Connecticut Department of Energy and Environmental Protection

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

Update on Climate Change Efforts

Clean Power Plan and RGGI Program Review

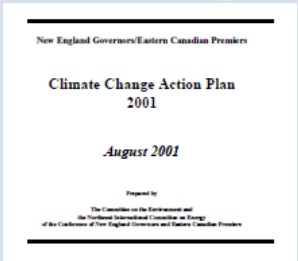
Discussion with Stakeholders

Tracy Babbidge, Bureau Chief
Energy Policy
December 10, 2015

CT Climate Action Timeline

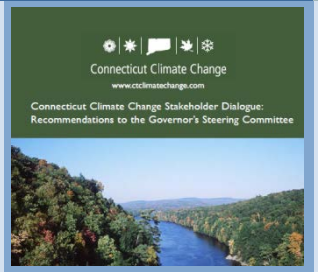
2001

CT signs the *NEG/ECP 2001 Climate Change Action Plan*



2004

Creation of Governor's Steering Committee(GSC) on Climate Change in 2002



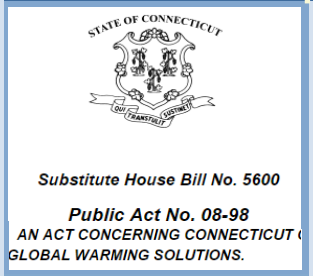
9-month stakeholder dialogue process develops the *2004 Connecticut Stakeholder Recommendations*

An Act Concerning Climate Change (Public Act 04-252) establishes CT-specific GHG goals that align with the NEG/ECP regional goals

2005

Governor's Steering Committee(GSC) on Climate Change finalizes *the CT Climate Change Action Plan* and submits to the General Assembly

2008



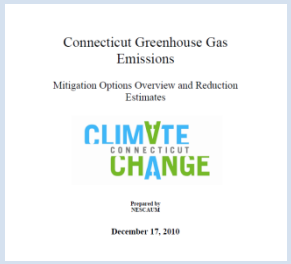
CT Global Warming Solutions Act (Public Act 08-98) reaffirms CT's commitment to GHG targets for 2020 and 2050

CT and northeastern states participate in the first auction of the Regional Greenhouse Gas Initiative (RGGI), the first cap and trade program in the nation.

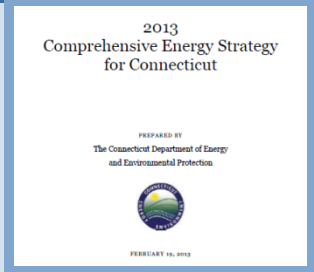
2010

GSC Adaptation Subcommittee issues the *Impacts of Climate Change on Connecticut Agriculture, Infrastructure, Natural Resources and Public Health*

CT Greenhouse Gas Emissions: Mitigation Options Overview and Reduction Estimates is published by NESCAUM



2013



2013 Comprehensive Energy Strategy released

Review timeline details

Executive Order 46 (April 22, 2015)

Governor's Council on Climate Change

Examine the efficacy of existing policies and regulations designed to reduce greenhouse gas emissions and identify new strategies to meet reduction targets

Monitor greenhouse gas emission level in CT annually

Recommend interim statewide greenhouse gas reduction targets to ensure meeting the 2050 target

Recommend policies, regulations, or legislative actions to achieve targets

Report findings to the Governor and the Office of Policy and Management

Guiding Principles

Governor's Council on Climate Change

Commitment to Analysis

Use technical expertise and analytical rigor to inform the GC3's policy deliberations and recommendations.

Commitment to Leadership

Cultivate climate leadership in state government, in the business community, in non-governmental organizations, and in municipal government.

Commitment to Accountability

Assure the effectiveness of climate programs by monitoring progress, proposing course corrections as needed, engaging stakeholders, and making the GC3's deliberations transparent.

Informed by the executive order, three overarching principles will serve as lenses for Council's deliberations and outcomes

Governor's Council on Climate Change (GC3) Members

Melody Currey
Commissioner
Department of Administrative Services

Bryan Garcia
Chief Executive Officer
Connecticut Green Bank

Arthur House
Chairman
Public Utilities Regulatory Authority

John Humphries
Organizer
Connecticut Roundtable on Climate and Jobs

Scott Jackson
Under Secretary, Intergovernmental Policy Division,
Office of Policy and Management

Rob Klee [*Council Chair*]
Commissioner
Department of Energy and Environmental Protection

Evonne Klein
Commissioner
Department of Housing

James O'Donnell
Executive Director
Connecticut Institute for Resilience and Climate Adaption

James Redeker
Commissioner
Department of Transportation

David Robinson
General Counsel
The Hartford

Catherine Smith
Commissioner
Department of Economic and Community Development

Don Strait
Executive Director and President
Connecticut Fund for the Environment

Lynn Stoddard
Director
Institute for Sustainable Energy at Eastern Connecticut State University

