



The Clean Power Plan: Overview and Prospects for Economic Efficiency

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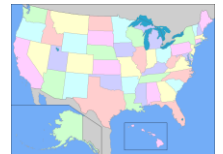
Washington, DC



RESOURCES
FOR THE FUTURE

Path to the Clean Power Plan

- July 2010 Senate fails to take up the Waxman Markey Bill
 - Comprehensive Cap and Trade is declared dead
- 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 for existing power plants
 - State-based planning process to achieve federal goals
- August 2015 release of *final* Clean Power Plan
 - Includes *proposed* Federal Plan / Model Rule
 - Simultaneous release of final 111(b) standards for new generators
- 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
- Supreme Court issues stay of the Clean Power Plan on Feb 9, 2016
 - Ultimate future of rule to be decided when Supreme Court rules
 - EPA still under obligation to regulate CO₂ emissions



EPA's CPP Emissions Guidelines

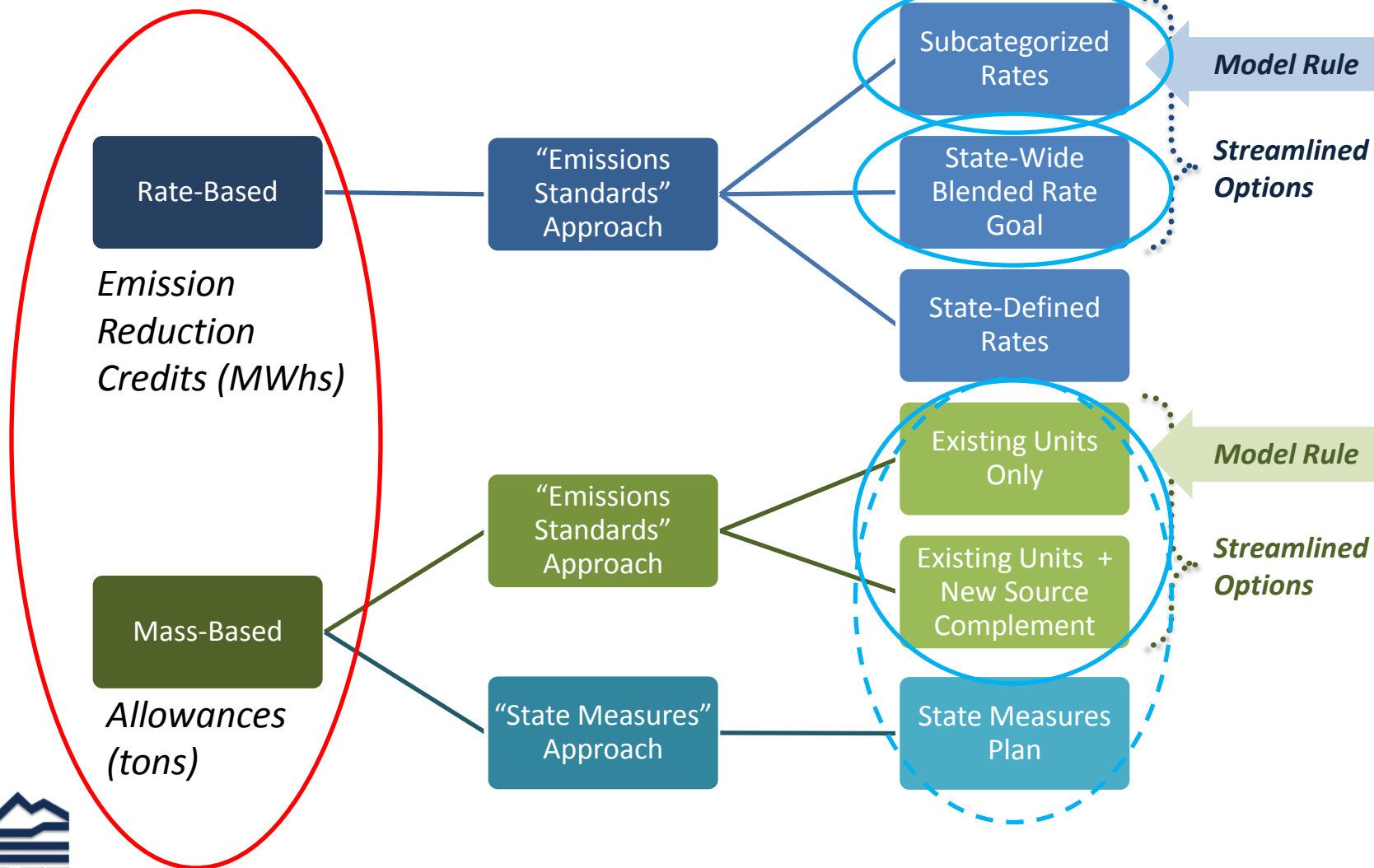
- Emissions Guidelines are built on Three Building Blocks (BB)
 - BB1: Heat rate improvements at existing coal-fired boilers
 - BB2: Substituting generation at existing natural gas combined cycle (NGCC) plants for coal-fired generation
 - BB3: Substitution of potential generation from new renewables (based on past growth rates) for existing coal and gas fired generation.
- Separate emissions rate standard for Fossil Boilers (Coal) and NGCC units that get stricter over time

