



The Clean Power Plan: Challenges and Opportunities for New York State

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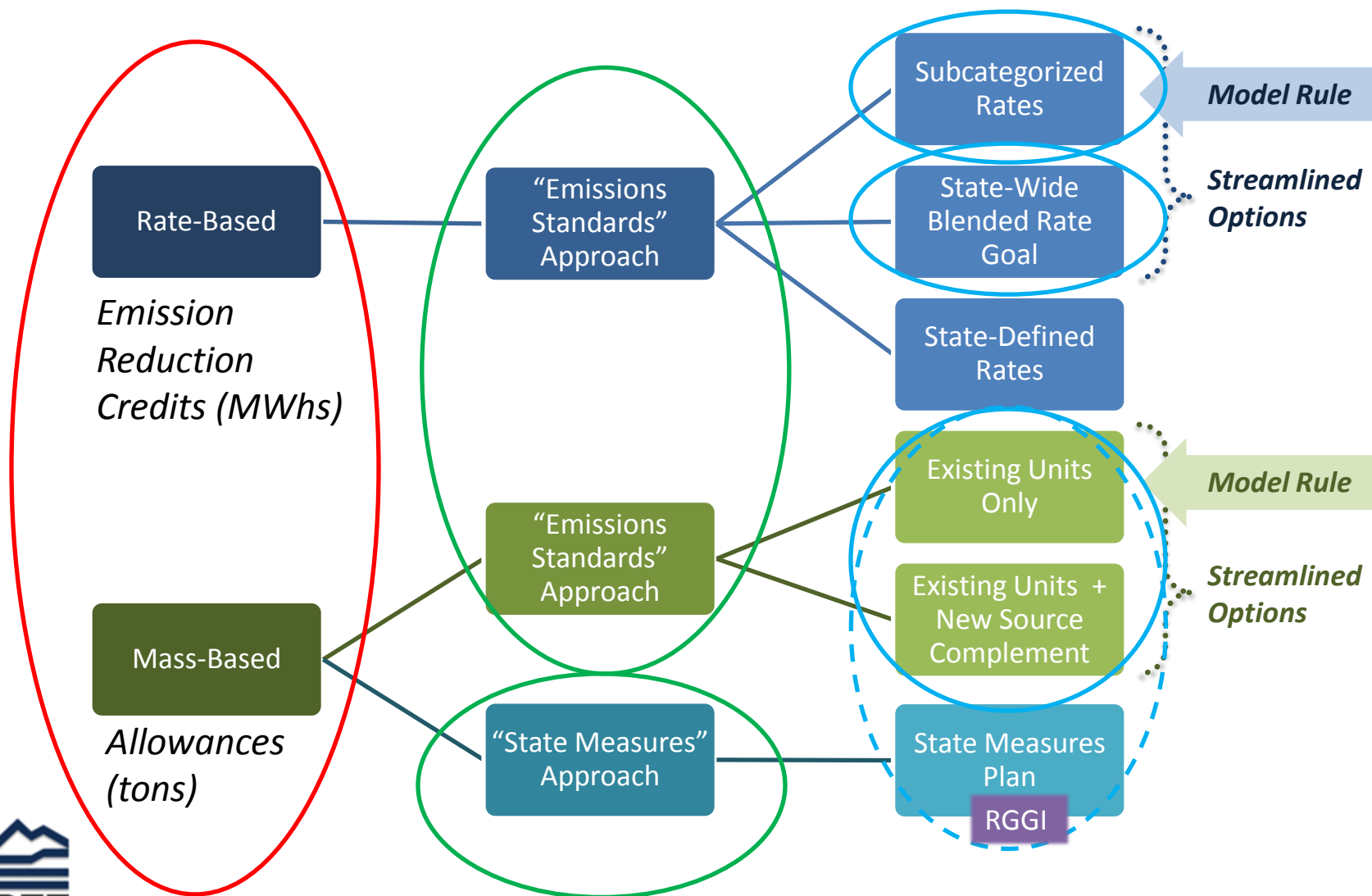
RESOURCES
FOR THE FUTURE