Katherine Wade
Commissioner
Connecticut Insurance Department

GC3 Timeline

Approximate timeline of activities

January - February

Stakeholder engagement on policy actions to analyze within the following sectors:

- Transportation
- Electric
- Buildings

(policy selection criteria: quantity of emissions reduction, economic cost/savings, & feasibility of implementation)

March - June

- Analyze selected policies and scenarios
- From analysis results, identify scenario packages for achieving GHG reductions
- Analyze macro-economic benefits of identified scenarios using REMI

Stakeholder engagement on GHG reduction scenario packages

Stakeholder engagement on voluntary actions and strategic programming

July - September

Draft "CT Climate Strategy"

October -November

Stakeholder engagement and comment on draft "CT Climate Strategy"

December 2016 – January 2017

Incorporate stakeholder comments and finalize "CT Climate Strategy"

February 2017 – beyond

Implementation of "CT Climate Strategy"

Clean Power Plan
Key Elements

What is the Clean Power Plan?

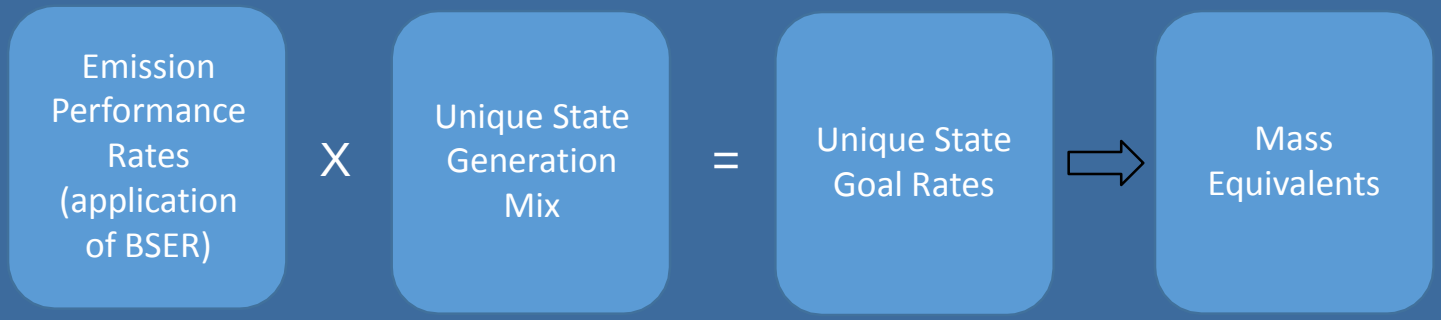
- EPA is taking three actions to reduce carbon pollution from the power sector
  - Clean Power Plan (CPP) –existing sources
  - Carbon Pollution Standards –new, modified and reconstructed sources
  - Federal Plan proposal and model rule
- These are the first-ever national standards that address carbon pollution from power plants.
- The Clean Power Plan recognizes the effectiveness of mass-based, multi-state emission reductions programs, such as RGGI

How Does the Clean Power Plan Work?

- The Clean Air Act – under section 111(d) – creates a partnership between EPA and states – with EPA setting a goal and states choosing how they will meet it.
- EPA is establishing interim and final carbon dioxide (CO_2) emission performance rates for:
  - Fossil fuel-fired electric steam generating units (generally, coal- and oil-fired power plants)
  - Natural gas-fired combined cycle generating units

Category-Specific Performance Rates

Power plants are subject to the same standards no matter where they are located.



EPA established carbon dioxide **emission performance rates** for two subcategories of existing fossil fuel-fired electric generating units (EGUs):

1. Fossil fuel-fired electric generating units (generally, coal-fired power plants)
2. Natural gas combined cycle units

Category-Specific Performance Rates

- Emission performance rates have been translated into equivalent state goals

- EPA is providing state goals in three forms:

  - rate-based goal measured in pounds per megawatt hour (lb/MWh);
  - mass-based goal measured in short tons of CO_2
  - mass-based goal with a new source complement (for states that choose to include new sources) measured in short tons of CO_2

