

# A quick overview of EPA's Clean Power Plan

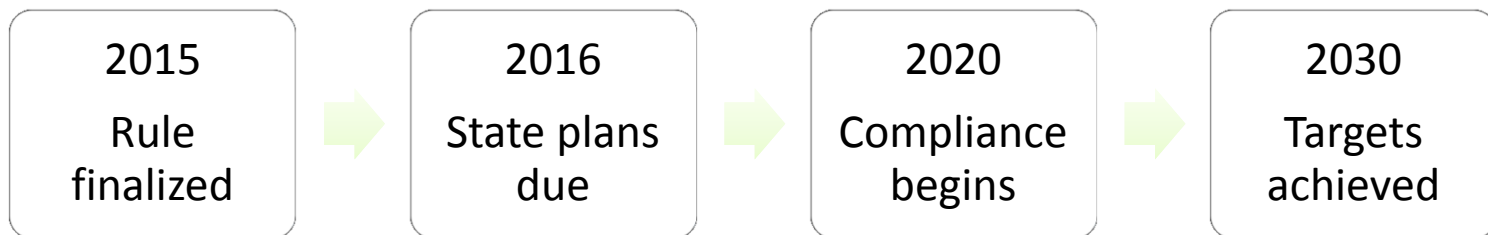
Pete Wilcoxon

September 19, 2014

In June the EPA announced a proposed rule for regulating carbon dioxide emissions from existing power plants. This presentation gives a very quick overview of some of the plan's salient features.

# The CPP at a glance

<b>Sources affected:</b>	Existing power plants
<b>EPA's authority:</b>	Clean Air Act section 111(d)
<b>Who must comply:</b>	States
<b>Form of target:</b>	Rate: pounds of CO <sub>2</sub> /MWh
<b>Power emissions goal:</b>	25%-30% below 2005 (18%-25% below BAU) by 2025
<b>Climate benefits:</b>	\$31 billion (at 3%)
<b>Health benefits:</b>	\$27-\$62 billion
<b>Compliance cost:</b>	\$9 billion
<b>Net benefit:</b>	\$49-\$84 billion



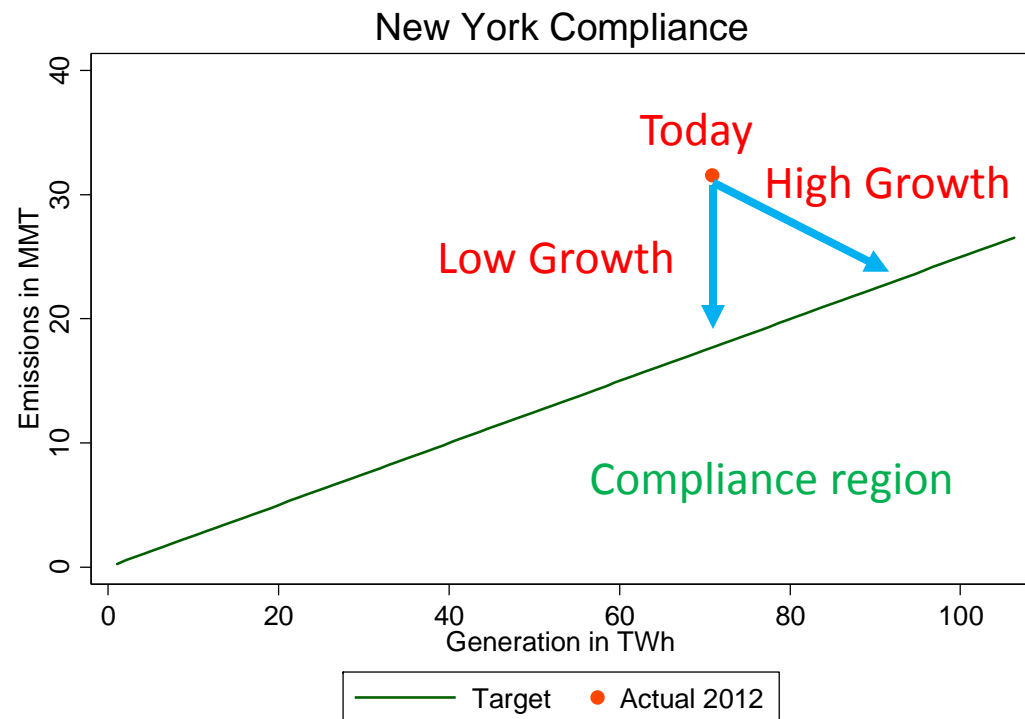
# Targets and emissions

$$Rate\ Target = \frac{CO2_{coal} + CO2_{oil} + CO2_{gas}}{MWh_{fossil} + MWh_{nonfossil} + MWh_{ee}}$$

