

# The Clean Power Plan and U.S. Policy for Climate Change

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# **Clean Power Plan and U.S. Climate Policy**

**U.S. Climate Policy Objectives**

**U.S. Mitigation Policies**

**Proposed Clean Power Plan**

**Energy, Emissions, and Economic Impacts**

**Legal and Political Prospects**

**Future of U.S. Climate Policy**

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# U.S. Climate Policy Objectives



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# U.S. Climate Policy Objectives

In the range of -17% by 2020

-26% to -28% by 2025

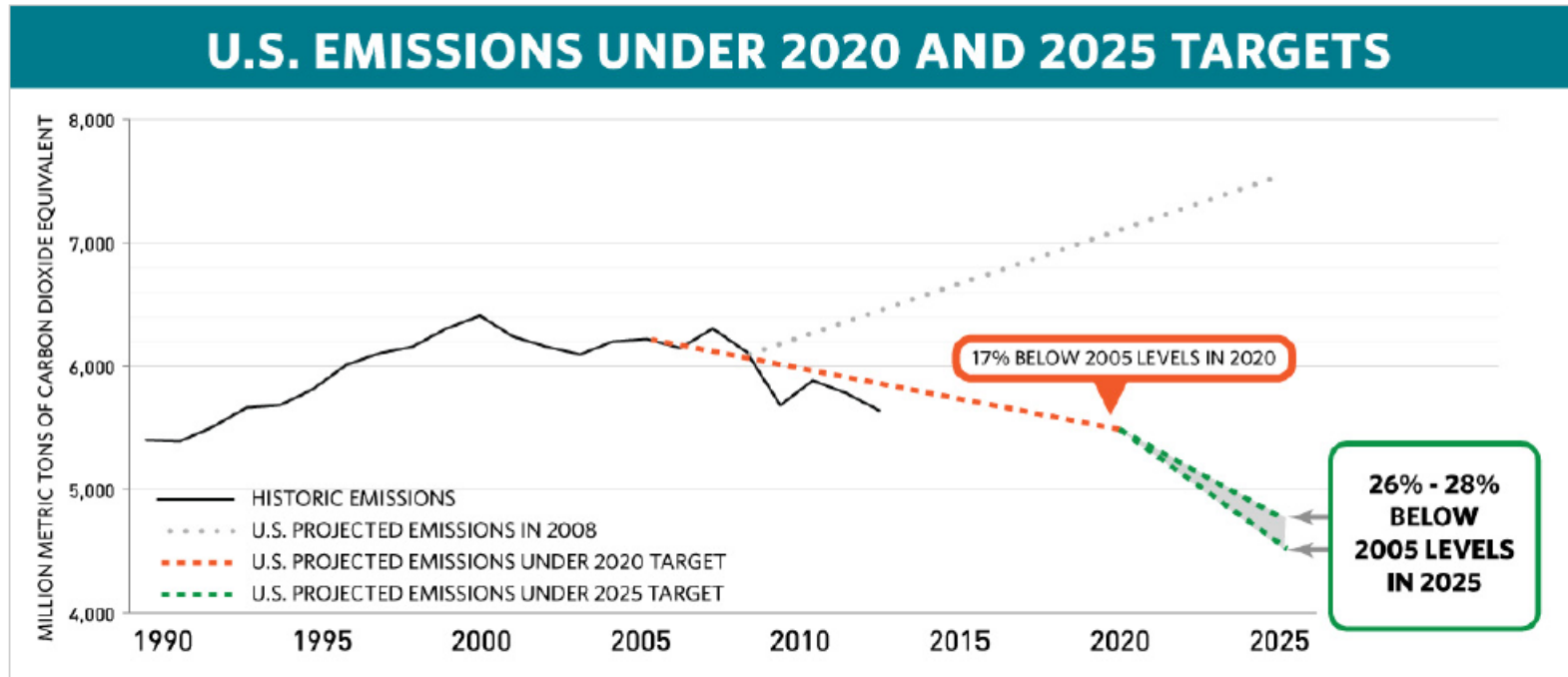
2005 base year

Net emissions

No planned use of international market mechanisms



# Emissions Targets through 2025



Source: U.S. INDC March 2015.

