



DISTRIBUTED GENERATION IN MASSACHUSETTS

Massachusetts Department of Public Utilities

December 16, 2016



DISCLAIMER

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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	1,667 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} *	2,000 MW _{DC}	2018 (last installation likely complete by 2018)	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
- Limitations of 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

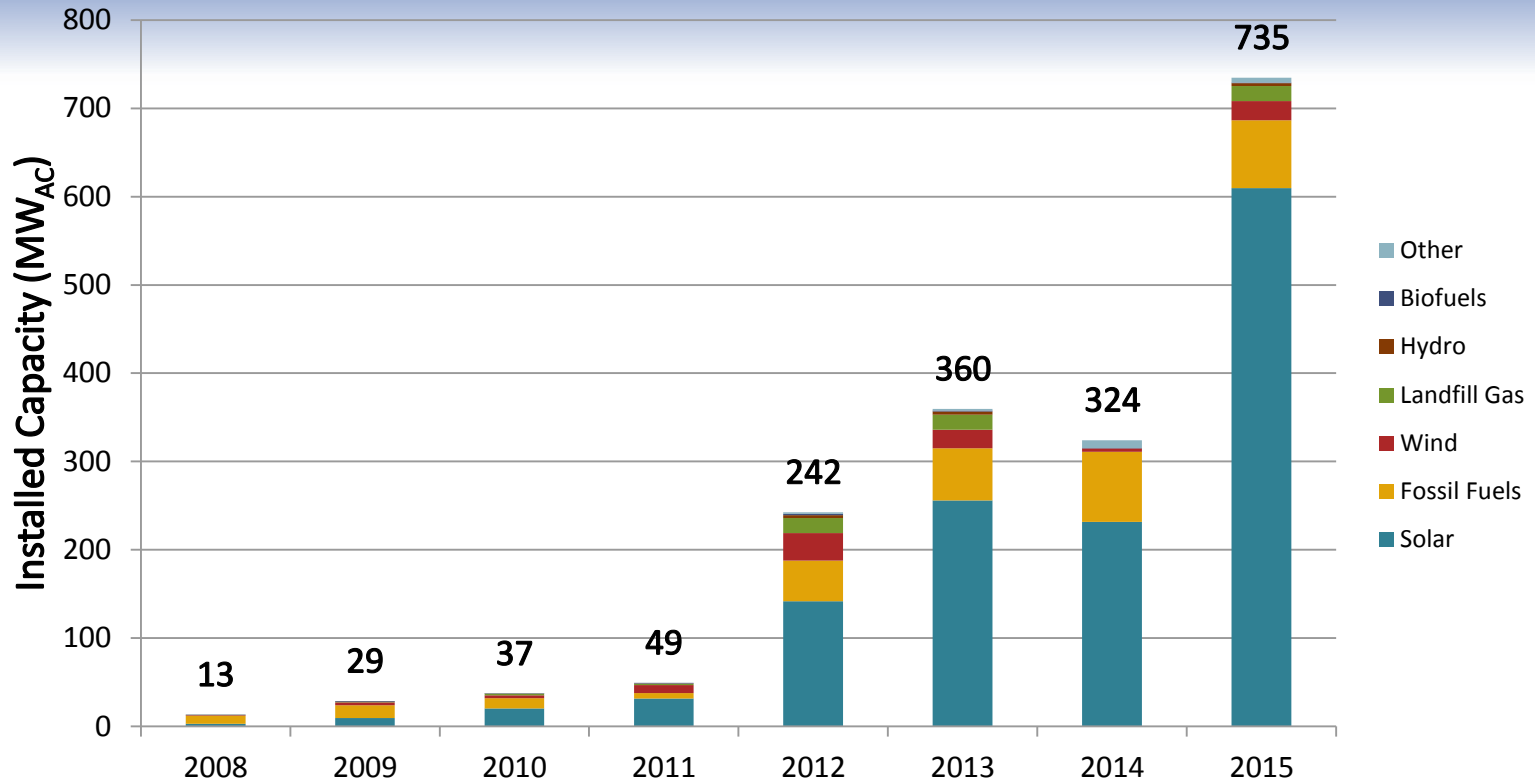


OSGF:

INSTALLED CAPACITY BY YEAR

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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: 7%
 - Public cap: 8%