$$CO2_i = MWh_i * EmissionsRate_i$$

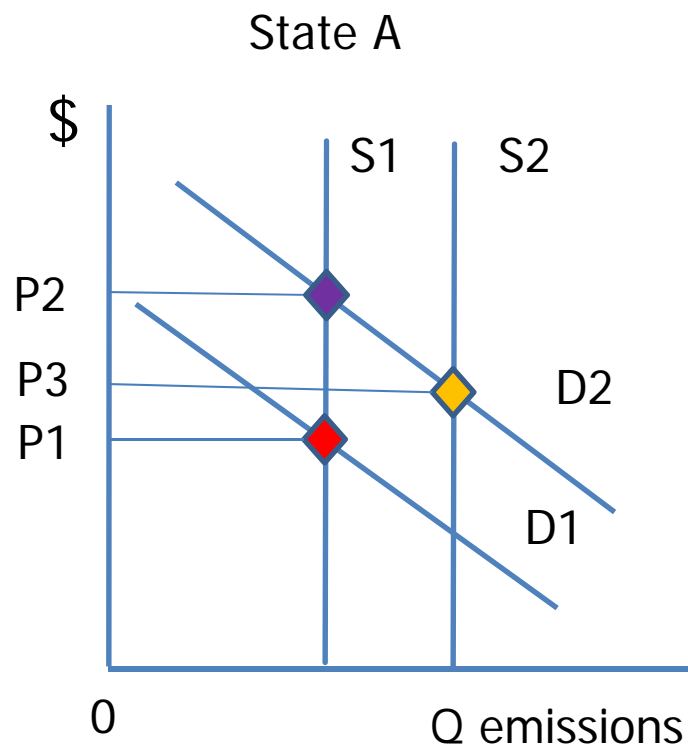
Emissions depend on growth of electricity demand