Clean Power Plan Timeline

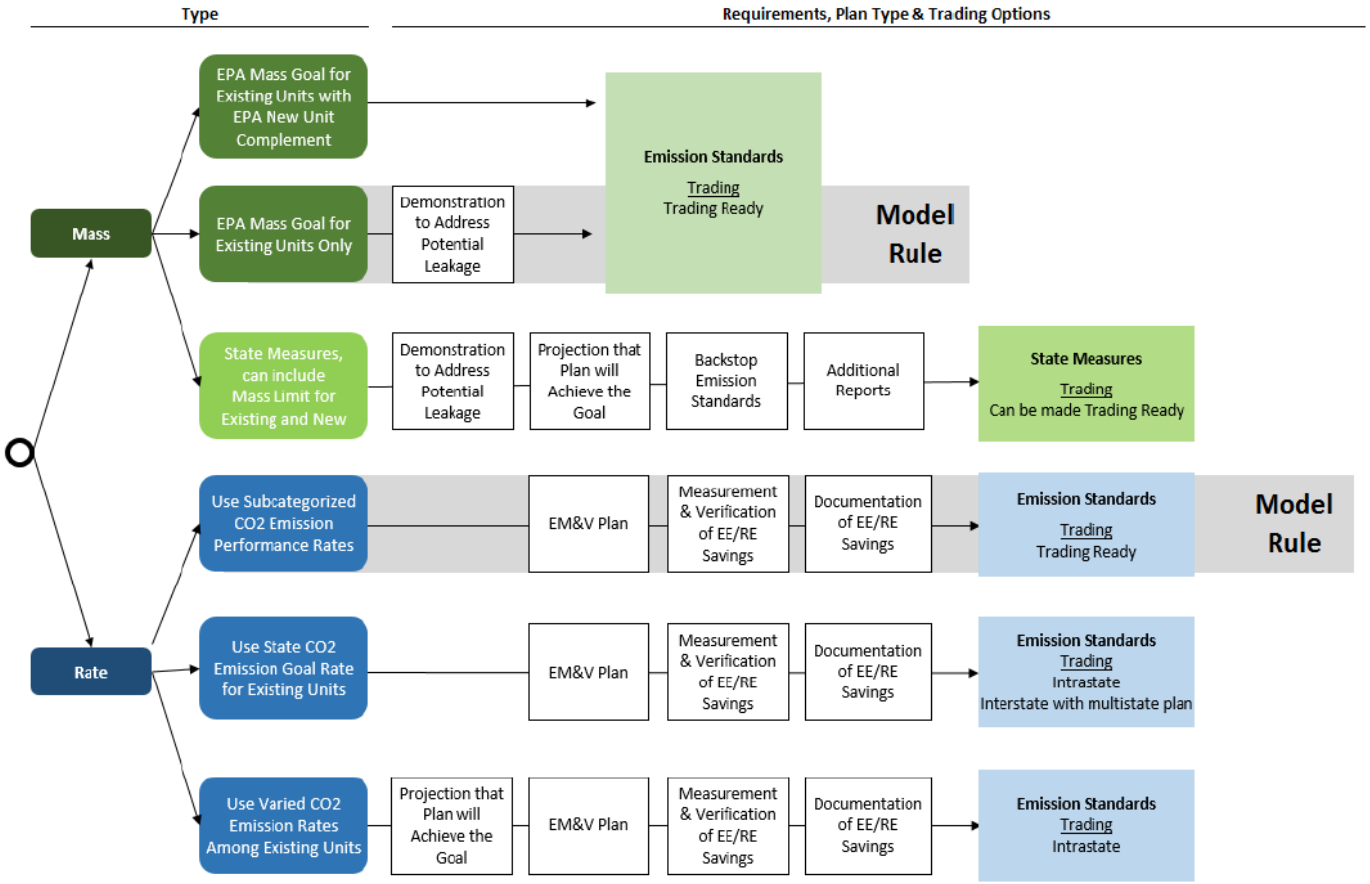
- August 3, 2015 - Final Clean Power Plan
- September 6, 2016- States make initial submittal with extension request or submit Final Plan
- September 6, 2018 - States with extensions submit Final Plan
- January 1, 2022 - Compliance period begins
- January 1, 2030 - CO_2 Emission Goals met

