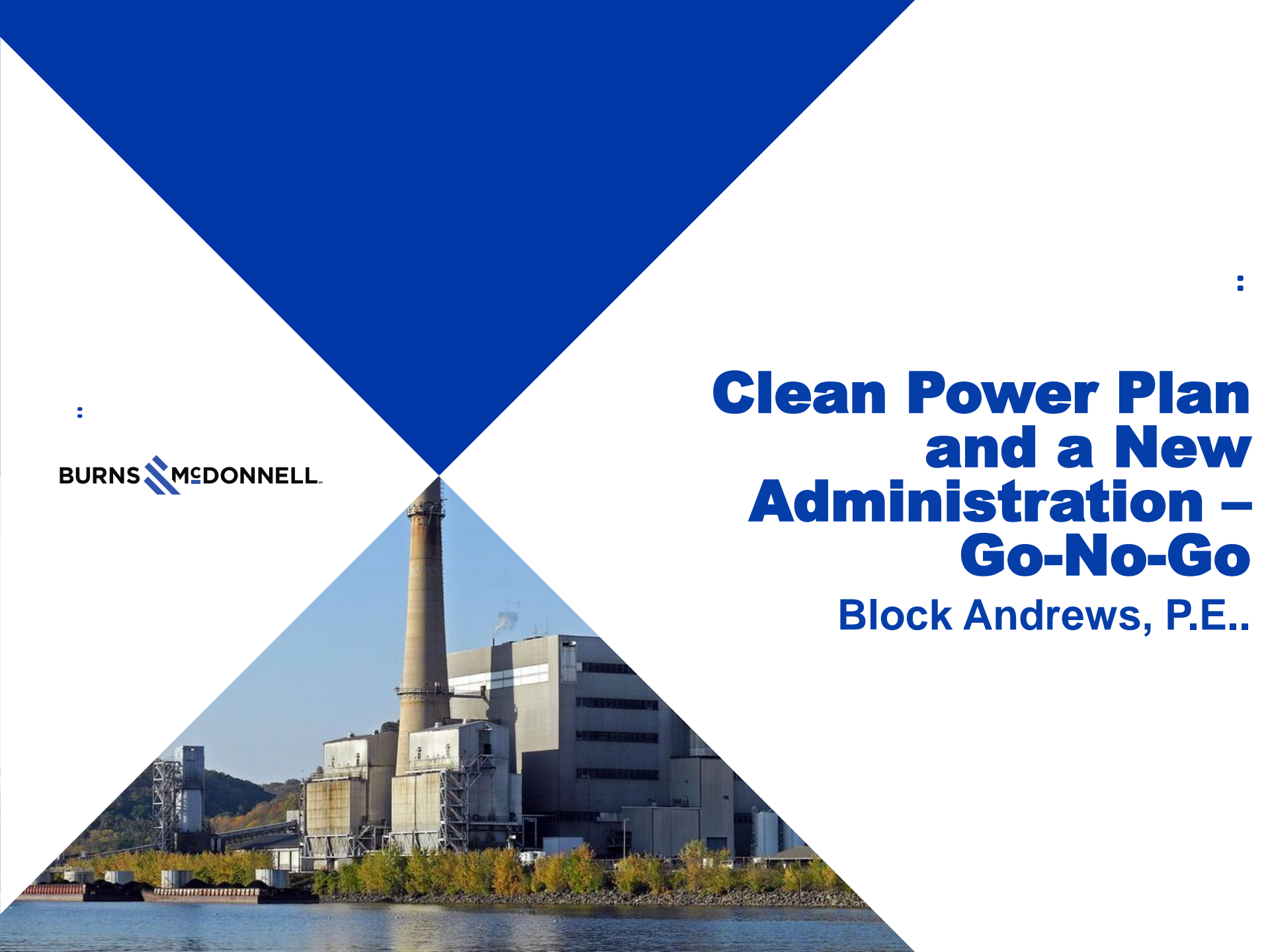




Clean Power Plan and a New Administration – Go-No-Go

Block Andrews, P.E..