NY Target = 549 lbs/MWh



# Manages risks from growth

Stylized Market for Emissions Permits

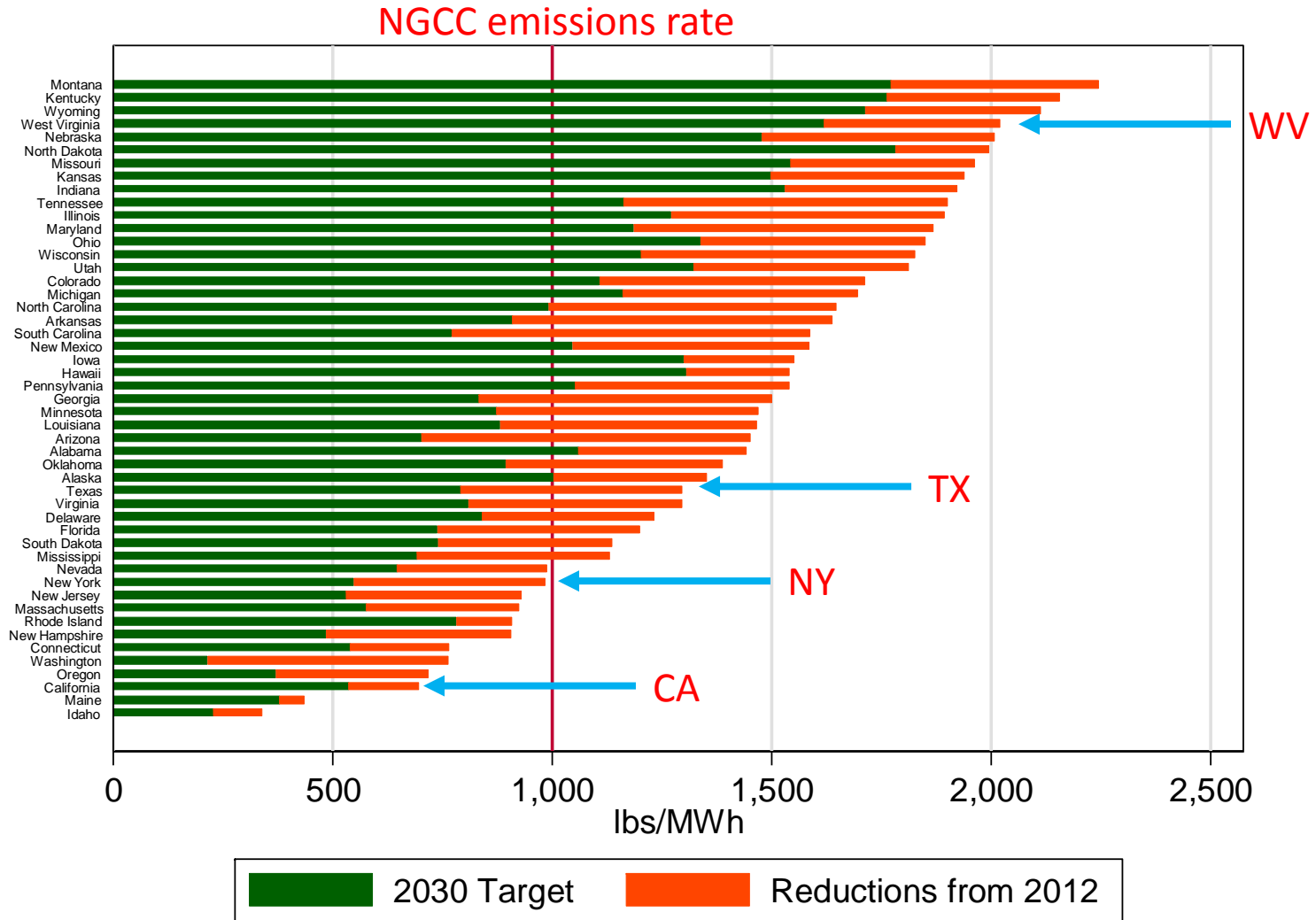


Expect D1,  
which implies S1

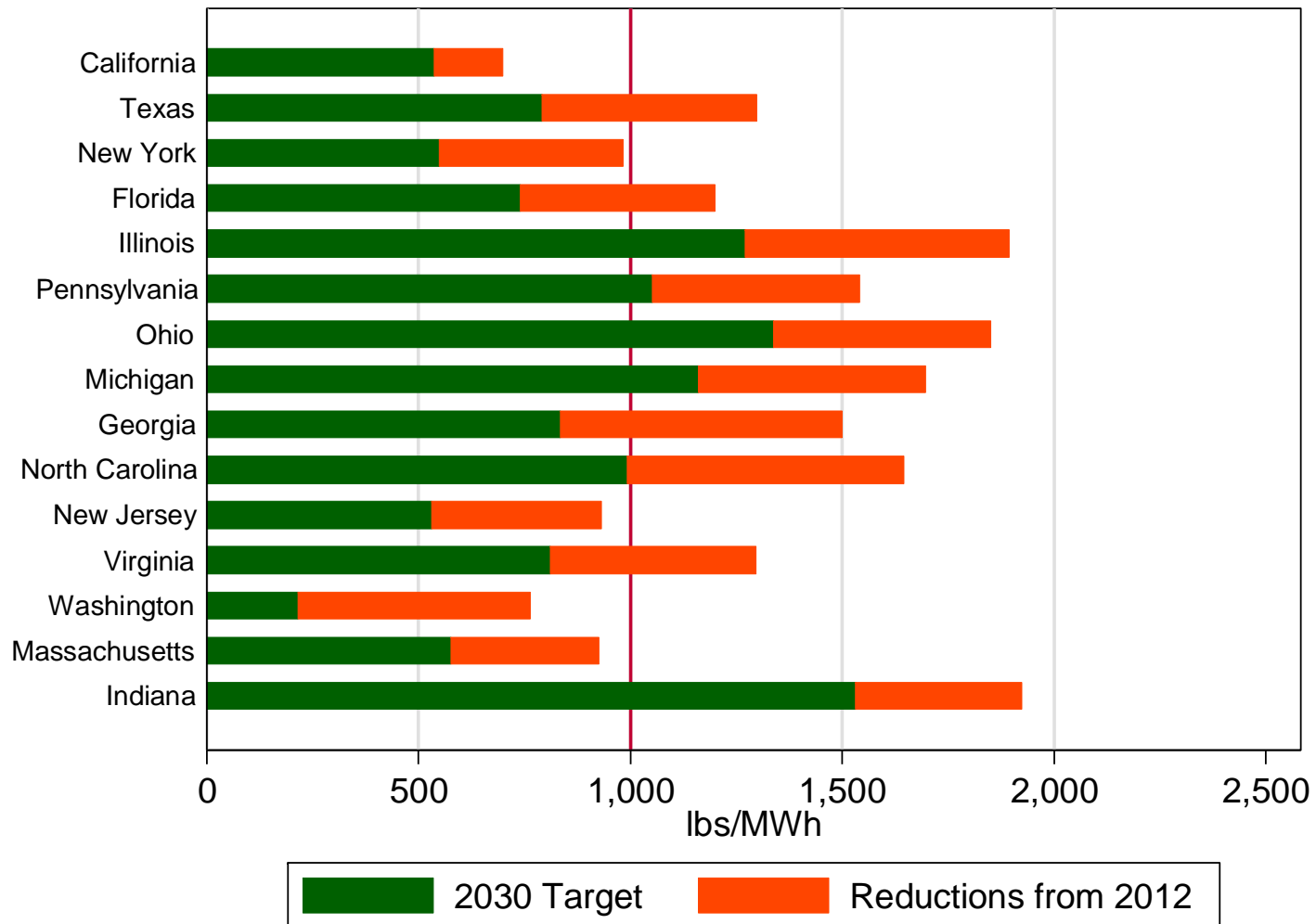
Demand growth  
causes D2, which  
implies S2.