STATE Plan Approaches

CPP Decision Tree

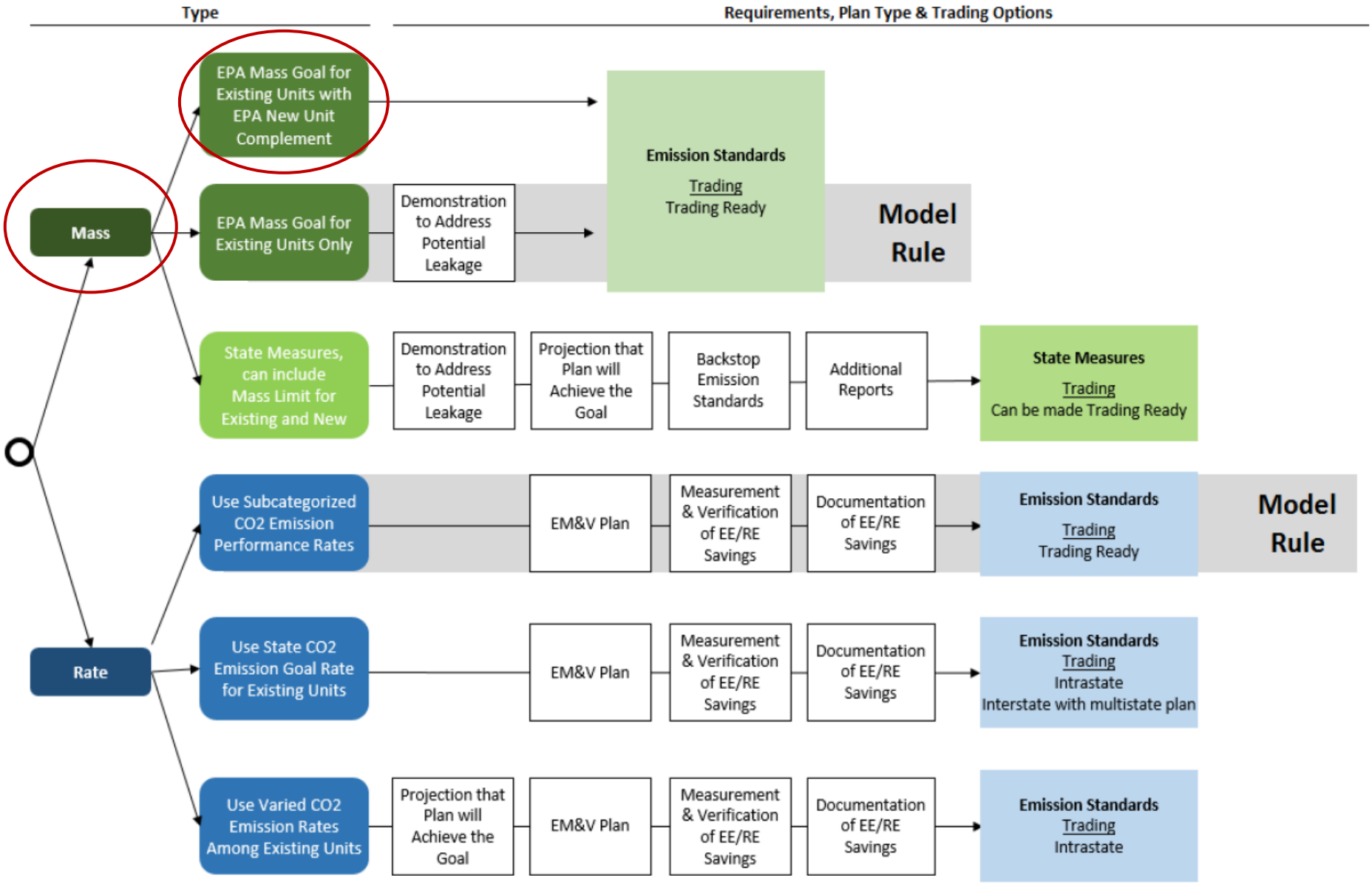
State Plans: More State Options, Lower Costs

- This chart shows some of the compliance pathways available to states under the final Clean Power Plan. Ultimately, it is up to the states to choose how they will meet the requirements of the rule.
- EPA's illustrative analysis shows that nationwide, in 2030, a **mass-based approach is less-expensive** than a rate-based approach ($5.1 billion versus $8.4 billion).
- Under a mass-based plan, states that anticipate continuing or expanding investments in energy efficiency have unlimited flexibility to leverage those investments to meet their CPP targets. EE programs and projects do not need to be approved as part of a mass-based state plan, and EM&V will not be required.
- For states currently implementing mass-based trading programs, the "state measures" approach offers a ready path forward.
- Demand-side energy efficiency is an important, proven strategy that states are already widely using and that can substantially and cost-effectively lower CO_2 emissions from the power sector.



Updated Aug. 5, 2015 5 pm

CPP Decision Tree



Two State Plans Designs

- States are able to choose one of two state plan types

Emission Standards Plan – state places federally enforceable emission standards on affected electric generating units (EGUs) that fully meet the emission guidelines
- can be designed to meet the CO_2 emission performance rates or state goal (rate- based or mass-based goal)

State Measures Plan - state includes, at least in part, measures implemented by the state that are not included as federally enforceable emission standards
-designed to achieve the state CO_2 mass-based goal
-includes federally enforceable measures as a backstop

RGGI Program Review
Co_2 Emission Reductions & Flexibility Mechanisms

How is the Clean Power Plan Different From RGGI?

- Emission Reductions
- Flexibility Mechanisms
  - Cost Containment Reserve
  - Offsets
  - Three Year Control Periods

RGGI Program Elements

States:

Connecticut, Delaware, Maryland, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, Vermont

CO_2 Emissions Cap:

88.7 million short tons in 2015, and declines 2.5% each year until 2020; two interim adjustments to the cap (2014-2020) to account for banked CO2 allowances.

Coverage:

Fossil fuel-fired power plants 25 megawatts or greater in size (currently 163 facilities region-wide)

Compliance Period:

Three years,
Jan. 1, 2009 – Dec. 31, 2011;
Jan. 1 2012 – Dec. 31 2014
Jan. 1, 2015 – Dec. 31, 2017

