RPS Summit

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Clean Power Plan: Implications for State Renewable Portfolio Standards

ED HOLT
& Associates, Inc.
Energy Smart Consulting

28 Headland Road
Harpswell, ME 04079
Tel. 207.798.4588
edholt@igc.org

What the CPP Does: Overview

- Sets CO2 emission rates for existing power plants
  - Coal 1305 lbs/MWh in 2030
  - Natural gas 771 lbs/MWh in 2030
- Statewide maximum emissions rate and an equivalent mass emissions target
- Best System of Emission Reductions (BSER):
  - Heat rate improvements at affected EGUs, switching to natural gas, and renewable energy
- First compliance year is 2022, reaches max in 2030

Rate-Based and Mass-Based

- Rate-based goals (lbs/MWh)
  - Achieved by reducing emissions for the same output or by acquiring emission rate credits (ERCs)
  - ERCs are issued for zero emission MWh from:
    - Shifting coal to gas and lowering emissions below an expected amount
    - EE, incremental nuclear, CHP and Waste Heat Power
    - RE (defined as wind, solar, geothermal, hydro, wave and tidal, qualifying biomass)
  - Only projects built after 2012 are eligible to be issued ERCs
- Mass-based goals (tons)
  - Achieved by reducing total emissions from affected EGUs or by acquiring allowances
    - Allowance budget is set by mass-based goal
    - States can decide how to allocate allowances

Role of RPS in CPP Compliance

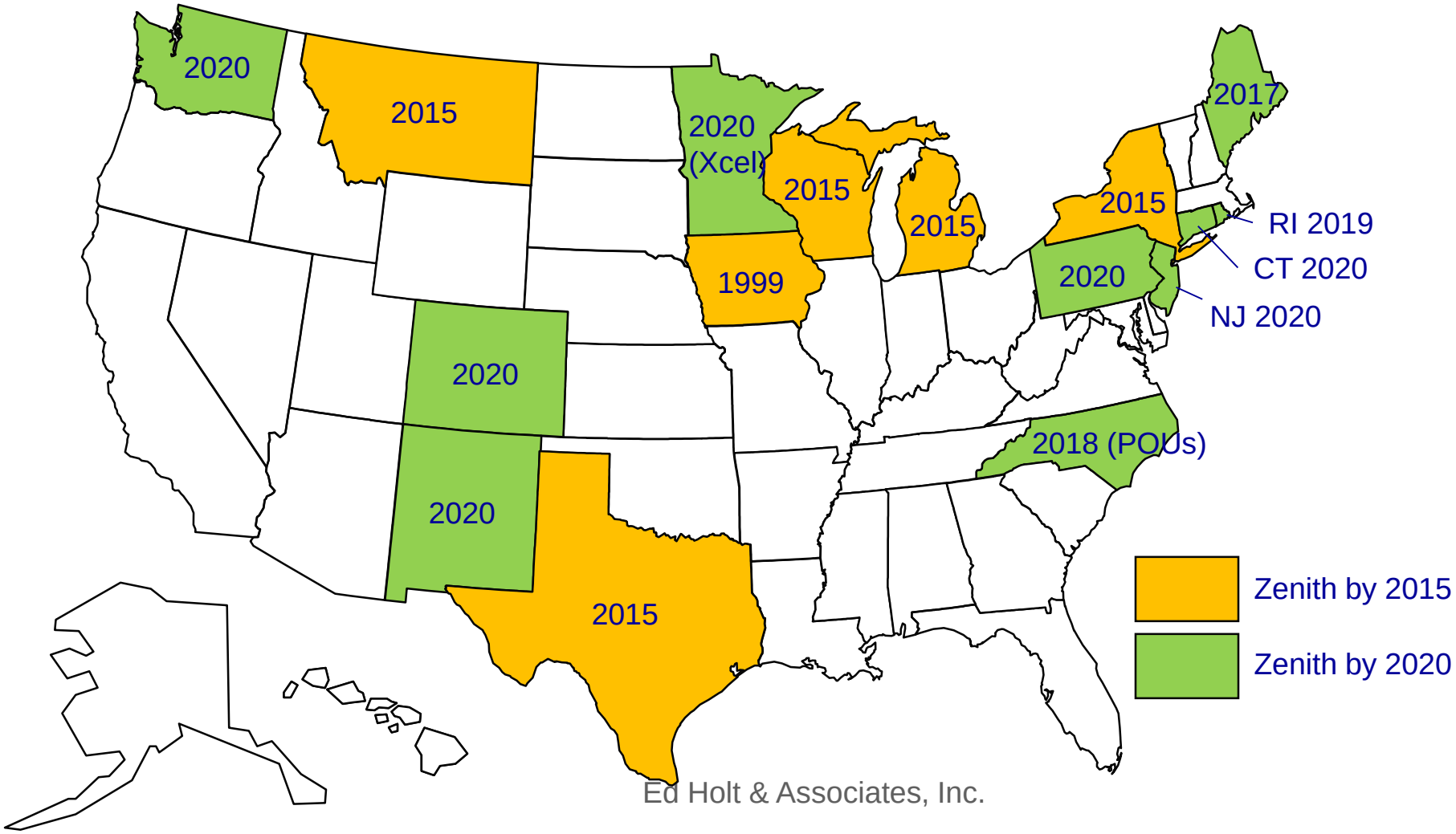
- RPS can help states reduce emissions by displacing emitting generation
- States with RPS are better positioned to achieve low-cost compliance
- States might decide to keep or even strengthen their RPS because the state will need a plan to comply with CPP emission reduction targets