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# U.S. Mitigation Policies



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# Efficiency Standards

Car rule: joint fuel economy/tailpipe CO<sub>2</sub> standards

Heavy-duty fuel economy standards

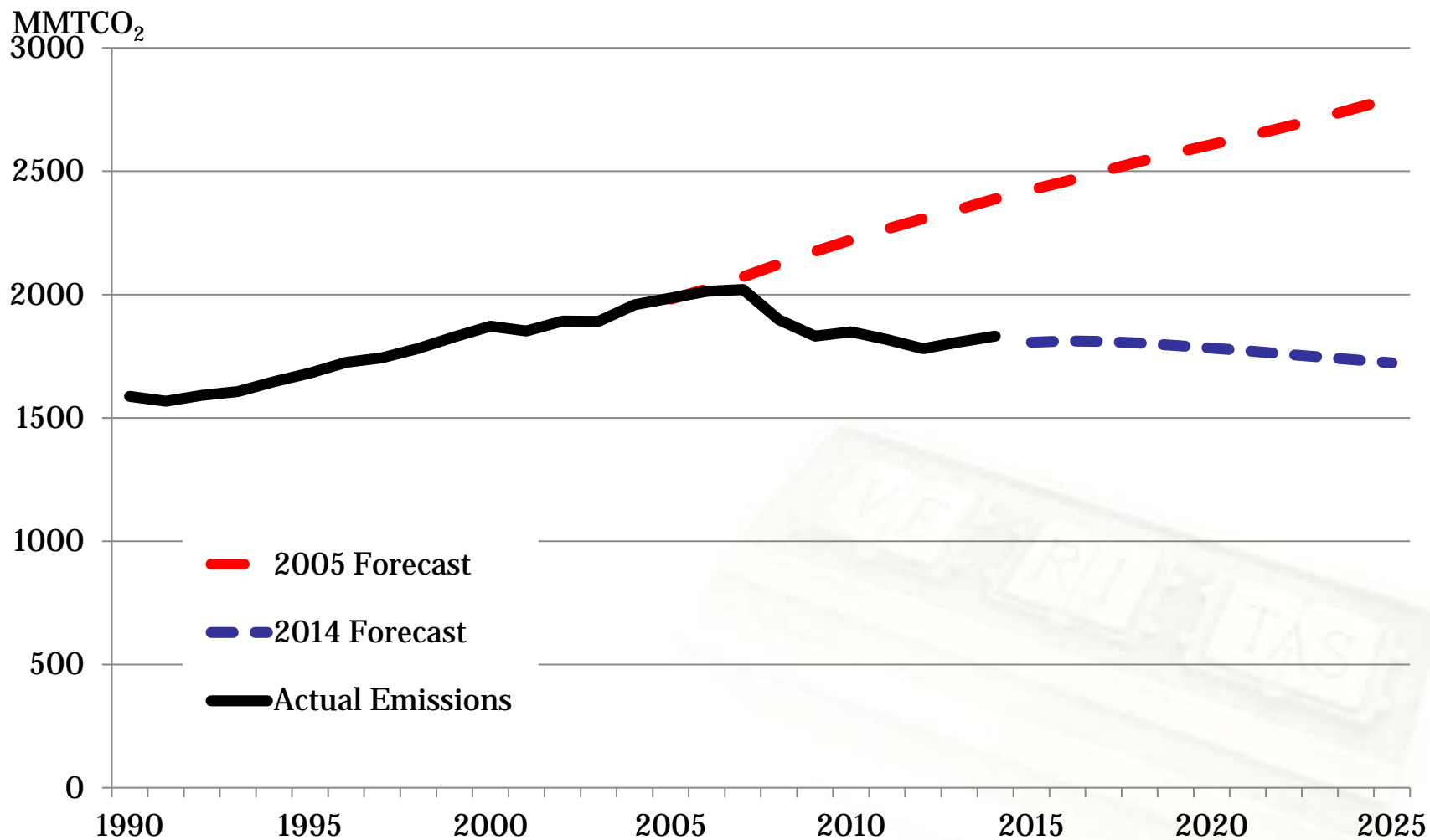
Appliance efficiency standards

State energy efficiency resource standards



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# U.S. Transportation CO<sub>2</sub> Emissions



Source: EIA Monthly Energy Review, March 2015.