CO₂ Rules

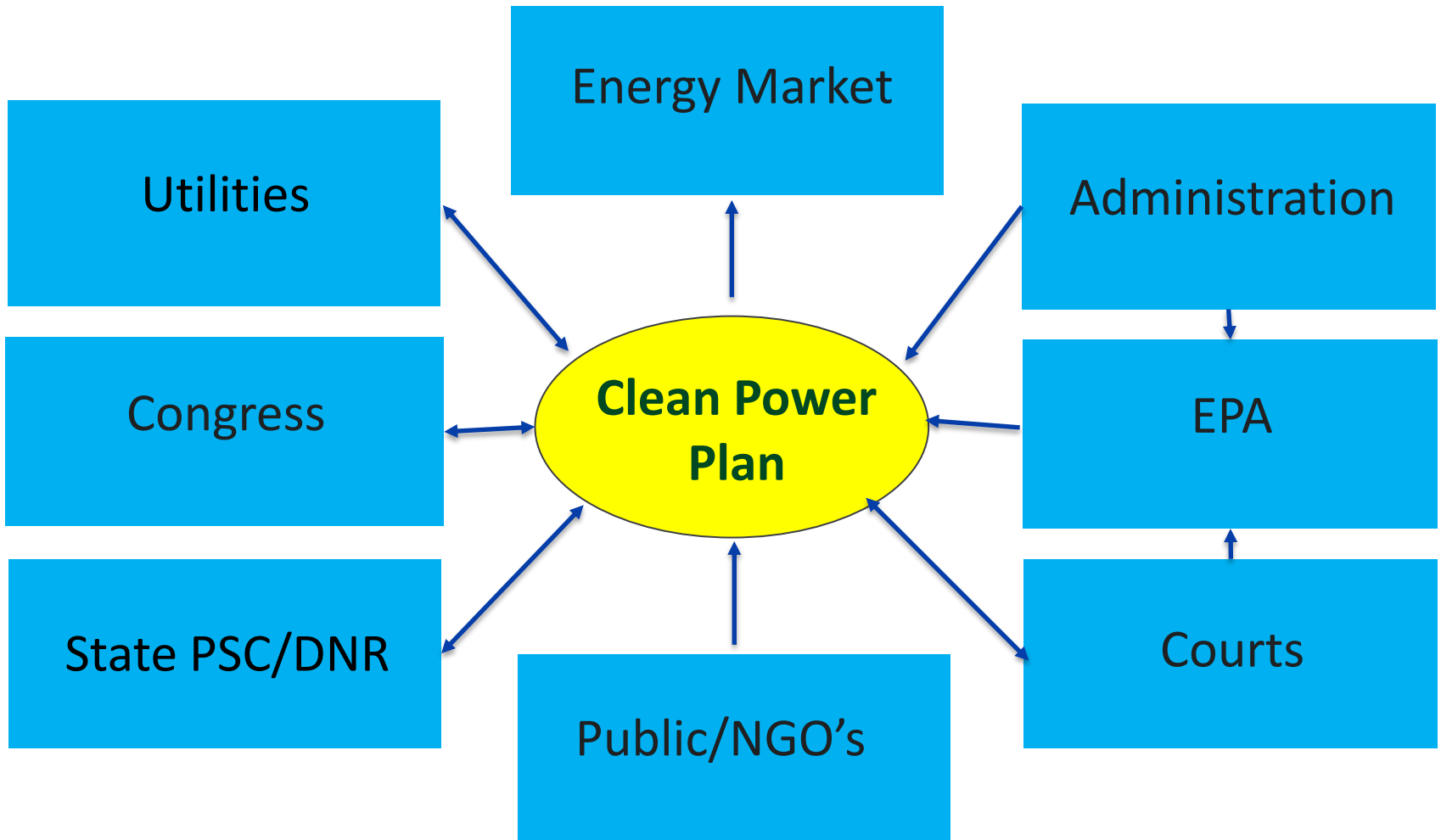
- Final Rule for CO₂ emissions from new, modified and reconstructed electric utility generating units (EGUs) (the Section 111(b) rule)
- Final Rule for CO₂ emissions from existing electric generating units (EGUs) (the Section 111(d) rule) **aka Clean Power Plan**
- Proposed rule for the Clean Power Plan Federal Compliance Plan and Trading Rules



Clean Power Plan: Mass or Rate Based Limits

- Final Rule establishes state-wide rate-based emissions standards (lb CO₂ / MWh) and state-wide mass-based emissions standards (tons)
- Rate plans limit the average amount of CO₂ that is emitted by coal and natural gas combined cycle units in each system per megawatt-hour generated
- Mass plans limit the total tons of CO₂ that is emitted from coal and natural gas combined cycle units in each system
- Limits reduce over the interim period (2022 – 2030)

Key Clean Power Plan Influences



Congress

Congress

- Develop new laws
 - Last version of Clean Air Act was 1990
- Action on Clean Power Plan
 - Supreme Court upholds law: Dems have little reason develop CO₂ law
 - Supreme Court dilutes/voids law: Dems have reason to play and Republicans may play as well



New Administration

Democrat/Republican Platforms

Action	Democrats	Republicans
Climate Change	Urgent threat	Far from most pressing issue
Paris Climate Change Agreement	Continue to meet	Reject
CO2 Pricing	Should be priced	Oppose any carbon tax
Energy Subsidies	Get rid of fossil fuel subsidies	Get rid of all energy subsidies
EPA	Continue to support	Restructure EPA to a bi-partisan commission, shift responsibilities to States

Source: Democrat and Republican Platforms

Clinton/Trump Platforms

Action	Clinton	Trump
Fracking Restrictions	X	
80% Reduction in GHG by 2050 (from 2005 baseline)	X	
500 million installed solar panels in next 4 years	X	
Boost oil, gas, coal production		X
Lift moratorium on energy production on federal lands		X
Renew Keystone Pipeline		X

