 MW_{AC} to net meter;
 - treat hydroelectric facilities the same as other renewable technologies from a net metering standpoint;
 - support eligibility for new and existing hydroelectric facilities; and
 - require RPS compliance for all hydroelectric facilities that net meter



NET METERING – POSSIBLE FUTURE POLICY CHANGES

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- Net Metering and Solar Task Force delivered Report to the Legislature on April 30, 2015 supporting a policy to maintain the growth of the solar market to 1,600 MW_{DC} and beyond
 - Consensus could not be reached on policy design/details
- Several Bills in Committee at the State Legislature could impact net metering by raising the solar net metering caps and potentially changing the net metering credit value
- Rush to raise the solar net metering caps prior to winter recess as the federal solar investment tax credit (ITC) expires at the end of 2016
- No Bills passed into law prior to the winter recess



RPS & APS

ELIGIBLE TECHNOLOGIES

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- 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 Statements of Qualification to the following:

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Category	Date of Data	Qualified (MW _{AC})	Qualified & Operational (MW _{AC})	Under Review (MW _{AC})
RPS Class I	11/25/2015	4,052.16	3,214.24	18.91
<i>SREC I & SREC II</i>	11/25/2015	895.44	736.48	56.96
RPS Class II				
<i>Non MSW</i>	11/25/2015	191.98	191.98	
<i>MSW</i>	11/25/2015	283.55	283.55	
APS	11/25/2015	336.69	336.69	
Total		5,759.82	4,762.94	75.87

A lot of solar is in development in MA



RPS & APS PRODUCTION DATA

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



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- 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

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- 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 985 MW_{DC} installed (Over 200 MW in 2015 alone)



GRANTS & REBATES

- Grant, rebate, and other programs – for electricity – administered by the MA Clean Energy Center:
 - Commonwealth Hydro;
 - Commonwealth Organics-to-Energy;
 - Commonwealth Wind;
 - Mass Solar Connect;
 - Solarize Mass
- Incentives vary by program
 - Most grants & rebates, while important, are not the primary driver for development
- \$30 million Mass Solar Loan Program will be launched this month:
 - Designed to encourage local lenders to provide low interest solar loans to homeowners in Massachusetts

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POLICIES GOVERNING DG PARTICIPATION IN ISO-NE MARKETS

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



www.mass.gov/dpu

Thank you

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