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# GWSA Regulations – Retail Electricity Sellers Stakeholder Meeting

Massachusetts Department of Environmental Protection

Boston, MA

November 7, 2016

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# GWSA Regulations - Electricity Sector Stakeholder Meeting

Executive Order 569:

***“The Department of Environmental Protection shall promulgate final regulations that satisfy the mandate of Section 3(d) of [GWSA] by August 11, 2017, having designed such regulations to ensure that the Commonwealth meets the 2020 statewide emissions limit mandated by the GWSA....The Department of Environmental Protection shall:***

***...consider limits on emissions from, among other sources or categories of sources, the following: (i) leaks from the natural gas distribution system; (ii) new, expanded, or renewed emissions permits or approvals; (iii) the transportation sector or subsets of the transportation sector, including the Commonwealth’s vehicle fleet; and (iv) gas insulated switchgear...”***

September 16, 2016



# GWSA Regulations - Electricity Sector Stakeholder Meeting

Massachusetts Supreme Judicial Court:

***“...this court concluded that the plain language of [GWSA, Section 3(d)] requires the department to promulgate regulations that address multiple sources or categories of sources of greenhouse gas emissions, impose a limit on such emissions that may be released, limit the aggregate greenhouse gas emissions that are released from each group of regulated sources or categories of sources, set greenhouse gas emissions limits for each year, and set limits that decline on an annual basis.”***

May 17, 2016



# GWSA Regulations - Electricity Sector Stakeholder Meeting

## Global Warming Solutions Act of 2008

### Section 3(c):

***“Emissions levels and limits associated with the electric sector shall be established by the executive office and the department, in consultation with the department of energy resources, based on consumption and purchases of electricity from the regional electric grid, taking into account the regional greenhouse gas initiative and the renewable portfolio standard.”***

### Section 3(d):

***“The department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions.”***



# Overview of Required Reductions

<b>2020 Emission Limit</b>	<b>25.0% below 1990 Emissions</b>
2013 Actual Emissions (most recent inventory)	19.7% below 1990 Emissions
<b>Additional Reductions Needed (2013 – 2020)</b>	<b>5.3% below 1990 emissions* (minimum)</b>

- December 2015 - EOEEA Clean Energy and Climate Plan (CECP) Update lists policies that “will reduce emissions to at least 25% below the 1990 level by 2020.”

\* Throughout this presentation, quantities of greenhouse gas (GHG) emissions are expressed as a percent of 1990 emissions, consistent with the approach used in the CECP Update



# Draft Reductions from New and Existing MassDEP Regulations

MassDEP Regulation	New or Draft Amendment?	Section 3(d)?	Estimated Reductions 2013 – 2020*
Transportation Sector Regulations			3.2 - 4.1%
Vehicle GHG Standards	N/A (Existing)	No	
Requirements for Transportation	Amend	Yes	
State Vehicle Fleet	New	Yes	
Electricity Sector Regulations			4.0%
Clean Energy Standard for Retail Sellers	New	No	
Generator Emissions Caps	New	Yes	
Methane Leaks from Gas Distribution System	New	Yes	0.05%
Gas Insulated Switchgear	Amend	Yes	0.01%
<b>Total</b>			<b>7.3% - 8.2%</b>

\* Electricity and transportation reductions are aggregated in this table to avoid double counting across policies.



# Electricity Sector Reductions

Source of Reductions	Estimated Reductions 2013 – 2020*
Coal Fired Power Plan Retirements (Net of gas generation increase compensating for Brayton, Salem, Mt. Tom, Pilgrim shutdowns)	- 0.2%
Renewable Portfolio Standard (RPS)	0.7%
All Cost Effective Energy Efficiency + Appliance Standards (Net of projected 2020 electric vehicle load)	2.2%
New Clean Electricity (Estimate reflects DOER supply assessment with surplus in-region RE)	1.3%
<b>Total</b>	<b>4.0%</b>

\* Assumes that natural gas generation compensates for other changes in load and generation. New MassDEP regulations would establish an emissions cap that reflects aggregate changes in emissions resulting from the policies listed above.