Source: Utility Dive,
Aug. 29, 2016

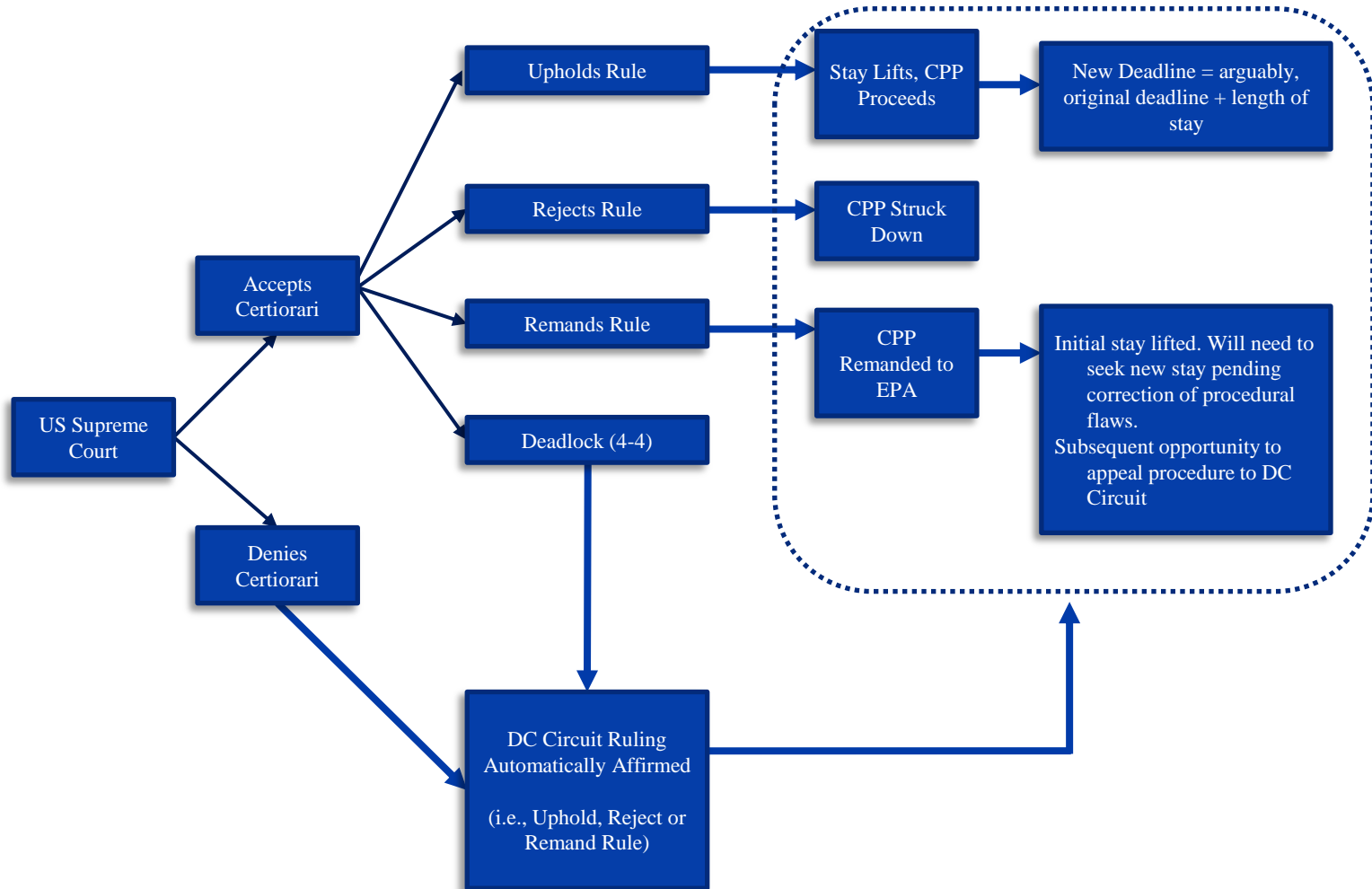
Legal

Legal

- DC Circuit *en banc* to hear CPP
 - September 27th
 - 9 judges (4 Republican nominees, 5 Democratic Nominees)
 - Decision possibly this Winter/Early Spring 2017
- No matter what the decision, likely to be appealed to the Supreme Court