Where we are

- June 2013 President announces Climate Action Plan
 - Regulation of power sector under the Clean Air Act
- June 2014 release of proposed Clean Power Plan
 - Also known as § 111(d) and sets federal goals for states
 - State-based planning process to achieve federal goals
- August 2015 release of final Clean Power Plan
 - Includes *proposed* Federal Plan / Model Rule
- States have one year to indicate planning approach and until 2018 to develop plan
- Compliance begins in 2022
 - Expected 32% GHG emissions reduction from 2005 by 2030

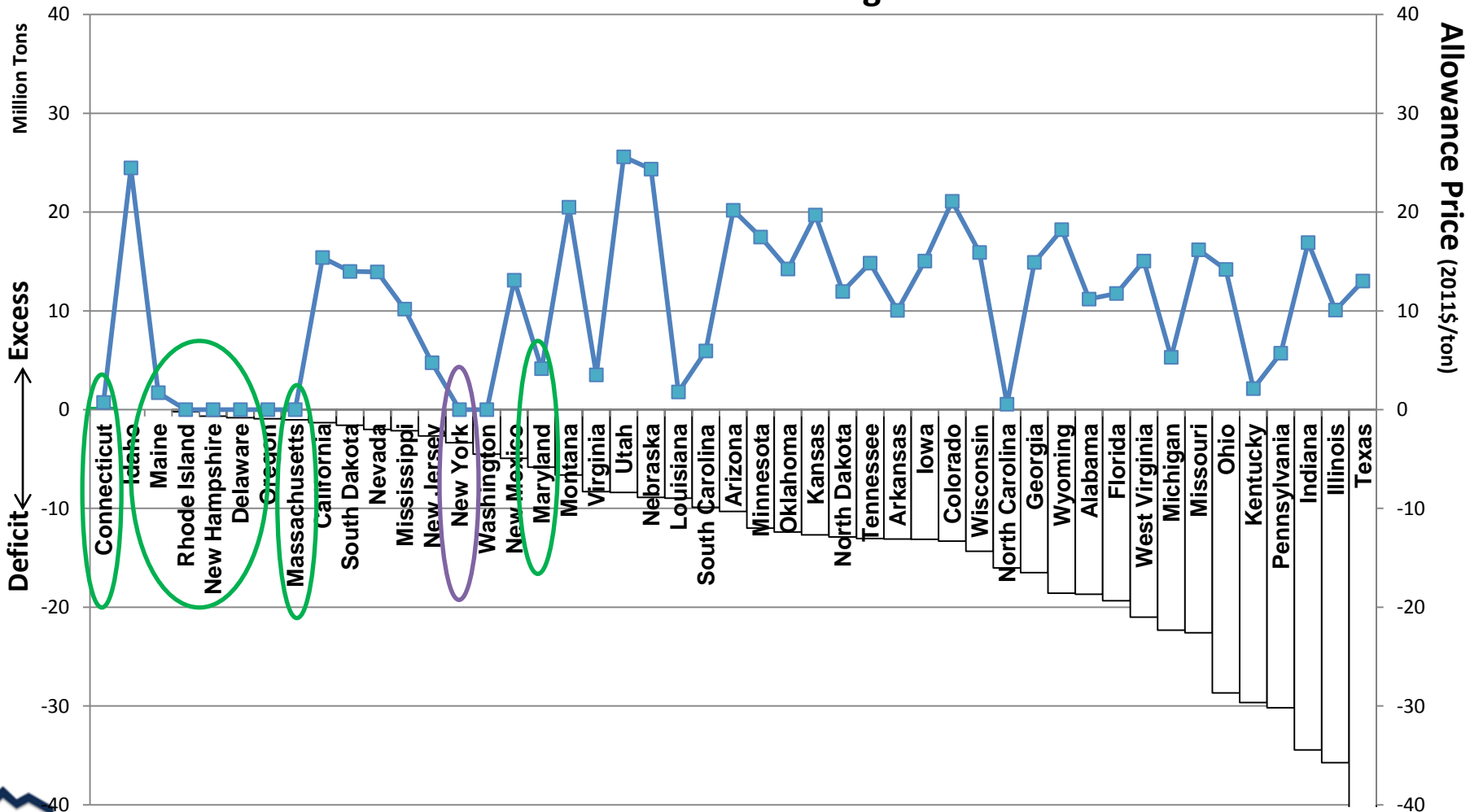


State Plan Options



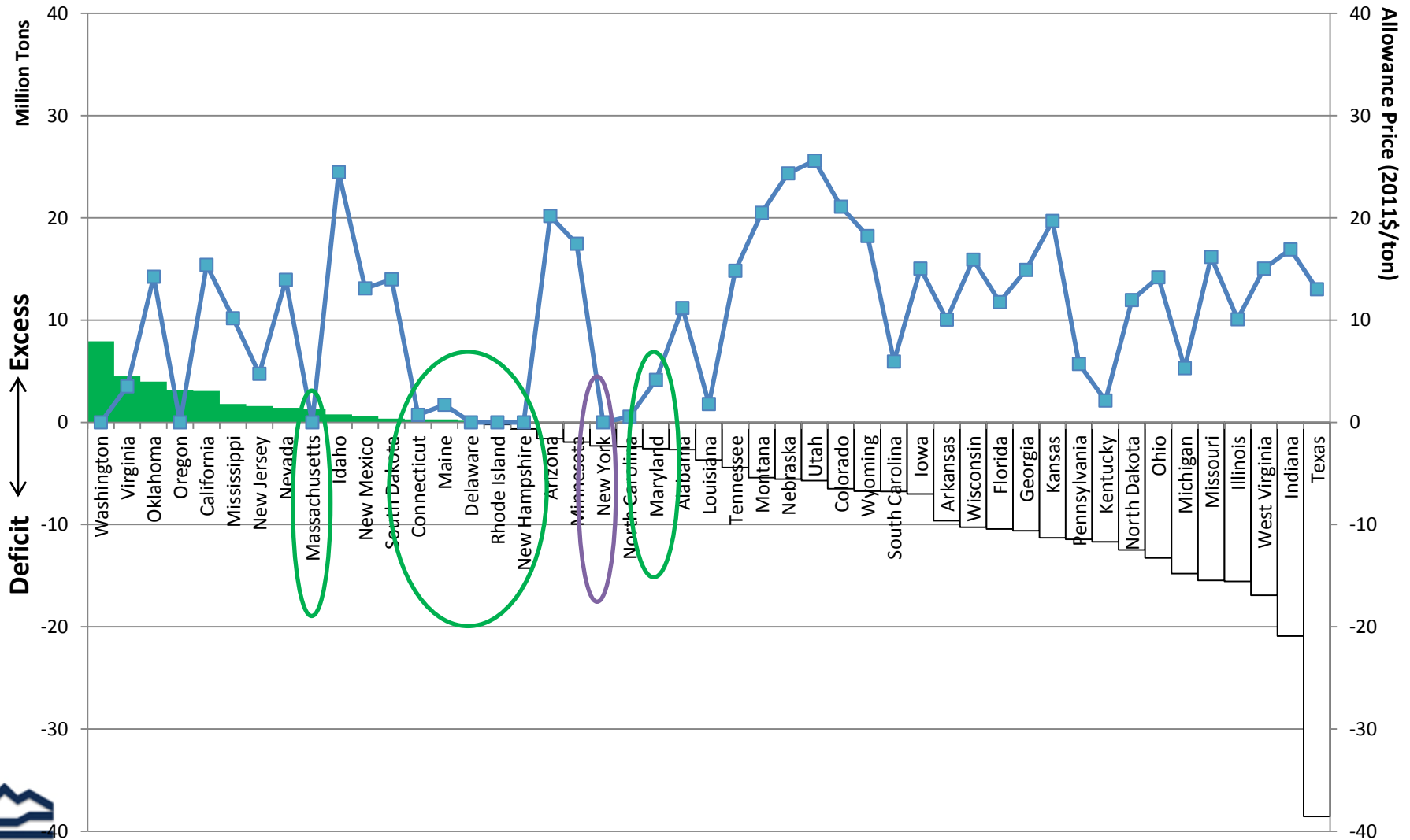
The State Level CPP Compliance Challenge in Mass Based World for Existing Sources

