



Climate Policy in the Trump Era

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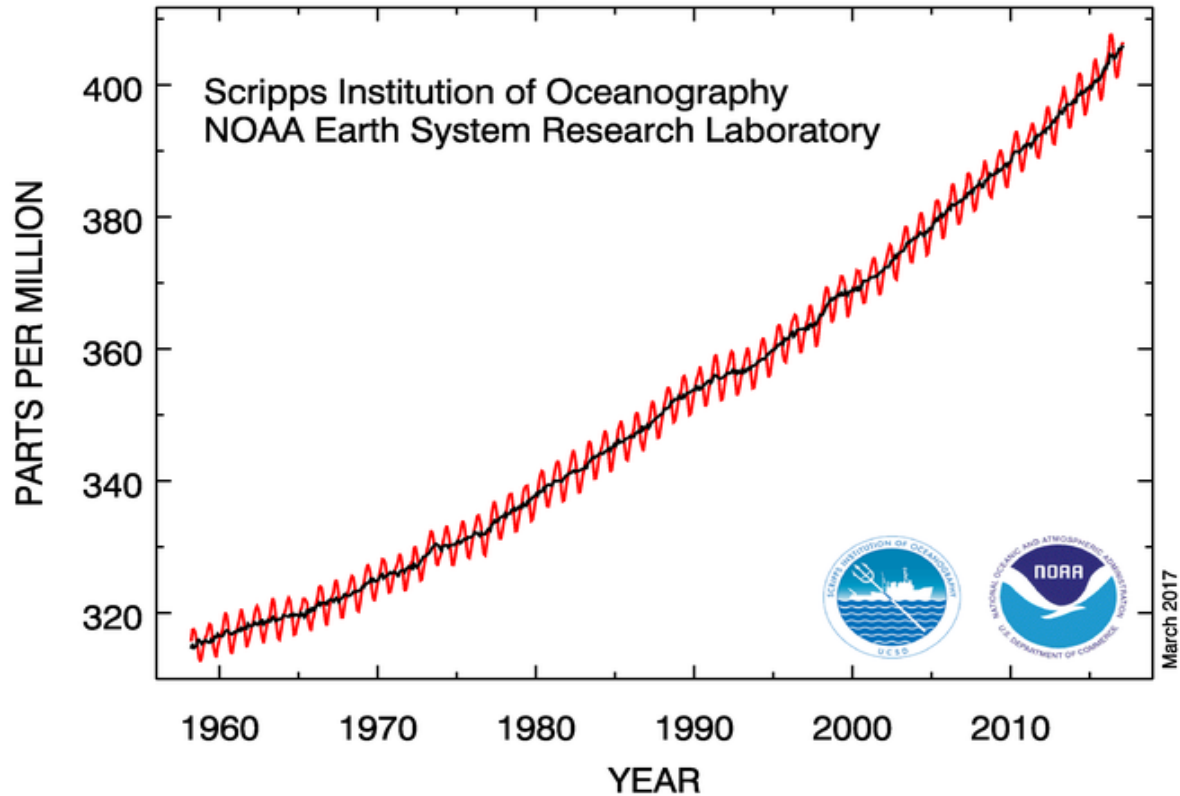
RFF University Fellow and NBER