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# Renewable Policies

Production tax credit and investment tax credit

State renewable portfolio standards

Loan guarantees

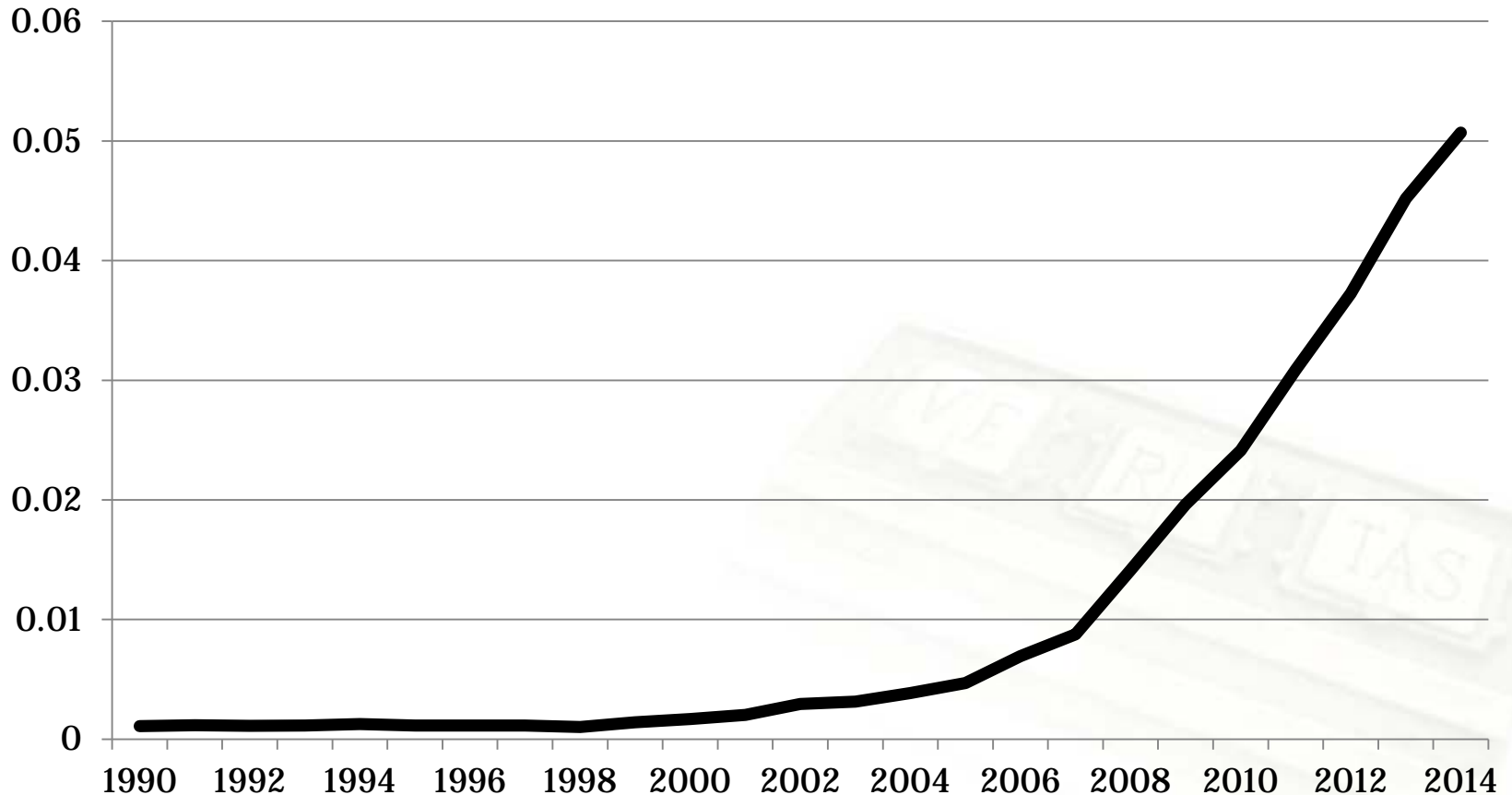
Renewable fuel standard



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# U.S. Utility Wind and Solar Power Generation

Share of U.S.  
Generation



Source: EIA Monthly Energy Review, March 2015.

