

# EPA Clean Power Plan & the Role of Wind

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# U.S. Energy Sector Risks

(regulator and/or utility perspective)

- Retiring coal
- Defaulting to gas
  - Concerns about volatility
- Regulatory uncertainty
- Potential nuclear retirements
- Uncertain demand growth
- High capital expenditures
- Intermittent renewable generation (rooftop solar)
- CO<sub>2</sub> regulations
- Infrastructure planning for drought and extreme weather

# Risk Mitigation Strategies

- Demand response/energy efficiency
  - Delay major capital investments
- Dynamic pricing, smart grid options
- Renewable generation
- New/emerging technology
- New nuclear(?)
- Increased dispatch of existing coal

# GHG Reduction Strategies

- Energy efficiency
- Renewable energy
- Emission averaging/trading
- Retire high emitting facilities
- New technologies

## Electricity sector risk

- Demand response/energy efficiency
- Dynamic pricing, smart grid options
- Renewable generation
- New/emerging technology
- New nuclear(?)
- Increased dispatch of existing coal

## Power sector GHG reductions

- Energy efficiency/reduce demand
- Renewable energy
- Emission averaging/trading
- Retire high emitting facilities
- New/emerging technologies
- New nuclear (?)

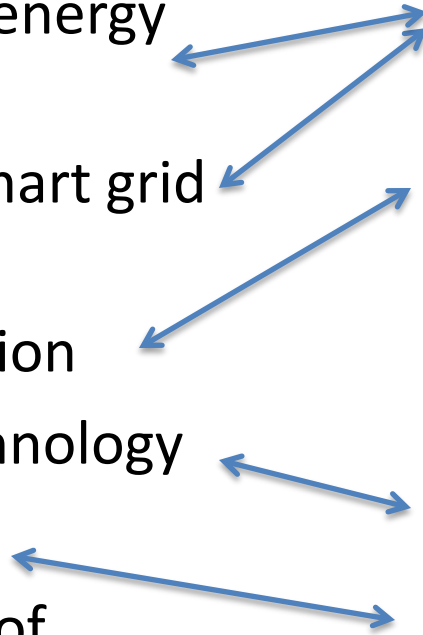
# Multi-benefits

## Electricity sector risk

- Demand response/energy efficiency
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- Renewable generation
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## Power sector GHG reductions

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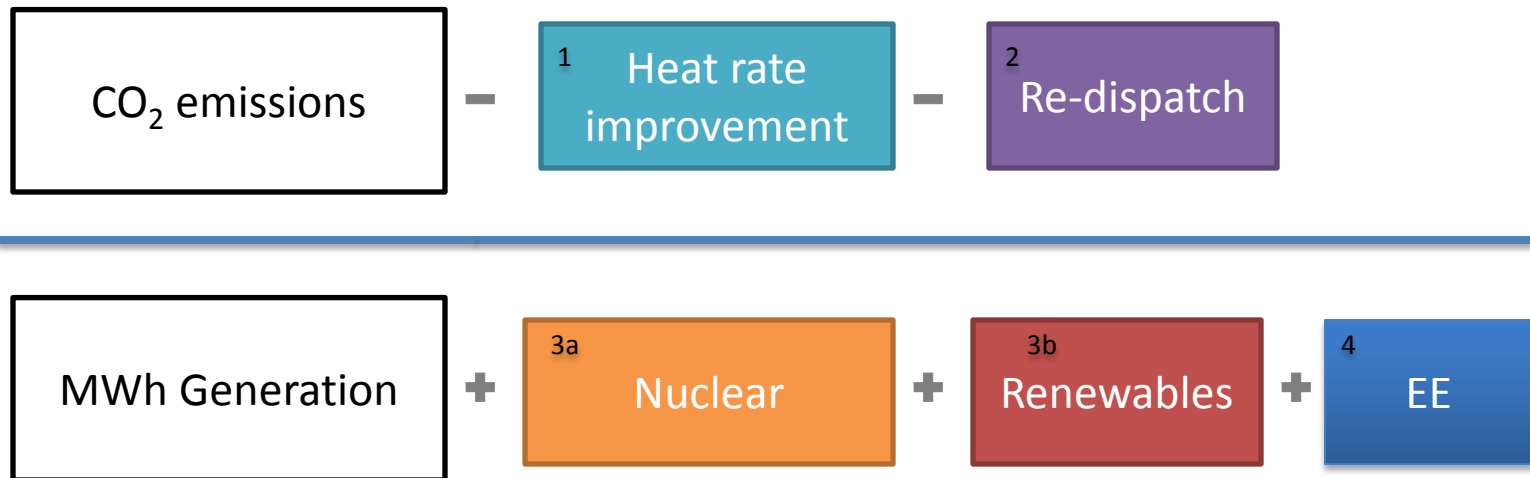


# Clean Power Plan Basics

- EPA role
- State role
- Limited precedent
- “Best system of emission reductions” =  
4 “building blocks”

# Building Blocks

2012 Fossil Units





“reflects the degree of emission limitation achievable through the application of the best system of emission reduction ...”