April 12, 2017

Outline of Talk

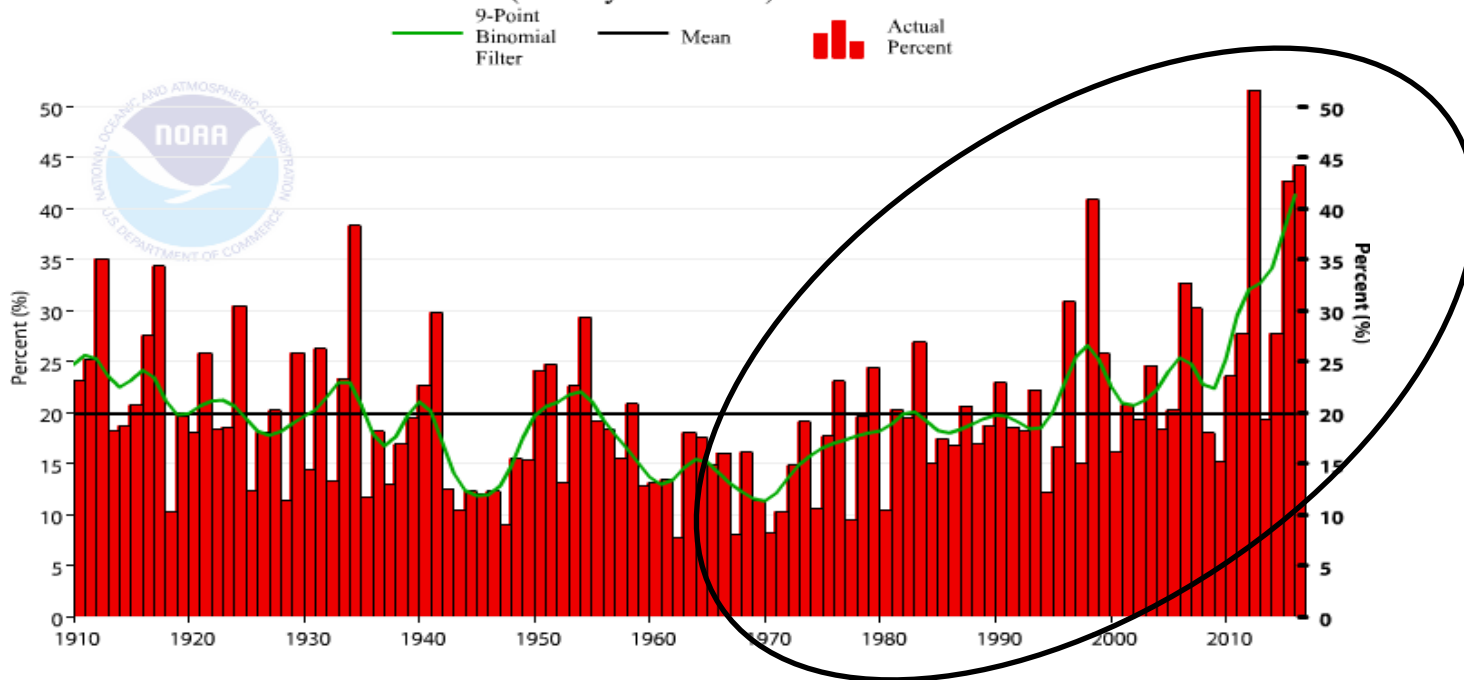
- The Climate Problem
- International Response
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- What's Next?

Atmospheric CO₂ at Mauna Loa Observatory



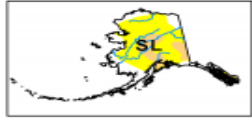
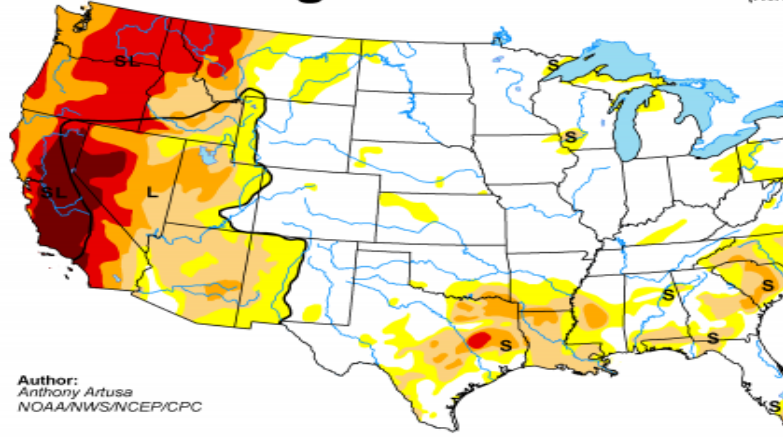
Climate Extremes in the U.S.

Contiguous U.S. CEI (All Steps Combined)
Annual (January-December) 1910-2016



U.S. Drought Monitor

September 1, 2015
(Released Thursday, Sep. 3, 2015)



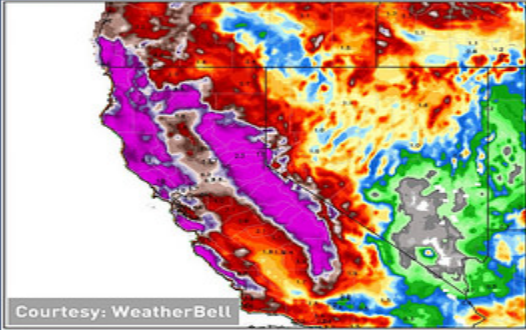
Oroville Dam spillway

An unpaved emergency spillway—a hillside lined with trees and soil—may be needed to keep Lake Oroville from reaching critical levels. If the lake gets too full, the dam could be threatened. The main concrete spillway is damaged.