What Can States Do?

- 16 state RPSs reach their zenith by 2020
- Those states have a choice:
  - Let the RPS maintain its maximum level indefinitely (or sunset, if the RPS law ends abruptly); or
  - Strengthen their RPS to make it easier to meet their CPP emission targets
- The choice depends on how a state believes it can best meet its CPP targets. Options include:
  - Increase or extend their RPS
  - Adopt new RPS
  - Stimulate more RE in some other way
  - More energy efficiency
  - Rely on existing or revised cap-and-trade program
  - Switch coal to natural gas
  - Improve heat rate at coal plants or other plant efficiencies

RPS Zenith

CPP compliance period: 2022-2030



State Measures Approach

	Rate-based	Mass-based
Emission standards approach	**Obligation on affected EGUs**	**Obligation on affected EGUs**
State measures approach	N/A	State-enforceable measures* applied to entities other than affected EGUs, plus any federally enforceable emission standards the state chooses to impose on affected EGUs

No need to describe complementary measures such as RPS

e.g., RPS

* State measures will lead to reductions in emissions by affected EGUs

RPS in State Measures Approach

- State plans using this approach must:
  1. Identify the state's mass goals for each period
  2. Identify federally enforceable emission standards for affected EGUs (if applicable)
  3. Describe all proposed state enforceable measures
  4. Document the applicable state laws or regulations related to such measures
  5. Identify the entities implementing or complying with such state measures
  6. Describe how the measures will help achieve the state mass-based emissions goal
  7. Document the schedule and milestones for the implementation of the state measures, showing that the measures are expected to achieve the mass-based CO2 emission goal for the interim period (including the interim step periods) and meet the final goal by 2030
  8. Demonstrate, for EE and RE programs, that the minimum EM&V requirements in the emission guidelines apply to those programs and projects as a matter of state law
  9. Demonstrate that each state measure is quantifiable, non-duplicative, permanent, verifiable and enforceable
  10. Identify backstop of federally enforceable emission standards (trigger)

Rate-Based Compliance (ERCs)

- RECs play no role in compliance
- EPA created a new tradable instrument called emission rate credits
  - ERC = One MWh with zero emissions
  - Used for compliance with a rate-based plan
- Example:

$$\frac{\text{Emissions (tons)}}{\text{Generation (MWh)}} = \text{actual rate } \frac{\text{lbs}}{\text{MWh}}$$

$$\frac{\text{Emissions (tons)}}{\text{Generation (MWh) + ERCs (MWh)}} = \text{adjusted rate } \frac{\text{lbs}}{\text{MWh}}$$

ERC Eligibility Rules

- For the CPP, EPA defines renewable resources as wind, solar, geothermal, hydro, wave and tidal
  - "Qualified biomass"[1] is also eligible for ERCs
  - And biogenic portion of waste-to-energy
- Other providers may be issued ERCs (e.g. EE, gas shift, incremental nuclear), but these are less likely to overlap with RPS eligibility
- Only generation from eligible renewable types that comes from post-2012 vintage generators
- ERCs are issued only for generation that occurs in 2022-2030
  - RE generators that commence construction after a state's final plan is adopted may be eligible for early credit—ERCs or allowances—for generation that occurs in 2020-2021

[1] Qualified biomass means a biomass feedstock that is demonstrated as a method to control increases of CO2 levels in the atmosphere.