Comparison of 2012 emissions from covered sources and 2030 mass-based goals



Sources: emissions reductions from EPA's CPP TSDs and allowance prices from EPA's IPM RIA runs.

The State Level CPP Compliance Challenge in Mass Based World – Updated and Reordered



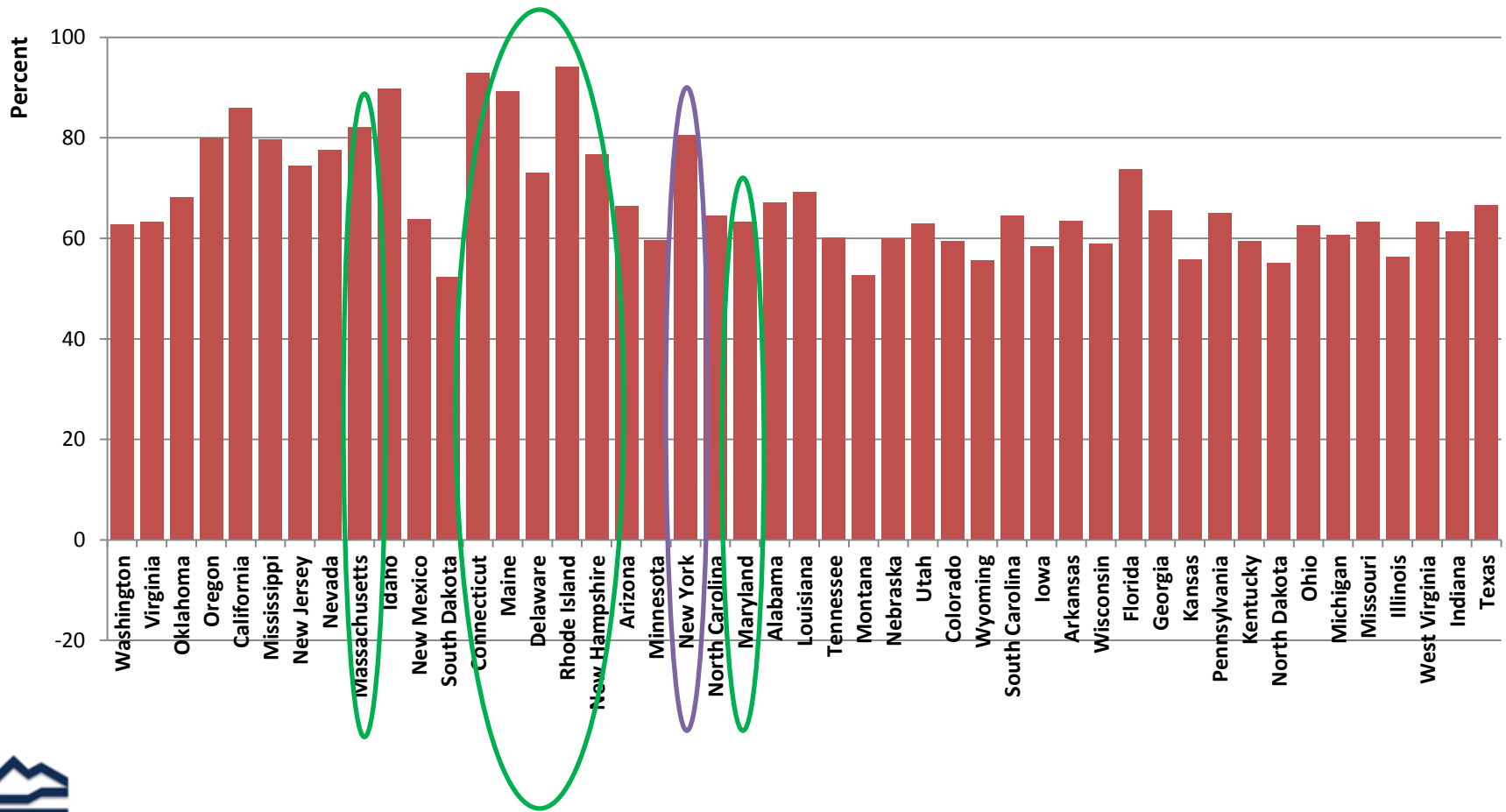
Sources: emissions from MJ Bradley and allowance prices from EPA's IPM RIA runs.