Table 2. Emission Performance Rates by Technology Category (lb/MWh)

Category	Interim Rate (2022-2029)	Final Rate (2030 on)
Fossil Fuel-Fired Electric Steam	1,534	1,305
Combined Cycle Combustion Turbines	832	771

- Emissions rates translated into singled blended emissions rates at state level
 - Based on share of 2012 generation from NGCC and coal-fired boilers
 - Blended rates also translated into mass-based caps (tons)
 - New source complement if state chooses to include new sources under mass

State Plan Options

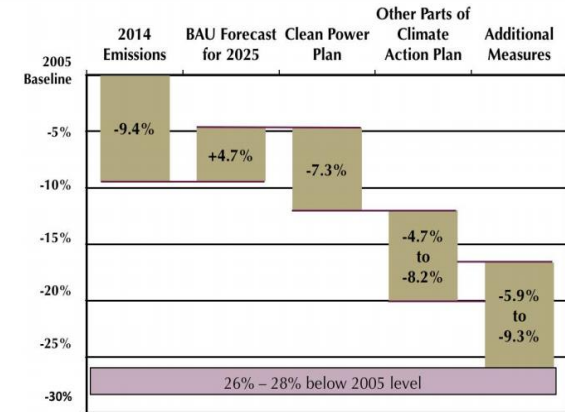
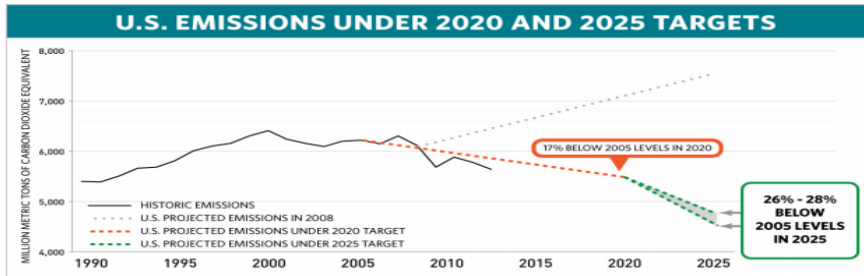


Economic Efficiency of the CPP

- Focuses on electricity sector only
 - Where reductions come from in short term with economy-wide cap
 - Other sectors are next in line at EPA
- Rate-based targets
 - But EPA developed generous mass targets for most states
- Built around state-based compliance plans
 - But “trade ready” and other features encourage trading and lower cost
- Focus on existing sources only
 - But must demonstrate no leakage or take new source complement
 - Allowance allocation can help address leakage
- Pricing carbon directly is possible under CPP
 - Has efficiency implications and revenue possibilities
 - Likely to require legislative action
- Predicted allowance prices are below social cost of carbon

Paris, the CPP and the SCOTUS Stay

- What did the US pledge in its INDC for Paris?



- Will the US meet its Paris pledge if the CPP is overturned?
 - Highly likely answer is yes
 - Most modeling (including RFF) finds low/zero CO₂ prices through 2025
- Why is CPP policy likely to be non-binding in near term?
 - Low natural gas prices expected to continue
 - Recent declines in cost of wind and solar
 - Federal tax credit extenders (PTC, ITC)
- Why do we need the CPP?
 - Ratifies changes already taking place in industry
 - Alters expectations for investors
 - Serves as a back-stop should circumstances change
 - More ambitious longer term goals