Clean Power Plan: Litigation Decision Tree US Supreme Court



Jay Holloway: Sutherland Asbill & Brennan

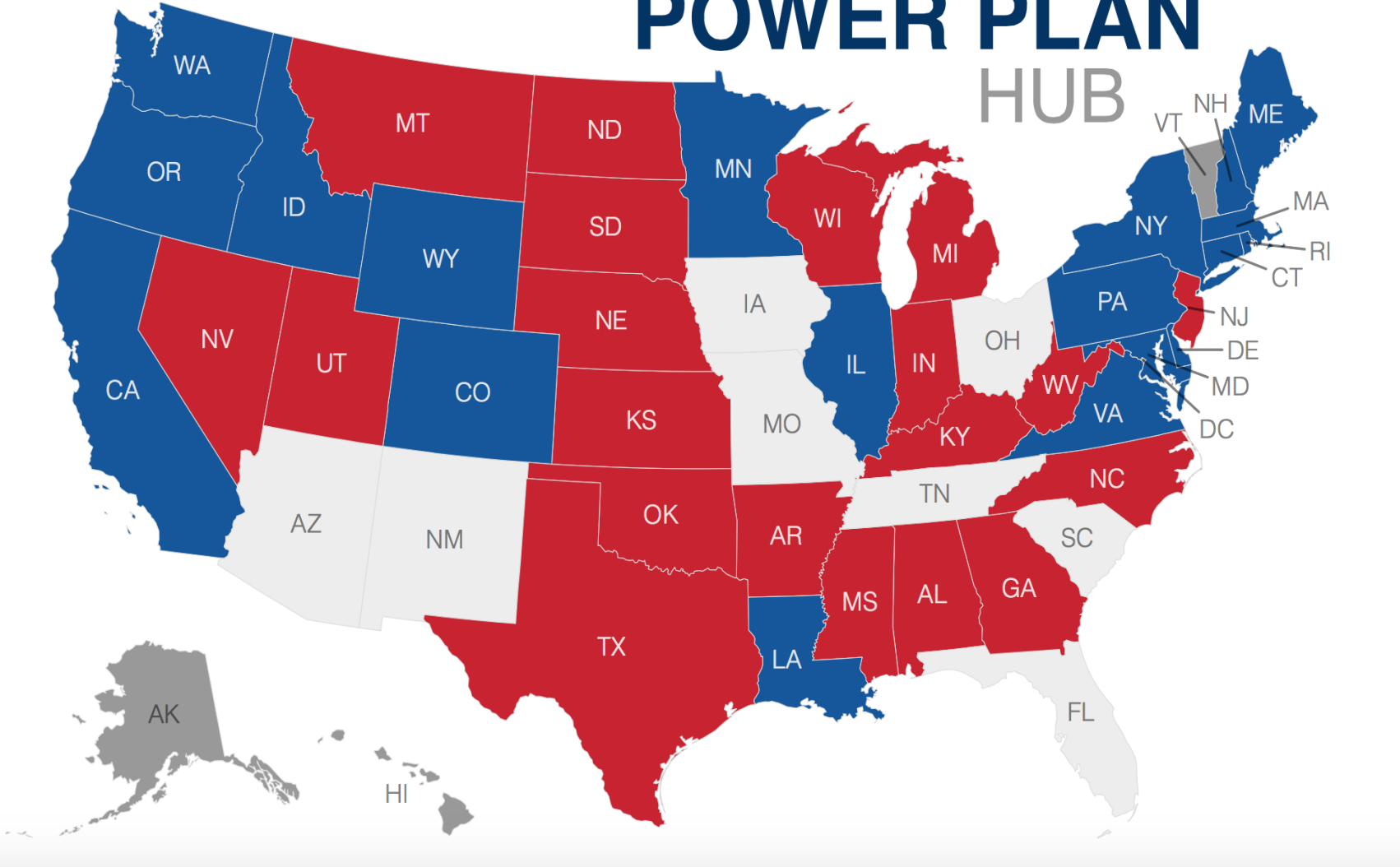
Clean Power Plan Stay & Litigation

- Stay remains in place until the Supreme Court acts, either
 - Decides not to hear the appeal of the rule or
 - Issues a final decision on the rule (for or against).
- Question on how CPP deadlines will be treated for period of stay if rule upheld.
 - Industry position is that all deadlines are delayed for period of stay.
 - EPA says that it can decide new deadlines (e.g., CSAPR)



States Still Going Forward with CPP

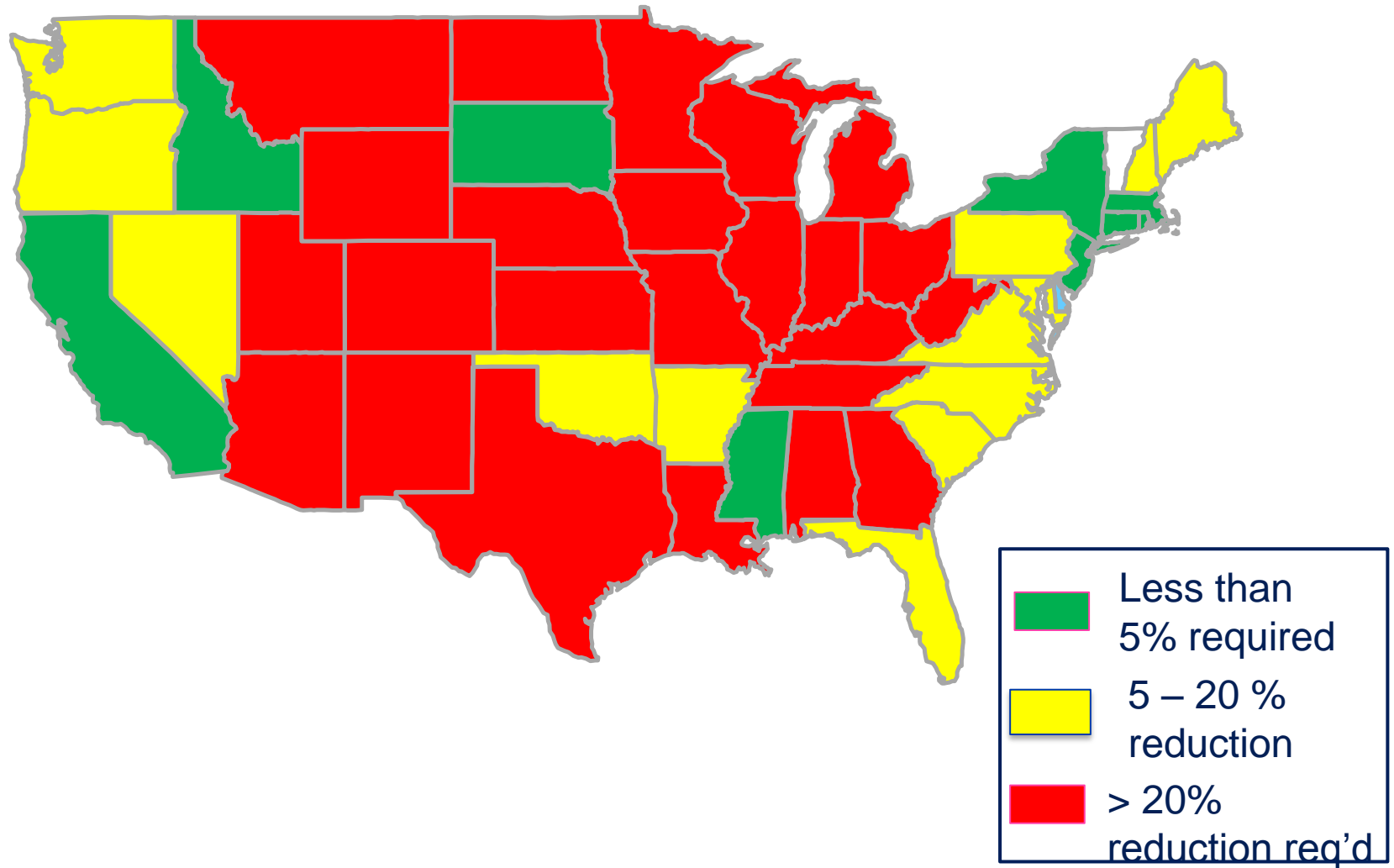
E&E's POWER PLAN HUB



- Blue = Continuing to Plan
- Red = Suspended Planning
- White = Still Assessing
- Silver = Exempt