Features and Advantages of a Rate Based Approach

- Compliance instrument is Emission Reduction Credit (ERC)
 - Denominator of emissions rate to be compared to EPA goal
 - Goals: gas: 877 - 771 (lbs/MWh) / fossil steam: 1671 - 1305 (lbs/MWh)
- Creates an incentive for ERC generating activities including:
 - Generation by covered generators with low emissions rates;
 - Generation from new (post 2012) renewables delivered to rate based state in 2022 and beyond
 - Generation from new (post 2012) nuclear in 2022 and beyond
 - Energy savings from (post 2012) end-use EE
 - Energy savings from T&D upgrades
 - CHP and biomass co-firing
- Existing gas can get more than one ERC per MWh (gas shift ERCs)
- Rate does not “limit growth” as mass might do
 - Rate goal applies to existing generators only (for now)
 - Proof is in the numbers; rate goal could be tougher than mass

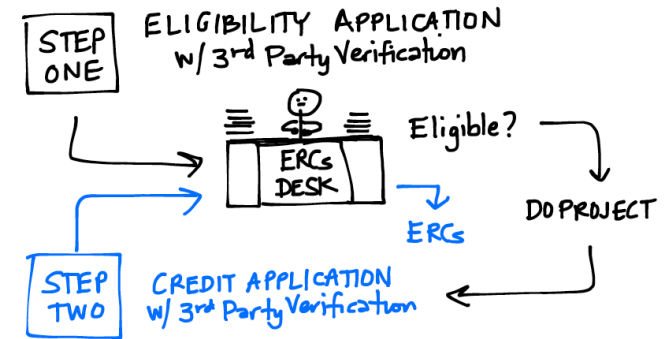
The State Level Compliance Challenge in Rate Based World

Final Blended Emissions Rate Goal Compliance Ratio for Existing Sources (Percent of 2012 Emissions Rate)



Challenges of a Rate Based Approach

- ERC generation process is complex
 - Eligibility determination first
 - EM&V and certification after the fact



(Picture from Franz Litz)

- ERC trading could be limited
 - If many states go mass as no trading between mass and rate
 - Sources in blended rate states and in sub cat rate states cannot trade
 - Different EM&V approaches raise concerns for EE ERCs
 - Use limits on gas shift ERCs (probably not meaningful constraint)
- Buyer liability for ERCs
- Uncertainty about ERC availability
- Regulators find ERC trading confusing