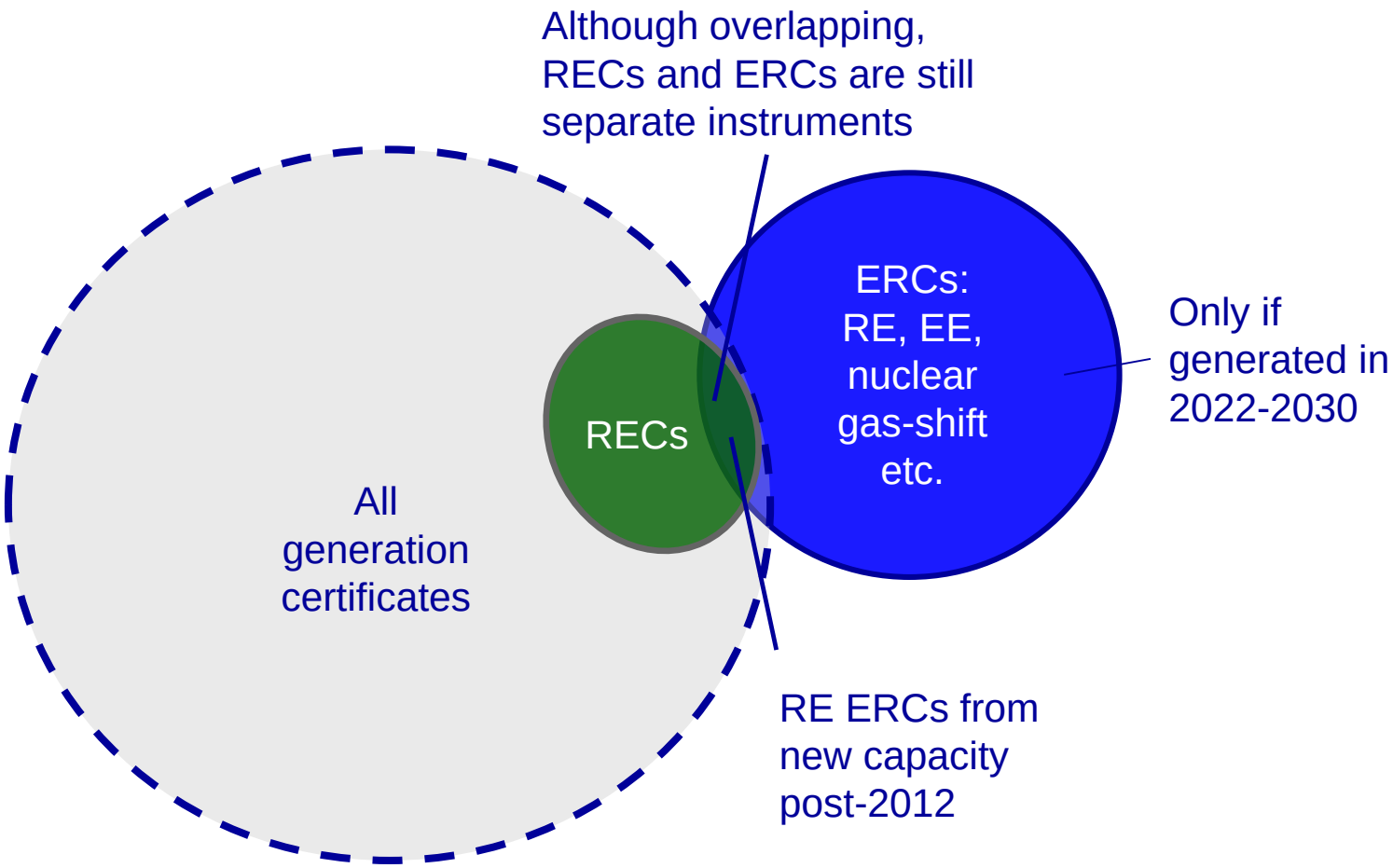
Double Counting?