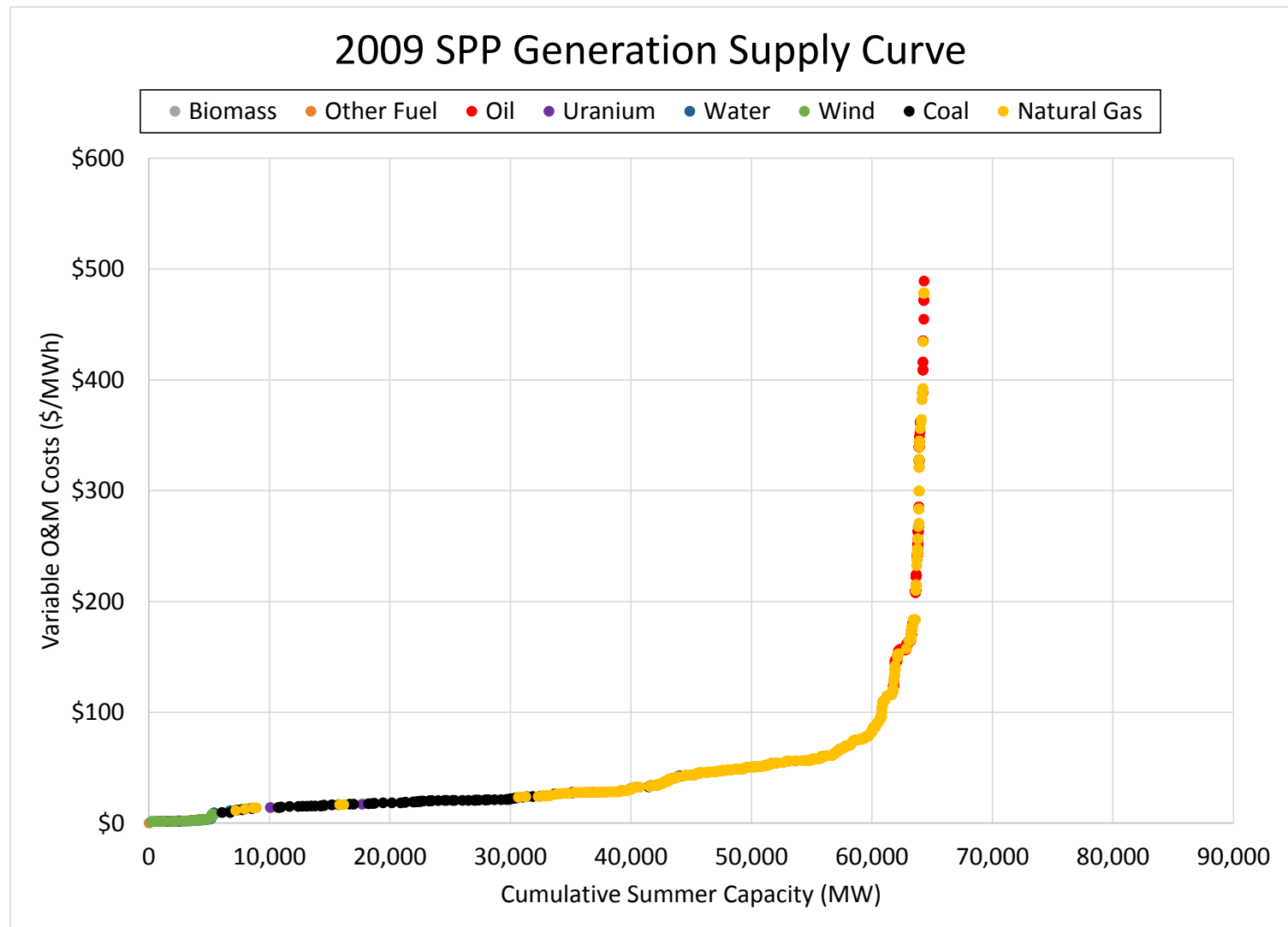
Winners/Losers

Winners and Losers based on 2014-15 CO₂ Emissions

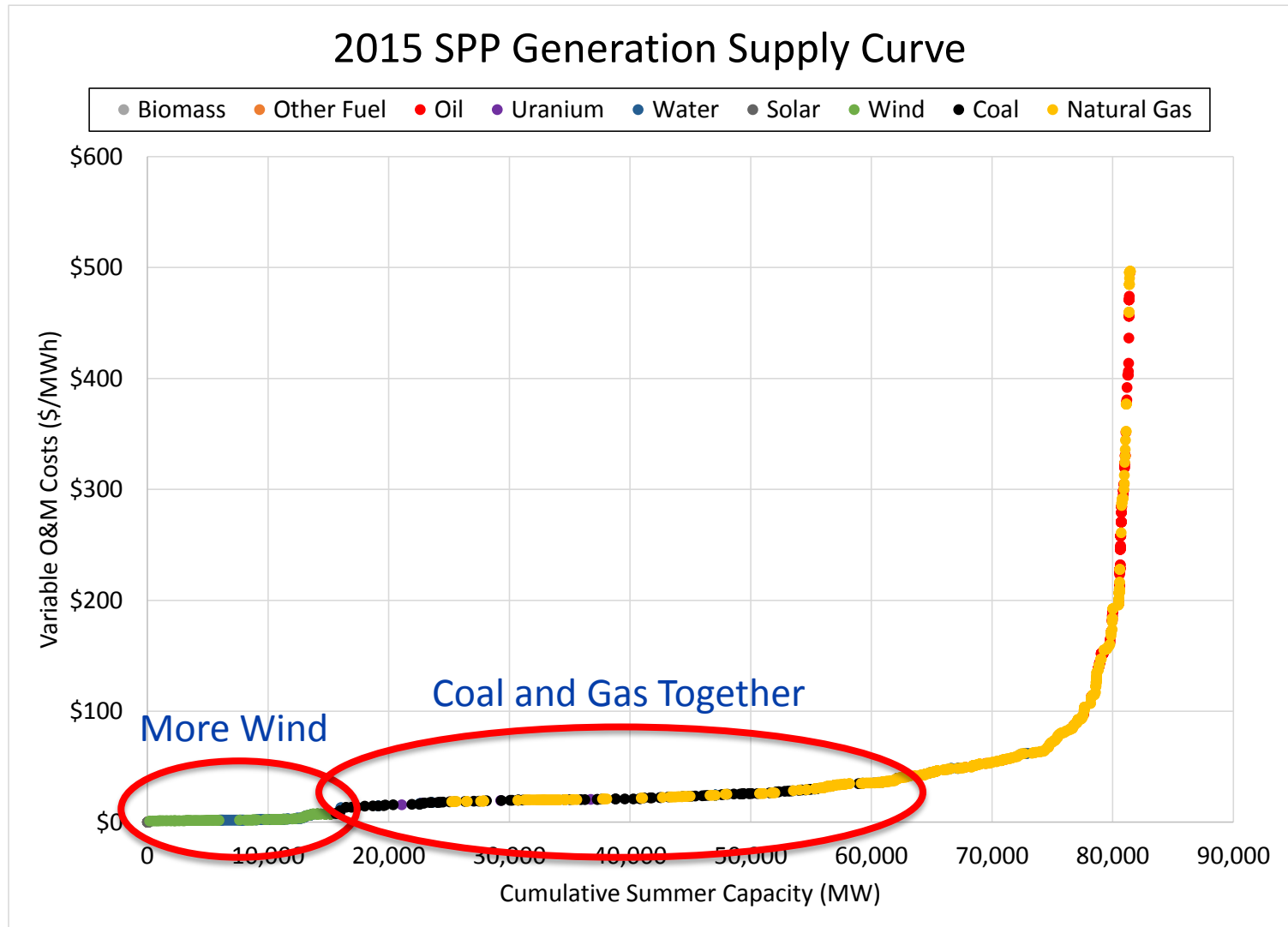


Key Considerations

Low Natural Gas has Created Competition