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# State Carbon Policies

## Regional Greenhouse Gas Initiative (RGGI)

March 11, 2015 auction: \$5.41/tCO<sub>2</sub>

## California

April 1, 2015 price: \$12.63/tCO<sub>2</sub>

## Clean Power Plan



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# Proposed Clean Power Plan



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# New Source Performance Standards

Federal standard for new, modified, and reconstructed emission sources

1100 lb CO<sub>2</sub>/MWh

~0.5 metric ton CO<sub>2</sub>/MWh

Proposed September 2013

Expected final rule mid-summer 2015

Equivalent to new IGCC with  $\geq 25\%$  CCS

EPA estimates little impact on new investment

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# Existing Source Performance Standards

Federal regulatory guidance for state plans

Overall objective: reduce power sector CO<sub>2</sub> emissions 30% below 2005 levels by 2030

State targets based on four building blocks

“Best system of emission reduction”

Rate-based and mass-based targets

State and regional implementation options

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# Four Building Blocks

Heat rate improvements

Dispatching from existing natural gas units

Increasing use of renewables and nuclear

Demand-side energy efficiency



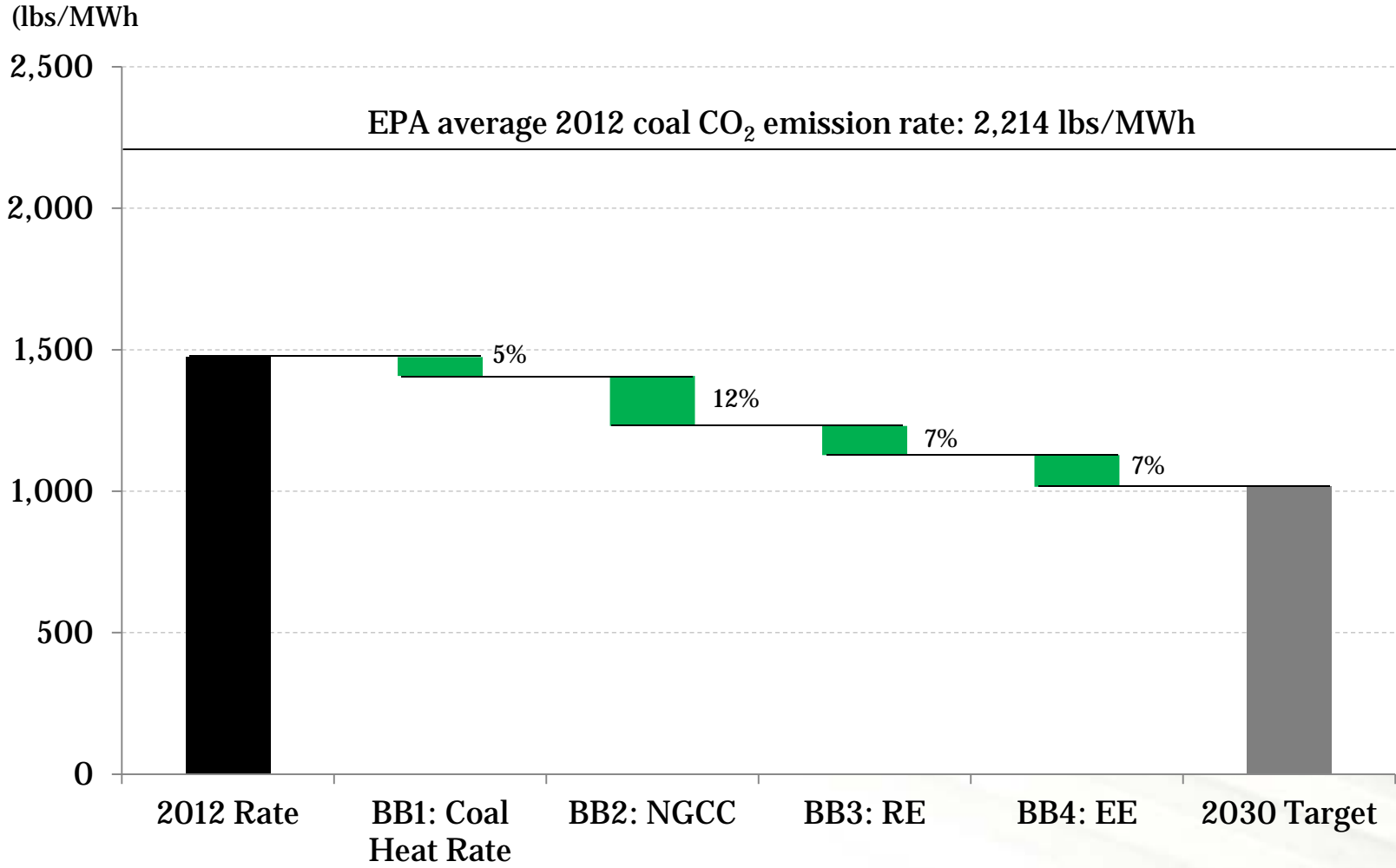
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# Energy, Emissions, and Economic Impacts of Clean Power Plan