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

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NET METERING DATA

AS OF 12/13/16

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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>	359,170	157,055	201,545	538	32	12,709
<u>NStar</u>	348,460	126,985	96,910	3,414	121,150	0
<u>WMECO</u>	59,780	17,368	35,805	2,469	4,139	0
<u>Unitil</u>	7,140	3,956	3,147	0	37	88
<u>NGrid-Nantucket</u>	3,183	94	328	0	2,760	0
Total	777,733	305,459	337,736	6,421	128,118	12,797

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>	410,480	221,496	138,598	5,359	45,027	0
<u>NStar</u>	398,240	139,639	50,533	2,234	205,834	0
<u>WMECO</u>	68,320	19,456	11,657	0	37,207	0
<u>Unitil</u>	8,160	3,047	3,434	0	1,679	0
<u>NGrid-Nantucket</u>	3,638	100	0	0	3,538	0
Total	888,838	383,737	204,223	7,593	293,285	0

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: POLICY CHANGES

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- Solar Energy Act (April 2016)
 - Increased net metering caps
 - Established Market Net Metering Credits, equal to 60% of excess kWh generated (previously 100%), which apply to
 - new solar net metering facilities
 - all solar net metering facilities 25 years from interconnection authorization
- Energy Diversity Act (August 2016)
 - Allows small hydro with nameplate capacity of 2 MW_{AC} or less to net meter (currently limited to 60 kW_{AC})
 - DPU to open proceeding to amend regulations



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
9. Geothermal

- **SREC Eligible Technologies:**

1. PV that is used on-site and interconnected to MA electric grid

- **Class II Eligible Technologies:**

1. same as Class I, except *pre* 1998 7.5 MW_{AC} hydro limit
2. municipal solid waste pre 1998

- **APS Eligible Technologies:**

1. CHP
2. flywheel storage
3. renewable thermal (pending rulemaking)
4. fuel cells (pending rulemaking)
5. waste-to-energy thermal (pending rulemaking)



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	12/01/2016	3,867.21	3,005.21	0.00
<i>SREC I & SREC II</i>	12/01/2016	1,775.71	1,003.12	8.40
RPS Class II				
<i>Non MSW</i>	12/01/2016	198.59	198.59	
<i>MSW</i>	12/01/2016	283.55	283.55	
APS (All CHP to date)	12/01/2016	332.85	332.85	
Total		6,457.91	4,823.32	8.40

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
- Monthly PV production is tracked by MassCEC's Production Tracking System (PTS), which serves as the independent verifier for SREC data
- Spreadsheets summarizing all qualified units are available on [DOER's website](#) and are updated monthly



RPS & APS

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- RPS-qualified facilities are (often) eligible for other programs, such as:
 - Net metering
 - Grants/rebates
 - State tax incentives
- SREC-qualified facilities, however, are forbidden from using multiple incentive programs (e.g., some grants)
 - Are eligible for net metering
- APS renewable thermal facilities will also be prohibited from receiving certain levels of funding from other state programs



RPS & APS – NEW POLICIES

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- DOER launched SREC-II program in April 2014 to continue growth of solar market to meet Commonwealth's goal of 1,600 MW_{DC} by 2020
 - Currently more than 1,250 MW_{DC} installed under SREC I and II programs (Over 300 MW in 2015 with a larger amount expected in 2016)
- SREC II program cap reached in February 2016 in terms of applications received
- DOER extended SREC program while developing its successor
- Extension expected to yield as much as 400 MW_{DC} of additional projects



RPS & APS – NEXT GENERATION SOLAR INCENTIVE PROGRAM

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- In April 2016, legislation was enacted that increased net metering caps, amended net metering credit values, and directed DOER to:
 1. *“Adopt rules and regulations that lower the cost of the commonwealth’s solar incentive programs for ratepayers;”* and
 2. *“develop a statewide solar incentive program to encourage the continued development of solar renewable energy generating sources...throughout the commonwealth”*
- DOER’s straw proposal was released on September 23rd
- Proposes a tariff-based incentive program that would support an additional 1,600 MW_{AC}
- Most capacity under program expected to be installed between 2018 and 2023
- Formal regulatory process expected to begin in January 2017



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
 - Mass Solar Loan
- Incentives vary by program
 - Most grants & rebates, while important, are not the primary driver for development

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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