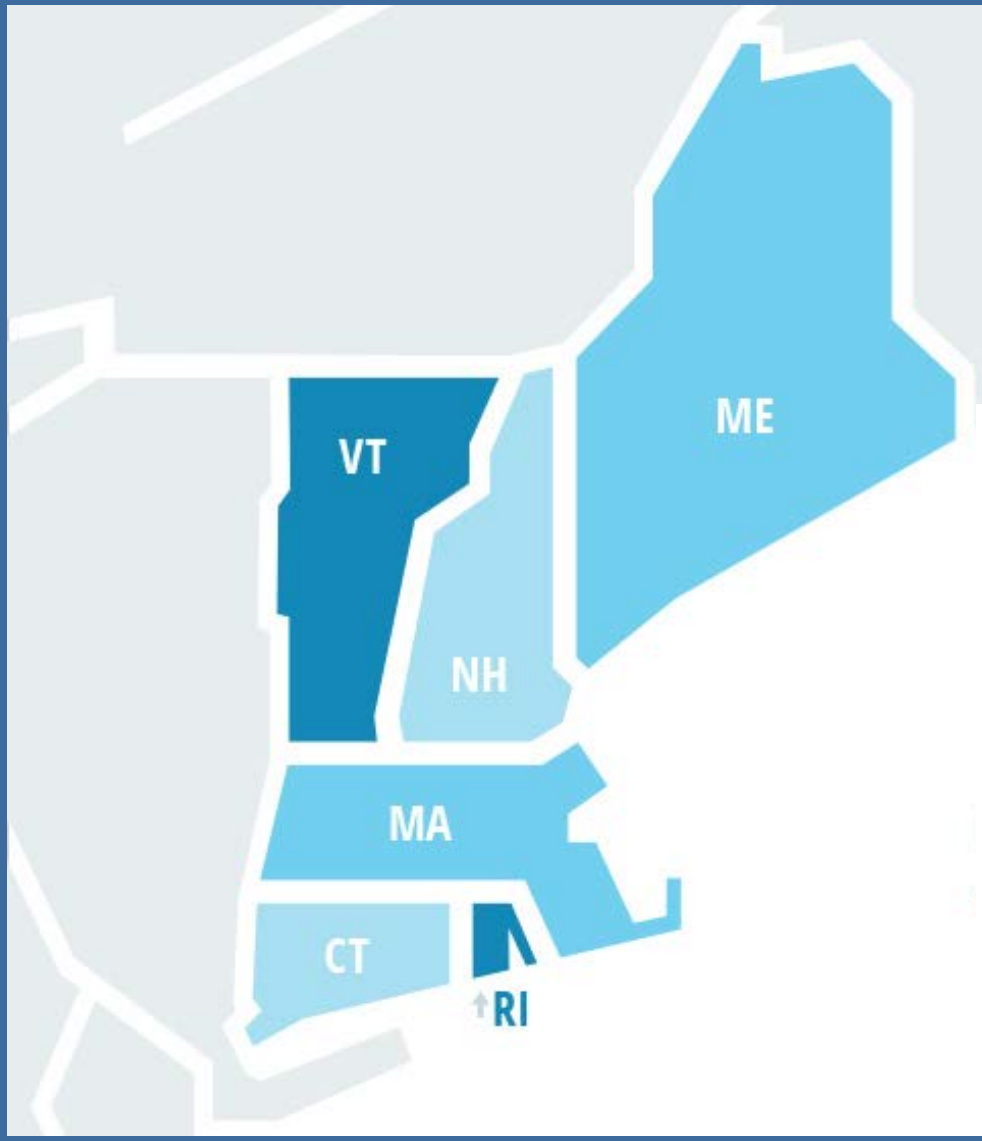
CO_2 Emission Offsets:

Qualifying GHG reduction projects outside the electricity sector. Can use to meet 3.3% of compliance obligation.

Auction Proceeds:

$2.2 billion through Sept. 2015. States reinvest auction proceeds in energy efficiency, renewables, direct bill abatement, and GHG abatement programs.

New England Grid Operations



Deregulated market operated by ISO NE

Heavily reliant on nuclear and natural gas generation

Inherently clean emissions profile in 2012, CT became the largest share of regional gross generation