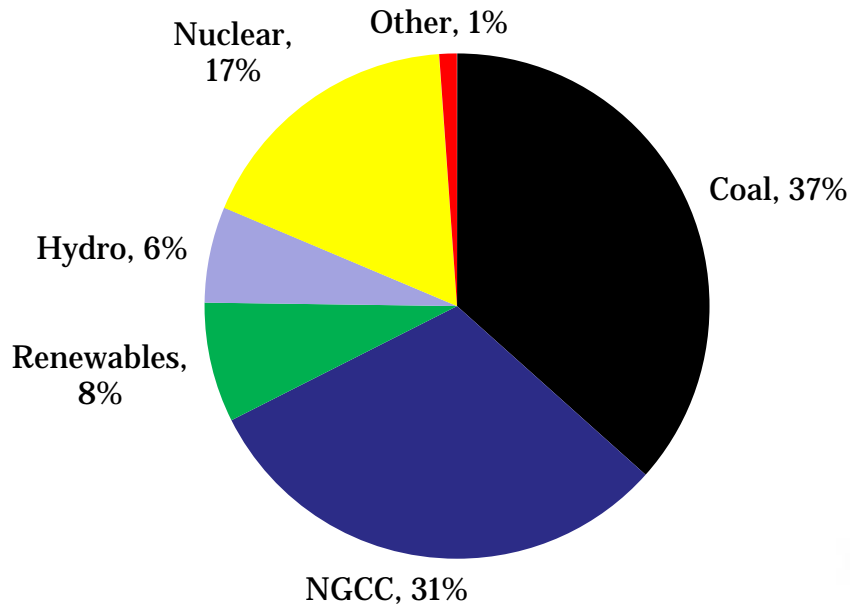
# Four Building Blocks



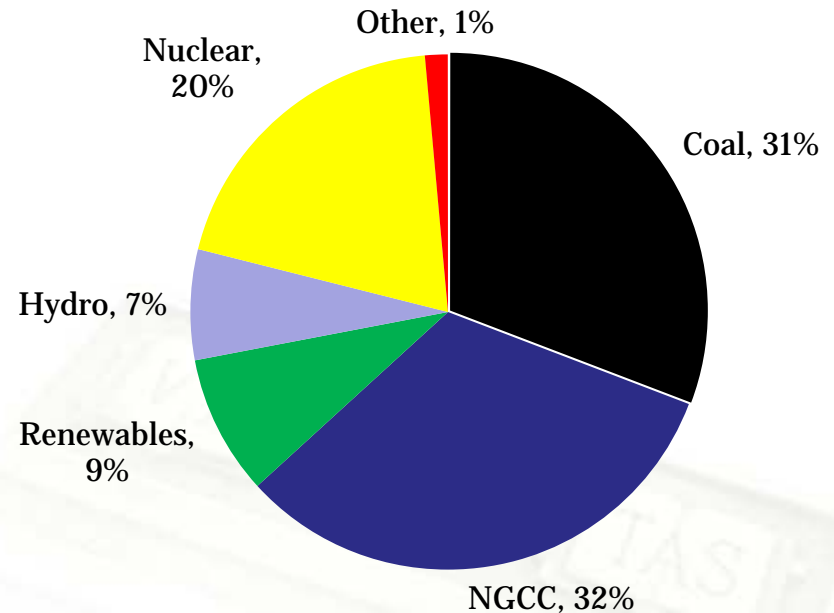
Source: Palmer, Burtraw, Paul, and Pan 2014.

# Projected Power Generation

2030 Business-as-Usual Forecast



2030 CPP Option 1 (regional plans) Forecast



Electricity demand declines 11% relative to BAU.