Low Natural Gas has Created Competition



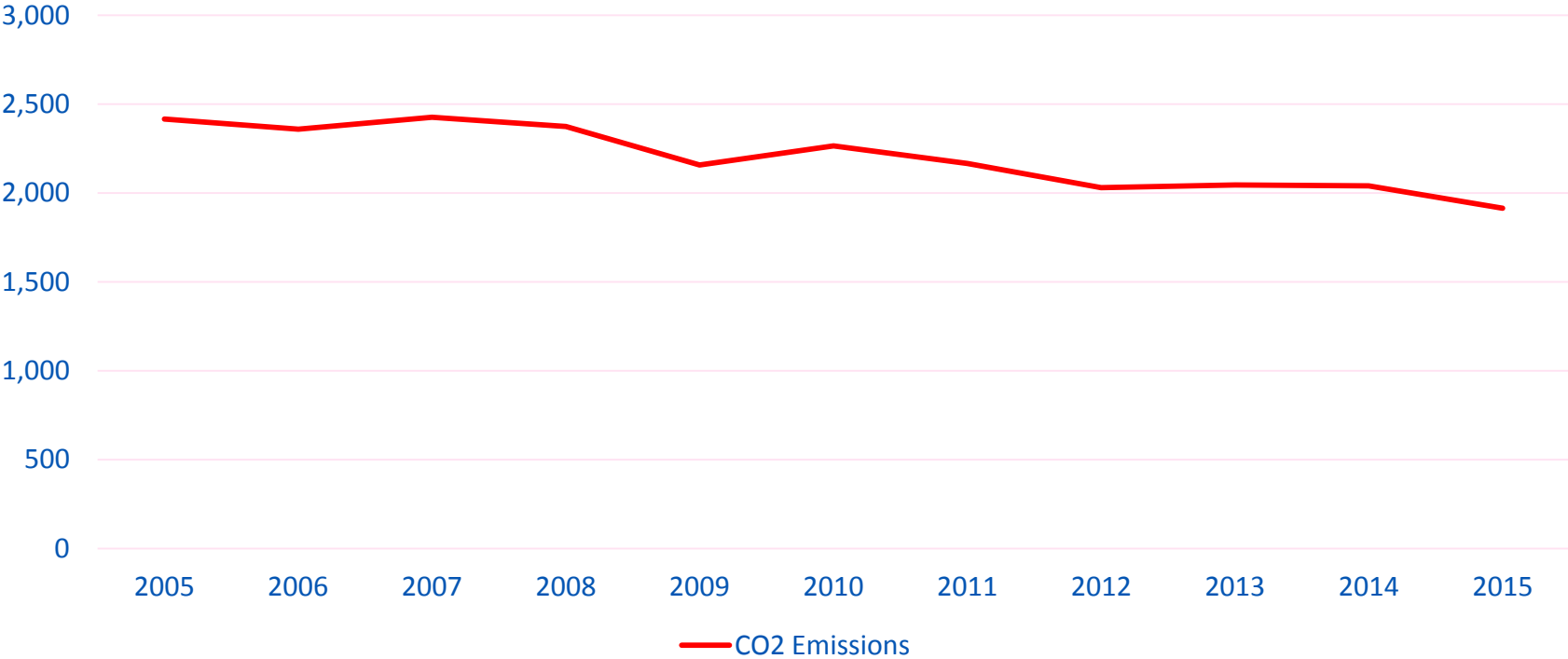
Today's Generation Fleet

- Significant Coal Retirements (100 GW +)
- Some new gas-fired plants
- A lot more renewables