Features and Advantages of a Mass Based Approach

- Compliance instrument is emissions allowance (tons)
 - NY Regulators are familiar with mass based approaches
- EPA goals for existing sources are not difficult for NY
- Emissions allowances offer explicit opportunity to direct value
 - Value can be used to advance program related activities (fund EE, RE)
 - New York has experience with using allocation this way
- State measures approach, like RGGI, can be deemed trade ready by EPA
- Has low administrative costs compared to rate
 - Measure emissions and adopt existing allowance registry
- Preferred by energy markets because all sources treated similarly
 - Allowance market addresses reliability concerns
- Provides easier transition to economy-wide climate policy

Challenges of a Mass Based Approach

- State measures approach not automatically trade ready
 - But EPA wants RGGI to be
 - What assurances will be needed?
- Must decide how to treat new sources. In or out?
 - RGGI includes all sources
 - New source complement is very small for New York
 - But New York State Energy Plan is ambitious
 - Retiring nuclear generation in NY raises potential concerns
 - Excluding new sources from cap raises leakage concerns
- If states do not cover new sources they must have **renewable set aside** and **updating output based allocation** to existing gas
 - Requirement part of proposed model rule/federal plan -- not yet final.



Another Choice: Initial Distribution of New Asset Value

- ❖ Rate approach assigns ERC credits (MWhs) to production
- ❖ Mass approach assignment of allowances (tons) up to state
- Initial distribution of allowances: Free or payment?
 - If free,
 - Grandfathering to emitters
 - Updating to generators (output based allocation - OBA)
 - Consumers (through the local distribution companies)
 - Significant interaction with regulatory structure
- Free implies compensation. To whom?
 - Grandfathering leads to windfalls to stock holders
 - Updating to generators (OBA) or allocation to consumers leads to shared compensation of consumers and producers

A general concern among economists – *Leakage*

Leakage to new sources may result if they are not included in the program

Leakage among states may occur if production incentives differ

- A rate-based approach inherently provides a production incentive in the assignment of ERCs to generation
- *A Proximate Mirror* (2015) describes targeted updated output-based allocation
 - States can mimic the production incentive of an emissions rate target under a mass-based program
 - Leakage among states can be mitigated or reversed -- negative leakage could result

Offering a Production Incentive with Allocation

Generator Type		Rate (existing sources)	Mass (existing sources) With Auction or Grandfathering	Mass (existing sources) With Example Updating OBA
Fossil	Coal	X		
	Existing Gas/Oil	X		X
	New Gas		implicit	implicit
Renewables	Existing			
	New	X		X
Nuclear	Existing			
	New	X		X
Hydro				
End Use Efficiency		X		