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## **Decision Points Affecting Wind Generation**

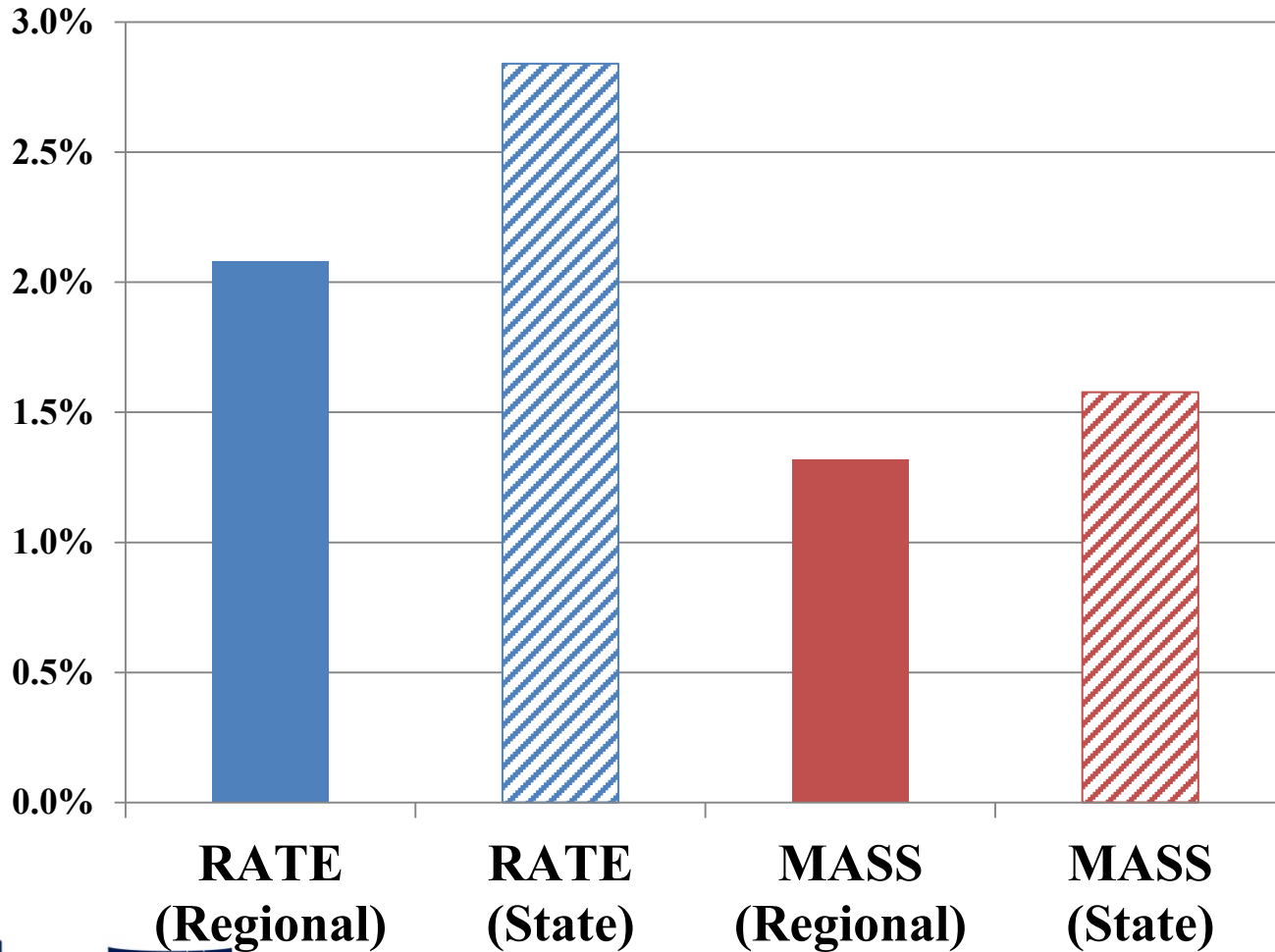
- **Rate or mass?**
- **Markets?**
- **State or multistate?**

# CPP Challenge

- Meet state emissions target
- Achieve cost-effective compliance/enhance operator flexibility
- Reduce administrative complexity
  - Recognize barriers to formal multistate collaboration
- Maintain traditional roles of environmental agencies, PUCs, and energy offices
- Recognize political barriers

# Present Value of Cost Change thru 2030

## Rate vs Mass, Regional vs State



# Common elements

- Benefits of interstate emissions credit trading w/o formal multistate plan
- Basic Requirements:
  - Common definition tradable unit
    - Individual state plan
  - Allow EGUs to use tradable compliance instrument
  - Tracking system to ensure no double counting

# RECs Example

- Separate state laws define RECs, tracking systems
  - NC, MO, KS → NC RETS, North American Registry

Existing registries/tracking systems for carbon credits, carbon offsets, EE credits

EGUs, States and EPA experience with allowance tracking under Title IV, CAIR, CSAPR

*Note: Under proposal cannot trade RECs*

Thank you

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## **Common Elements Policy Brief**

[http://nicholasinstitute.duke.edu/sites/default/files/publications/ni\\_pb\\_15-01.pdf](http://nicholasinstitute.duke.edu/sites/default/files/publications/ni_pb_15-01.pdf)

## **Webinar Southeast CPP Modeling**

[http://nicholasinstitute.duke.edu/content/webinar-impacts-clean-power-plan-compliance-choices-southeastern-united-states#.VS0katzF\\_14](http://nicholasinstitute.duke.edu/content/webinar-impacts-clean-power-plan-compliance-choices-southeastern-united-states#.VS0katzF_14)