Reduces rise in P  
or MC of abatement

# State emissions rate targets



# Largest states (70% of population)

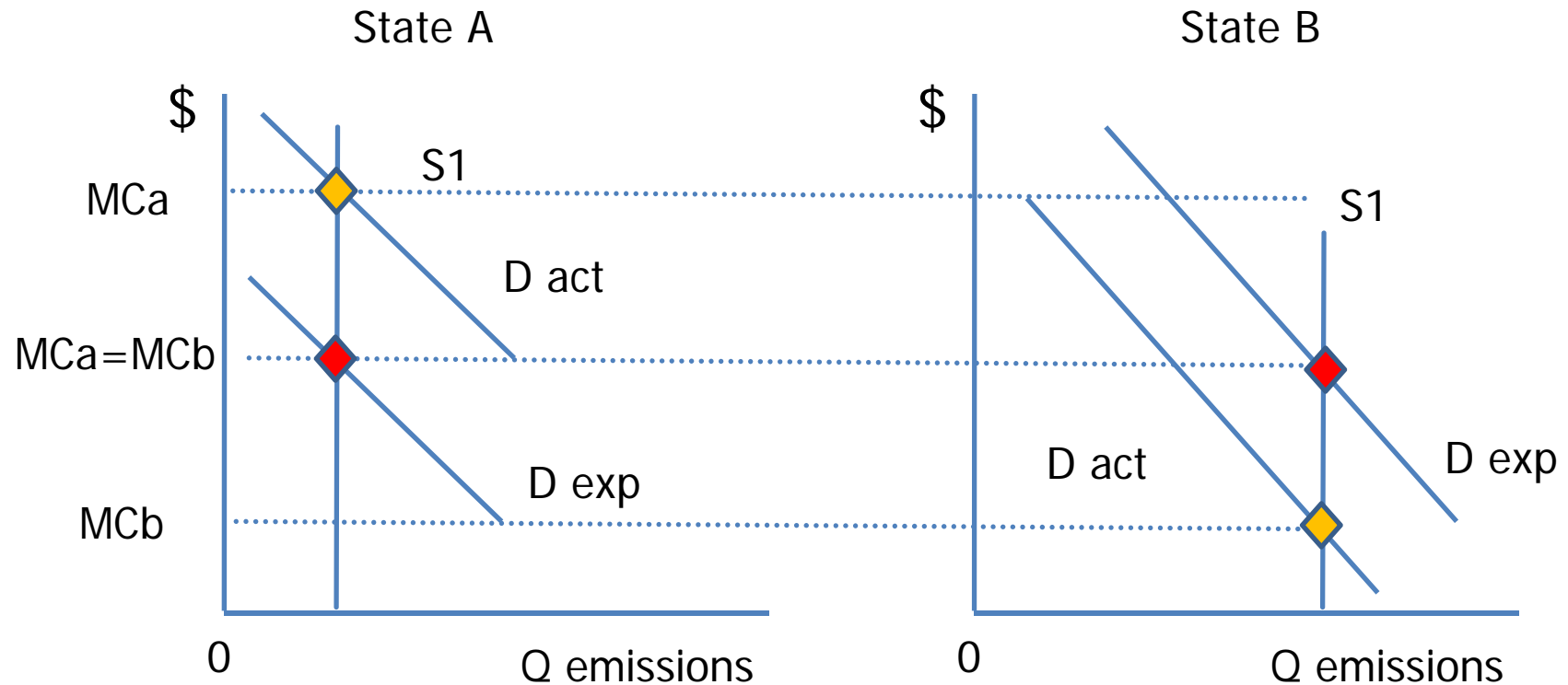


# EPA's suggested technologies

Technology or building block	Goal
1. Improve heat rate for coal	6% reduction in heat per MWh
2. Increase utilization of existing NGCC	Raise capacity factors to 70%
3. Increase non-fossil generation	Existing and under-construction nuclear, moderate expansion of renewables
4. Demand side energy efficiency	11% reduction from BAU by 2030

States have flexibility about policies: trading, direct regulation, taxes?  
Explicit support for existing and future interstate plans (e.g. RGGI)

# Strong incentive to form agreements



Drivers: (1) unequal MC given targets; (2) uneven electricity growth.