CT's nuclear and gas generation fleets are base load

CT's surplus generating capacity is called to serve load in other states

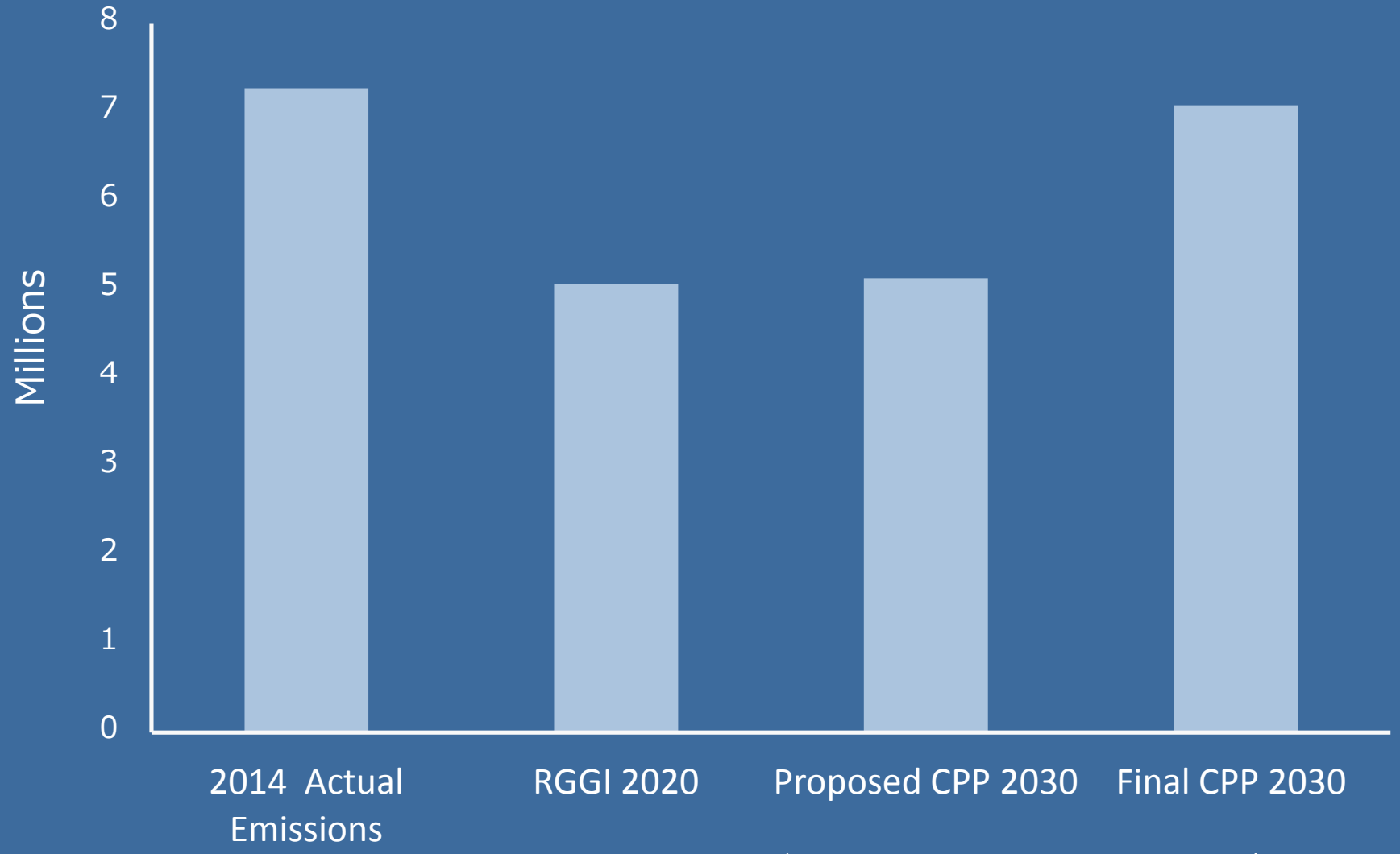
Final vs. Proposed Clean Power Plan

- Unit based Emission Standards rather than proposed System Based Emission Standards
- Best System of Emission Reduction (BSER) based on 3 building blocks rather than 4 proposed
- Less stringent limits for CT and RGGI states
- Clean Energy Incentive Program – Credit for Early Action
- Requirement to demonstrate adequate outreach conducted with "vulnerable communities"
- Reliability Safeguards

Connecticut's Interim (2022-2029) and Final Goals (2030)