Electric Power CO₂ Emissions Decreasing without Clean Power Plan

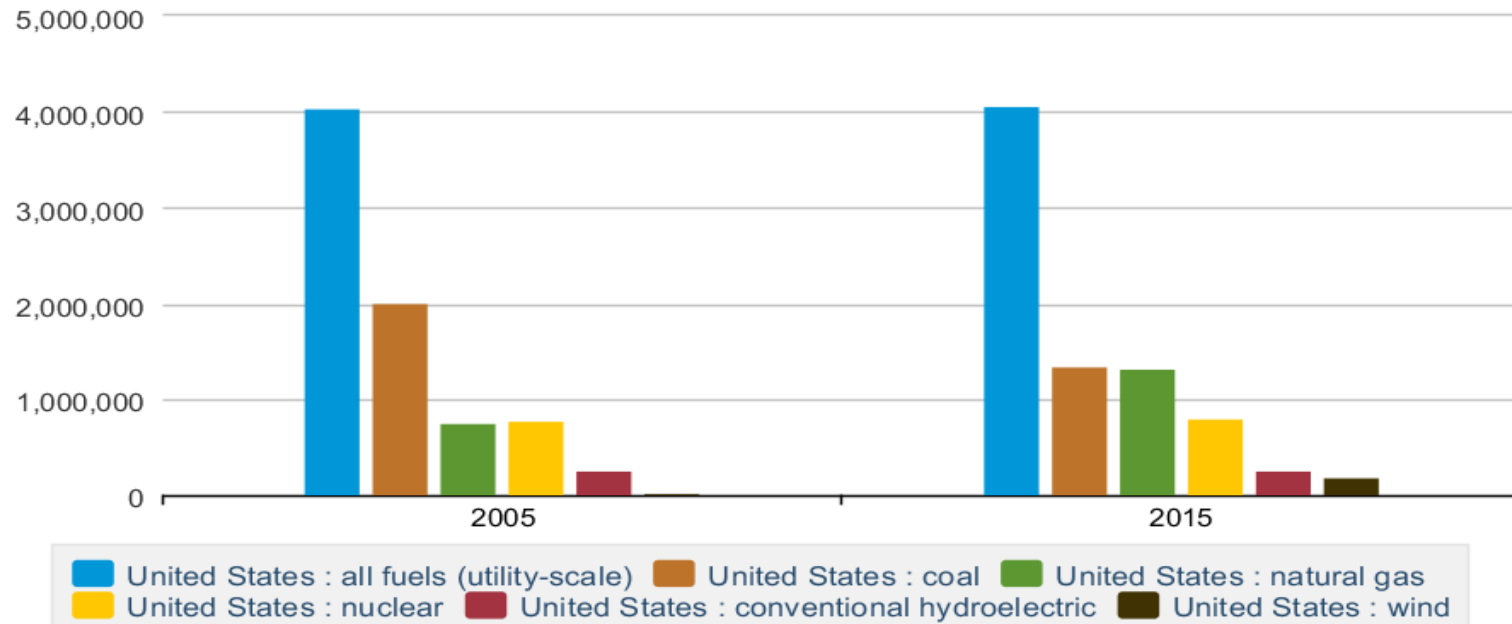
CO₂ Emissions (1,000 tons)