# Potential Sources of Clean Energy

- MassDEP is considering a Clean Energy Standard (CES) to ensure delivery of new clean energy to Massachusetts from retail suppliers
- Figures below illustrate how the stringency of a CES might be determined

Energy Source as a Percentage of Electricity Sales (i.e., Load)	2020	2030	2040	2050
RPS Requirement	15%	25%	35%	45%
MA Portion of New England REC Surplus (3 TWh)	6%	?	?	?
New Contracted Clean Energy Imports (9.45 TWh)	?	15%	?	?
New Contracted Offshore Wind (1600 MW at 50% capacity factor)	0%	?	?	?
<b>Total</b>	<b>?</b>	<b>?</b>	<b>?</b>	<b>?</b>

- Estimates are illustrative and do not account for muni load or changes in load over time
- Estimates are derived from DOER data, the 2020 CECP Update, and 2016 energy legislation



# Clean Energy Standard Overview

- MassDEP is considering a Clean Energy Standard (CES) to require delivery of additional clean electricity to Massachusetts
  - Basic approach mirrors 2015 proposal
  - Substantive requirements being reconsidered
- The CES would complement:
  - RPS\* (by capturing additional available clean energy, both RPS-eligible and ineligible)
  - Generator emissions caps (by delivering clean electricity that can avoid the need for emitting generators to operate and emit)

\* The Renewable Portfolio Standard (RPS) program is run by the Department of Energy Resources and requires the purchase of specified types and percentages of clean energy by retail sellers.



# Clean Energy Standard

## Key Concepts

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- Point of regulation - electricity sales (like RPS)
- Based on a share of annual sales, using NEPOOL-GIS\* certificates for compliance (like RPS)
- “Clean energy” includes RPS-eligible renewables and also other non-emitting technologies such as large hydropower

\* The New England Power Pool Generation Information System (NEPOOL GIS) issues and tracks certificates for all MWh of generation produced in the ISO-New England control area, as well as imported MWh from adjacent control areas.



# Clean Energy Standard Compliance Options

- CES would regulate electric distribution companies and competitive suppliers; could also regulate municipal light plants
- Regulated entities required to meet an annually-increasing percentage of retail electricity sales with clean energy
- RPS compliance (RECs) would count toward CES compliance, but additional clean energy would be required to comply with the (higher) CES percentage
- Could use NEPOOL-GIS certificates to demonstrate compliance (Clean Energy Credits or “CECs”)



# Clean Energy Standard

## Eligible Clean Generators

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- Generators qualify as “clean energy” based on an emissions threshold, such as 50% below natural gas-fired EGUs, or a list of eligible technologies
- RPS-eligible generators are qualified by DOER, but others would be qualified by MassDEP
- Eligibility limited to generators that commenced operation after a particular date
- Geographic limitations match RPS (ISO-NE and adjacent control areas)

# Clean Energy Standard Stringency

- The “standard” would be expressed as a percentage of load and set to capture:
  - Surplus RPS-eligible generation (in early years)
  - New contracted electricity imports (in the early 2020s)
  - Contracted offshore wind (in the later 2020s)
- Include banking to encourage early action?
- Include an alternative compliance (ACP) option?



# Clean Energy Standard Technical Components

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- Identical to RPS regarding:
  - Banking of unused CECs
  - Behind the meter generation, off-grid generation, and aggregation of multiple generators
  - Qualification process
  - Transmission rights for imports from adjacent control areas



# Clean Energy Standard

## Key Questions

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- When should CES take effect? Remain in effect until 2050?
- What should the annual standards be? How should they be set?
- Should there be an ACP option?
- Should municipal light plants be included?
- Should eligibility be based on technology type or an emissions threshold?
- Should eligibility be limited to “new” facilities? If so, how should “new” be defined?



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Information posted at:

<http://www.mass.gov/eea/agencies/massdep/air/climate/section3d-comments.html>

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