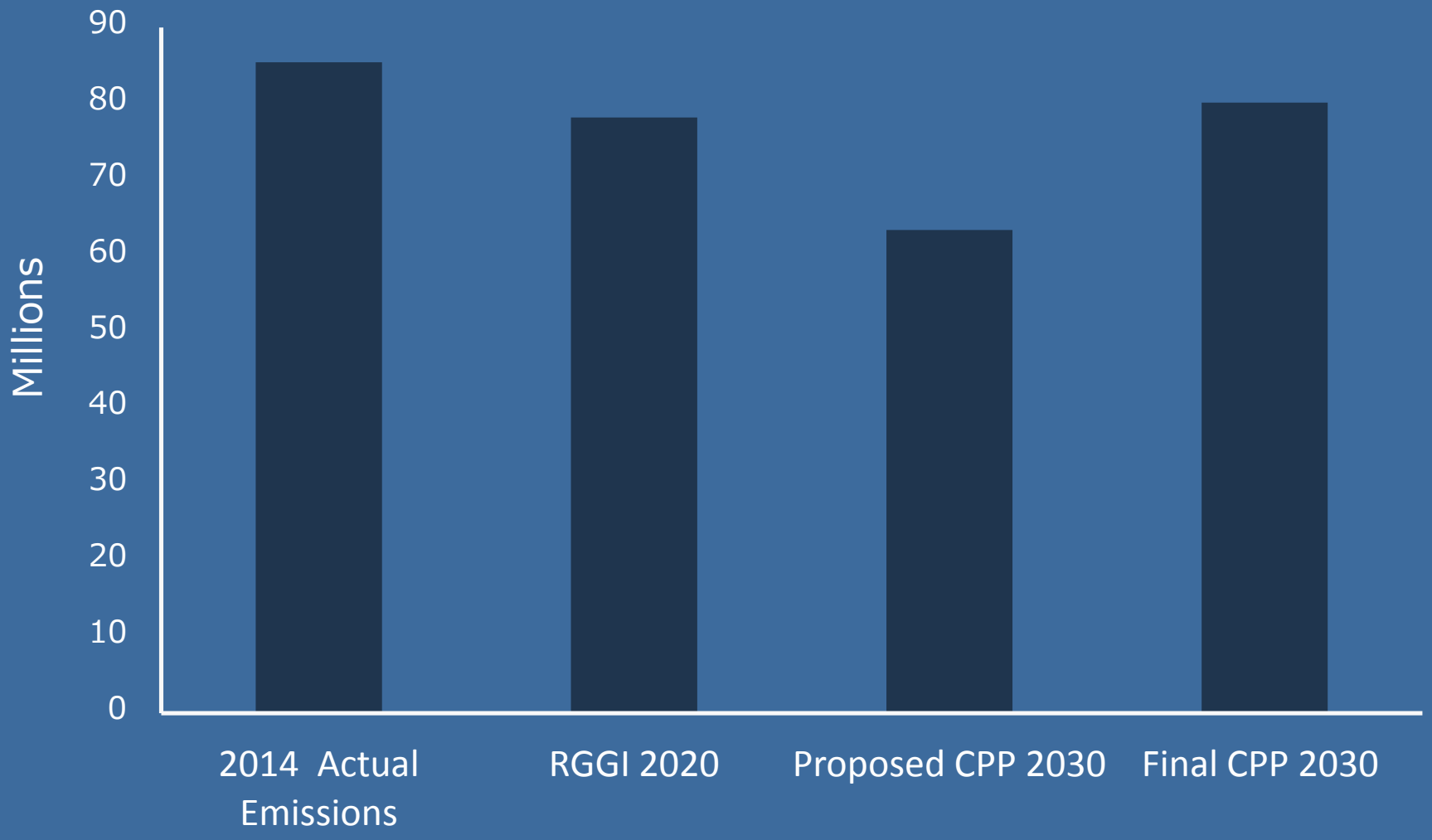
CONNECTICUT			
	CO_2 Rate (lbs/Net MWh)	CO_2 Emissions (short tons)	
2012 Historic [1]	846	6,659,803	
2020 Projections (without CPP)	858	7,819,591	
	Rate-based Goal	Mass-based Goal (annual average CO_2 emissions in short tons)	Mass Goal (Existing) & New Source Complement
Interim Period 2022-2029	852	7,237,865	7,373,274
Interim Step 1 Period 2022-2024 [2]	899	7,555,787	7,611,353
Interim Step 2 Period 2025-2027 [3]	836	7,108,466	7,295,920
Interim Step 3 Period 2028-2029 [4]	801	6,955,080	7,132,188
Final Goal 2030 and Beyond	786	6,941,523	7,060,993

CT CPP Goals (tons/year)*



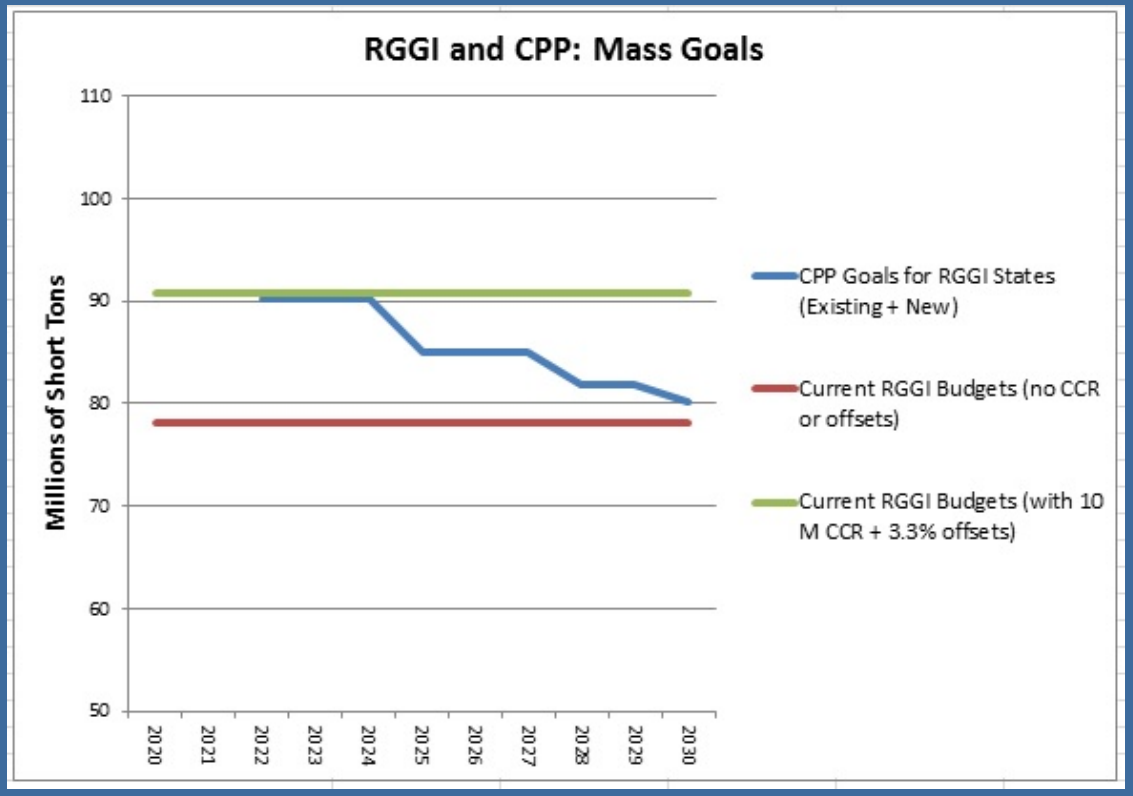
* Existing source + new source complement