- Issuing ERCs and RECs from the same MWh is not double counting
  - RECs and ERCs are separate and distinct instruments
  - REC is the basis for environmental claims
  - ERC is a compliance instrument only, representing a zero-emission MWh
  - A compliance claim is not an environmental claim
- EPA doesn't believe ERCs are double counting RECs
  - "This does not mean that measures used to comply with an emission standard cannot also be used for other purposes. For example, a MWh of electric generation from a wind turbine could be used by an electric distribution utility to comply with state RPS requirements and also be use by an affected EGU [to] comply with emission standard requirements under a state plan." (Preamble p. 977)

Voluntary Markets

- A key part of the voluntary market is credibility—knowing that your purchase is making a difference above and beyond what is otherwise required ("regulatory surplus")
- If the same MWh is used for issuing ERCs and RECs, the voluntary REC buyer is not adding to the stock of emission-free MWh
  - The purchase of such a REC is not "above and beyond"
  - May have a chilling effect on the voluntary market

RECs and ERCs



Possible Voluntary Market Strategies for Rate-Based Plan

- Buy and retire both a REC and an ERC (they don't have to be from the same generator)
- Buy RE from generators located in mass-based states that don't use ERCs (if allowances can be retired under a Voluntary RE set-aside)
- Buy RE from generators that attest they have not applied for ERCs (e.g. onsite)
- Buy renewable energy that is not eligible for ERCs (e.g. generated before 2022 or after 2030)

Possible Voluntary Market Strategies for Mass-Based Plan

- Buying RE from generators located in mass-based states won't affect emissions unless allowances can be retired
  - Buy allowances and retire them or
  - Ensure that allowances are retired under a Voluntary RE (VRE) set-aside
  - RGGI states and CA have a VRE set-aside
  - EPA's proposed mass-based model rule doesn't have a VRE set-aside
  - The RE community should comment on that

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Selection of Tracking Systems

- CPP requires states to designate a tracking system for their state plan. Options:
  - EPA-administered tracking system (ATCS)
  - EPA-approved state or regional tracking system
- Tracking choice influenced by whether state proposes rate-based or mass-based plan because:
  - Rate-based relies on reported MWh for the creation of ERCs—the same as existing REC tracking systems
  - Mass-based relies on allowances—not dependent on MWh

Tracking System for ERCs

- For tracking ERCs, the advantage is with existing REC tracking systems, because:
  - States can use the same system for tracking both ERCs and RECs
    - EPA tracking is for ERCs and/or allowances only, not for RECs, so states with RPS (or electricity labeling policies that rely on certificate tracking) will still need REC tracking—a duplication of effort
  - With existing tracking systems, generation data need only be submitted and verified to one tracking system—the same tracking system that will also be issuing RECs
  - Maintaining and managing accounts in two systems will impose extra cost on generators and market participants such as utilities and LSEs that want both ERCs and RECs, not to mention voluntary RE buyers

Tracking System for Allowances

- For tracking allowances, the advantage is with the EPA-administered system (or an existing allowance tracking system) because:
  - Issuance is not based on generation from eligible resources, so there is no natural affinity for allowances to be tracked by existing REC tracking systems
  - Allowances are created according to the emission targets (allowance budget) for each state that submits a mass-based plan, and the states can distribute their allowances to affected EGUs as they see fit

Both EPA and the Existing REC Tracking Systems Will Have to Make Modifications

- For ERCs:
  - Existing REC tracking would have to accommodate affected EGU plant efficiencies, gas-shift ERCs, incremental nuclear, energy efficiency
  - EPA will have to build totally new functionality for generation qualifying for ERCs--AND will have the much bigger task of obtaining generation data from ISOs and generators
- For allowances:
  - EPA will have to segregate state-by-state or mass-based regions
  - Existing REC tracking systems would have to build totally new functionality
- Once approved in a State plan, an ERC tracking system may transfer ERCs to/from other EPA-approved ERC tracking systems, including an EPA-administered ERC tracking system used to administer a federal plan

Conclusions

- RPS can help states meet their CPP goals
  - RPS can be a silent complementary measure—doesn't have to demonstrate cause-and-effect
  - RPS can be a stimulus to create RE generation that is eligible for ERC issuance in a rate-based state
  - RPS can be used to relax EGU emission goals if properly described in a mass-based "state measures" plan
- RECs and ERCs are two different things—no double counting

Advice

- States should decide what approach they will use for compliance, then decide how to achieve emission goal. Among the options they should consider are:
  - Increase stringency of existing RPSs while extending targets to at least 2030
  - Adopt new RPS as a known, effective tool to motivate new renewable generation
- States will also need to think about their ERC tracking options, and whether it makes sense to go with an existing tracking system (with modifications) or to adopt the EPA-administered tracking system
  - Talk (ASAP) with existing tracking systems about your needs and what they're willing to do

Acknowledgements

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