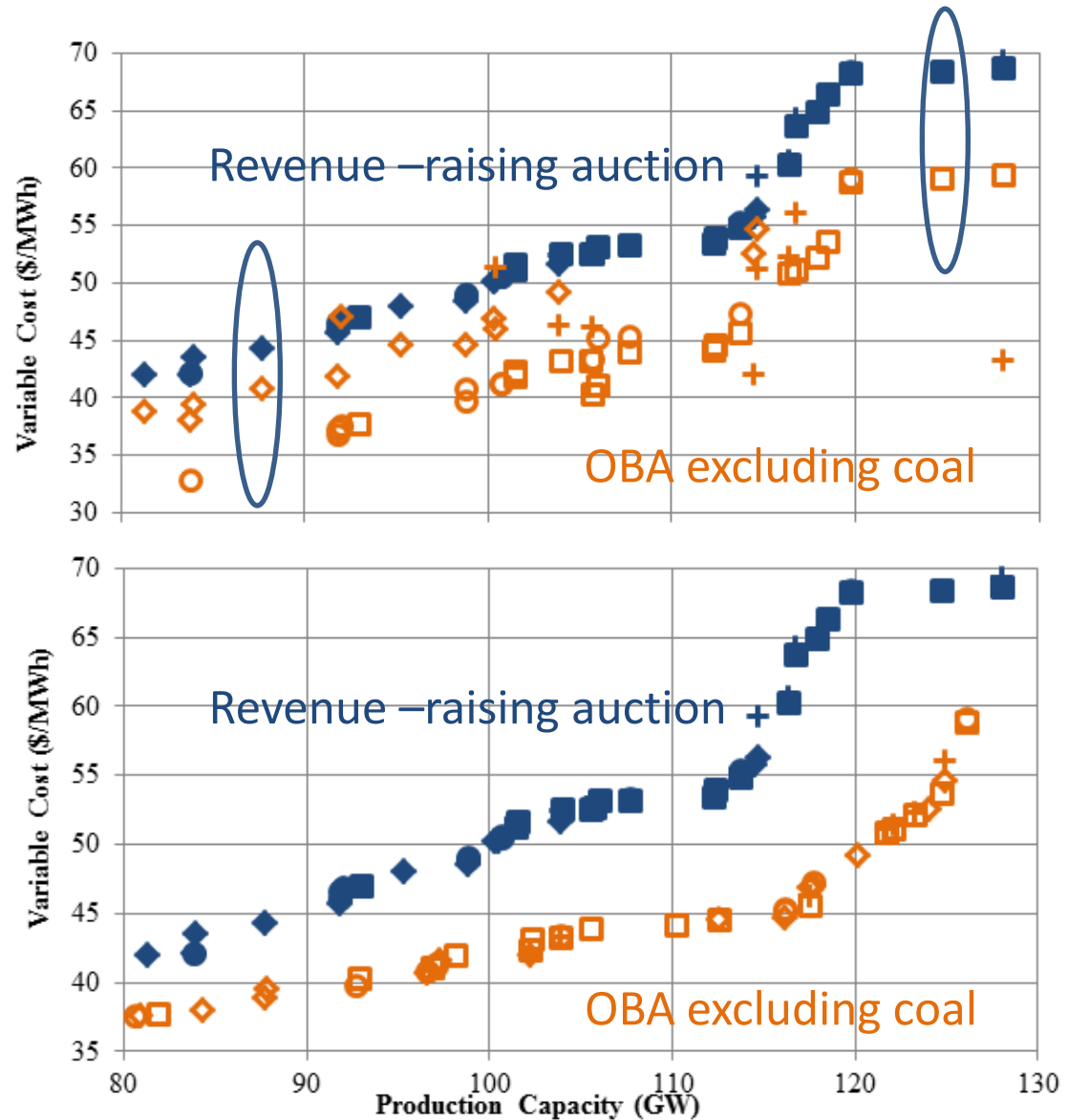
- Production incentives under mass-based system can solve both types of leakage: to rate-based states and to new gas units

Production incentive affects the merit order dispatch

Revenue-raising auction compared with updating OBA-excluding coal

Before reordering

After reordering different technologies are pulled into service

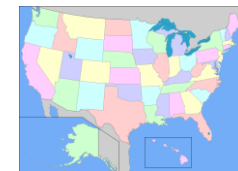


CPP Allowance Trading Beyond RGGI

- Should states with excess CPP allowances participate in interstate trading?
 - This is a state-level decision under CPP
 - Governor Cuomo's declaration of intent to join forces with CA
- New York CPP allowance sales outside RGGI create emissions leakage
 - Emissions reductions below the cap used by sources in other states
 - New York gets allowance revenue and other states get cost relief
- Under CPP, states can go trade ready or designate trading partners
 - Create a separate registry
 - Pick particular trading partners to join
- New York (RGGI) may want to use excess CPP allowances to influence program design in other states

To Trade
or
Not to
Trade

RGGI



Conclusions

1. New York is in a good position to comply with mass-based CPP targets as are the RGGI states collectively.
2. Other states may want to join RGGI / trade with RGGI states to gain access to low cost allowances under the CPP.
3. CPP has implications for RGGI review and design of RGGI program going forward.
4. NY CPP plan should anticipate future state energy and climate policy.



Thank you!