Aggregate RGGI CPP Goals (tons/year)*



* Existing source + new source complement

CO_2 Emission Reductions



RGGI Allowance Cap Level and CPP

State	RGGI 2020 Cap	CPP Final Mass Goal (2030)
CT	5,061,540	7,060,993
DE	3,577,750	4,781,386
ME	2,815,382	2,109,968
MD	17,749,162	14,498,436
MA	12,617,227	12,303,372
NH	4,079,725	4,060,591
NY	30,435,778	31,718,182
RI	1,258,514	3,584,016
VT	580,137	0
Totals	78,175,215	80,116,944

Flexibility Mechanisms

- Cost Containment Reserve
  - Comments and feedback on how the CCR has worked to date and the current design of the CCR.
  - Comments on whether any of the CCR design elements should be reviewed and how the CCR and RGGI cap should work together when developing a CPP compliance pathway.

- Offsets
  - Comments and feedback on the RGGI offsets program including potential improvements, additional offset categories, acceptance of offsets allowances not generated from projects located in the RGGI states or listed on offset registries, and the continuation of the offsets program within the bounds of the CPP.

Stakeholder Discussion: Control periods & Additional Key Elements

How is the Clean Power Plan Different From RGGI?

- CPP
  - Compliance Periods
    - Three year
    - Two year
  - Regulated Sources
    - Doesn't include new units
    - Doesn't include some simple cycle units
  - Clean Energy Incentive Program

- RGGI
  - Compliance Periods
    - Three year
    - Interim control period
  - Regulated Sources
    - Includes new units
    - Includes simple cycle
  - Reinvestment of auction proceeds – EE/RE programs

Flexibility Mechanisms

- Control Periods
  - Comments and feedback on the compliance process, including the interim control periods and possible improvements to the compliance process.
  - Comments on possibly amending the non-compliance penalty from surrendering CO_2 allowances equal to three times the number of a source's excess emissions to a CO_2 allowance penalty that may better align with the CPP's requirements, or other alternatives.
  - Comments on whether the RGGI control periods should align with the CPP interim step periods. If so, suggestions for aligning with the CPP?

RGGI Control Periods and CPP

RGGI's 3-year control periods are:

2018 – 2020;

2021 – 2023;

2024 – 2026;

2027 – 2029;

2030 - 2032

EPA's periods are:

2022 – 2024;

2025 – 2027;

2028 – 2029;

2030 – 2031;

2-year periods thereafter

RGGI Offsets and CPP?

- EPA will not allow non-power sector reductions
- RGGI allows offsets for 3.3% of compliance

Eliminate use of offsets?

- State-specific decision?

Adjust goals to account for offsets?

- If EPA mass-based goal reduced by 3.3%, could EPA accept RGGI program including offsets ?

Promoting Renewable Energy and Energy Efficiency

- Given the fact that the RGGI states auction most of the CO_2 allowances, seeking stakeholder comments on whether the RGGI states should participate in the Clean Energy Incentives Program or CEIP.

Broadening the CO_2 Allowance Trading Market

- Seeking comments and suggestions on the broadening the CO_2 allowance trading market.
- Seeking comments on how the RGGI states could best pursue this option.

Next Steps-Written Comments

- Written comments are requested by 5:00 PM ET on Friday, December 11, 2015
- Please send comments by e-mail to info@rggi.org
- Written comments have been posted at http://www.rggi.org/design/2016-program-review

Next Steps-Connecticut Written Comments

- Written comments are requested by 5:00 PM on Friday, December 18, 2015
- Please send comments by e-mail to debra.morrell@ct.gov
- Written comments will be posted on the DEEP Energy Filings webpage: RGGI Program Review

Next Steps-Stakeholder Meetings

- Additional regional stakeholder meetings are anticipated.
- See schedule and other related documents here:
- http://www.rggi.org/docs/ProgramReview/2016/11-17-15/Draft_Schedule_11_17_15.pdf
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- -NS

Written Comments

Questions?