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# Electricity Price Impacts

National average retail rate impacts:

CPP ↑ prices 0.4 – 0.7¢/kWh by 2020

Significant regional variations

Some regions may see ↑ 12%

Some regions with no more than 1% ↑

Reflects variations in state targets and in existing state power sector fuel mixes

EPA claims electricity bills will ↓ with efficiency investments

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# Social Benefits and Costs

**EPA estimates 2030 costs:**

**\$7.3 - \$8.8 billion**

**EPA estimates 2030 benefits:**

**\$55 - \$93 billion**

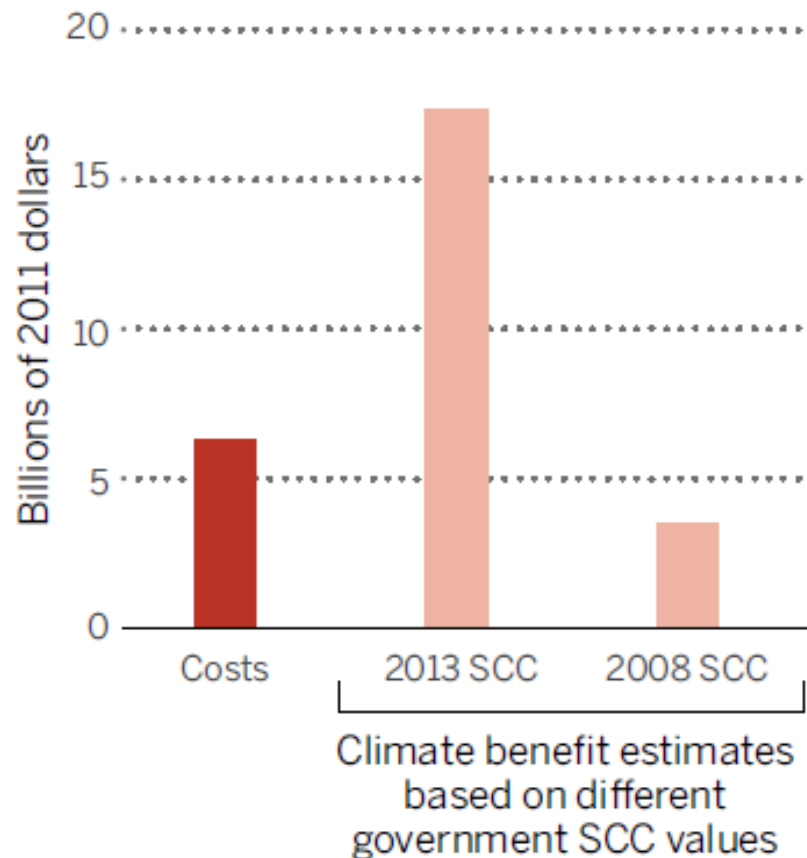
**Large co-benefits: cut local air pollutants by as much as 25%**

**Questions of domestic and global climate benefits (social cost of carbon)**



# Impact of Social Cost of Carbon

## Costs and benefits of emissions reductions



Source: Pizer et al. *Science* 2014.

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# Legal and Political Prospects of Clean Power Plan



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# Legal Novelty of Clean Power Plan

Use of existing source performance standards

Flexible interpretation of “best system of emission reduction”

Four building blocks extend beyond traditional parameters of Clean Air rules

Rule structured to survive even if one or more building blocks struck down

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# Congressional Challenge to Clean Power Plan

## Congressional Review Act

Congress may vote to reject a major rule  
Successfully employed by Congress once

## Appropriations riders

Prohibit use of appropriations on rule design  
and implementation

Pass legislation to change relevant Clean Air  
Act authority



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# State Challenges to Clean Power Plan

States technically have one year to submit their implementation plans

May request a 1-2 year extension

Some states have sued EPA to challenge application of the Clean Air Act to climate

If EPA deems a state plan inadequate, it may implement a Federal plan



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# Future of U.S. Climate Policy



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# Clean Power Plan Timeline

**June 2013: Obama calls for Clean Power Plan**

**Sept 2013: EPA proposes NSPS**

**June 2014: EPA proposes ESPS**

**Summer 2015: EPA expected to issue final NSPS and ESPS; propose Federal plan**

**Summer 2016: states submit compliance plans**

**Summer 2016: EPA issue final Federal plan**

**Summer 2017 (2018): State plans due with 1-(2-)year extension**

**Summer 2020: CPP compliance period begins**

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# Future of U.S. Climate Policy

Paris negotiations implications

Presidential election 2016 implications

EPA decisions regarding state plans,  
implementing Federal plan

Legal challenges?



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