Fuel Mix Changing w/o Clean Power Plan

Net generation for all sectors, Annual

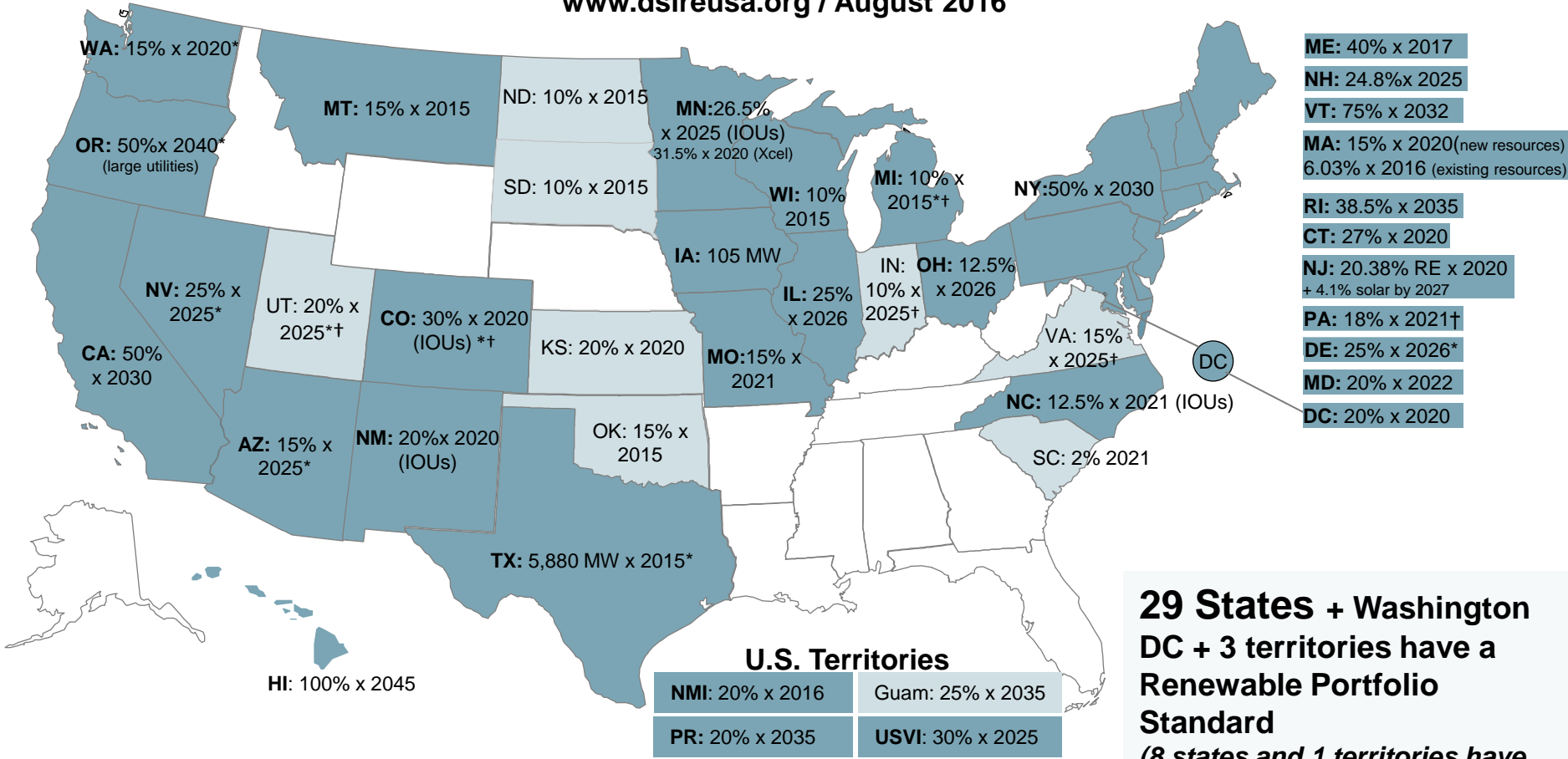
thousand megawatt hours



Data source: U.S. Energy Information Administration

Renewable Portfolio Standard Policies

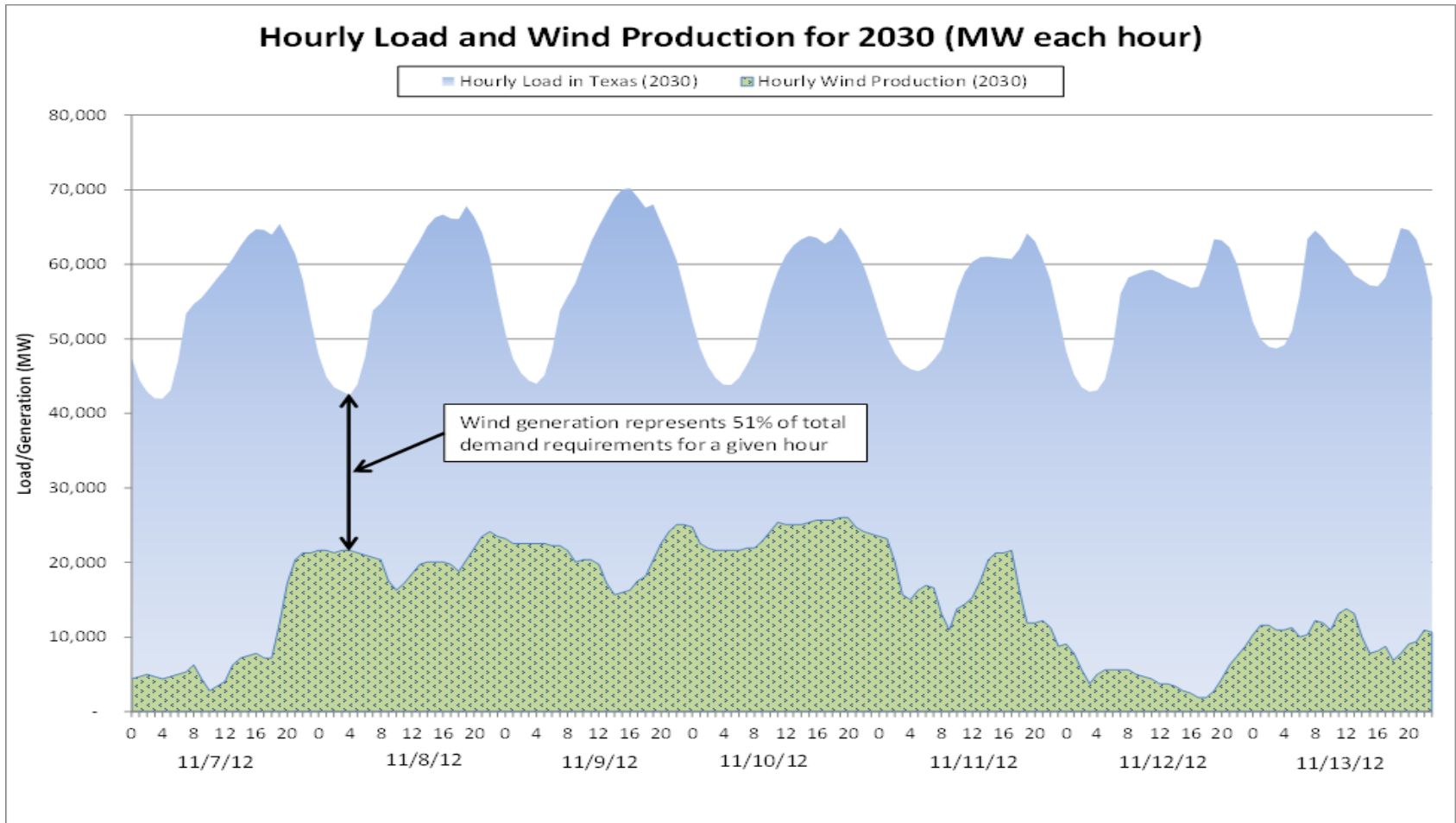
www.dsireusa.org / August 2016



29 States + Washington DC + 3 territories have a Renewable Portfolio Standard
(8 states and 1 territories have renewable portfolio goals)

Renewable portfolio standard
 Renewable portfolio goal
* Extra credit for solar or customer-sited renewables
† Includes non-renewable alternative resources

What does Environmental Dispatch look like?



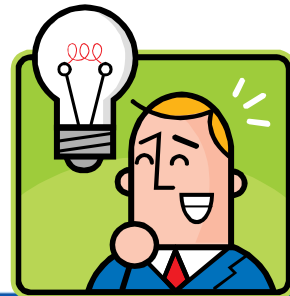
Impacts of Clean Power Plan

- Continues market generation trend but CO₂ reductions now mandatory
- Cost for CO₂ allowances or emission reduction credits
- Reduces fuel diversity
 - Coal significantly disadvantaged
 - Many areas near wind may see premature nuclear closures
- More renewables/natural gas
- Distributed generation increases?
- Energy Storage increases?
- Efficiency improvements



Summary

- Environmental Groups goal is to get rid of coal, thus ALL projects extending plant's life will be challenged
- Big push for renewables
- Lower capital projects easier to get approvals (lower stranded cost potential)
- Natural gas is CHEAP
- Coal unit survival will be on a case by case basis
 - Clean Power Plan to have significant impact
 - Many coal plants willing to spend some money to gain time in future of coal plant decisions



Questions/Discussion

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