Precipitation Accumulation Last 2 Weeks



ESTIMATED 17.4 TRILLION
GALLONS OF WATER
IN CALIFORNIA



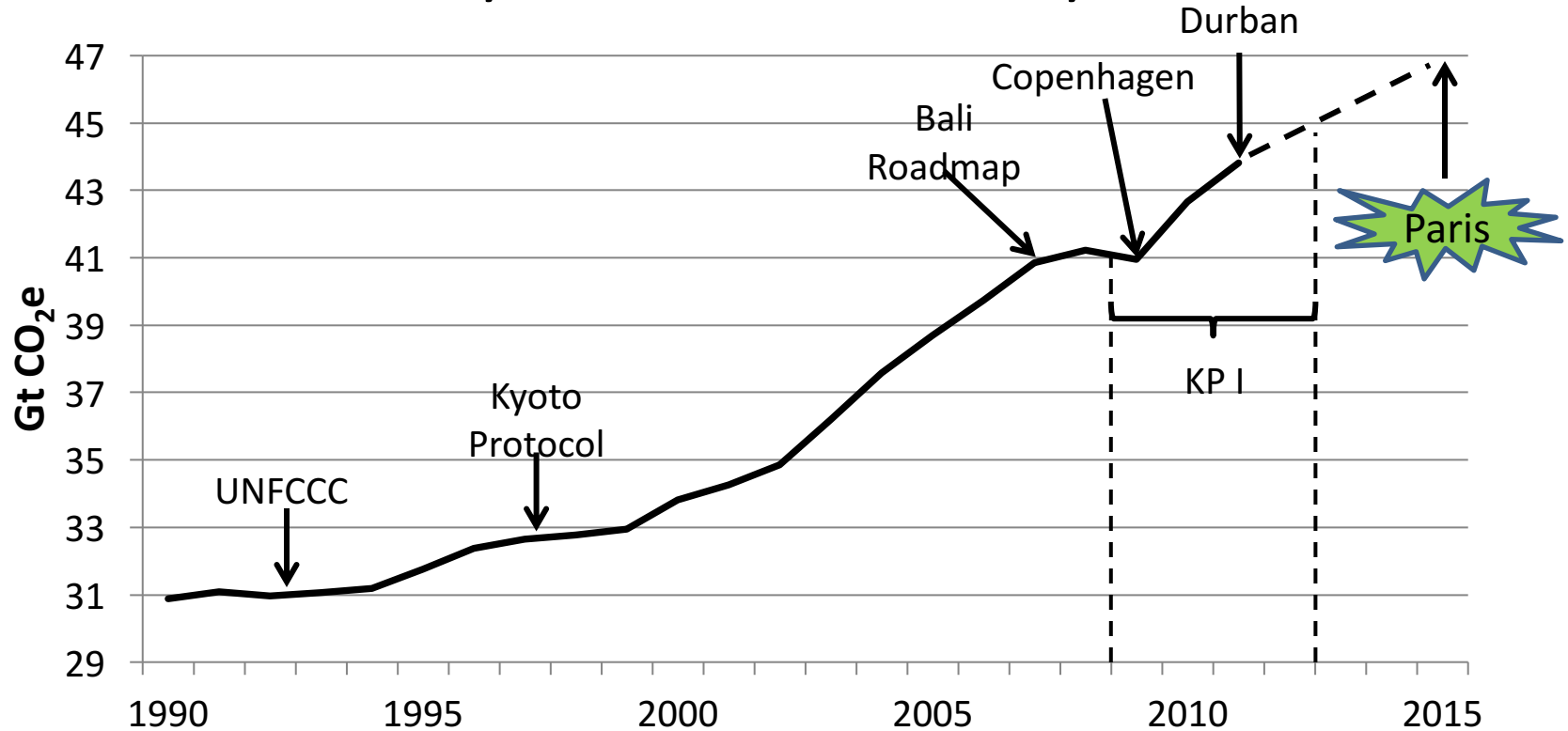
Permanent Drought Impacts



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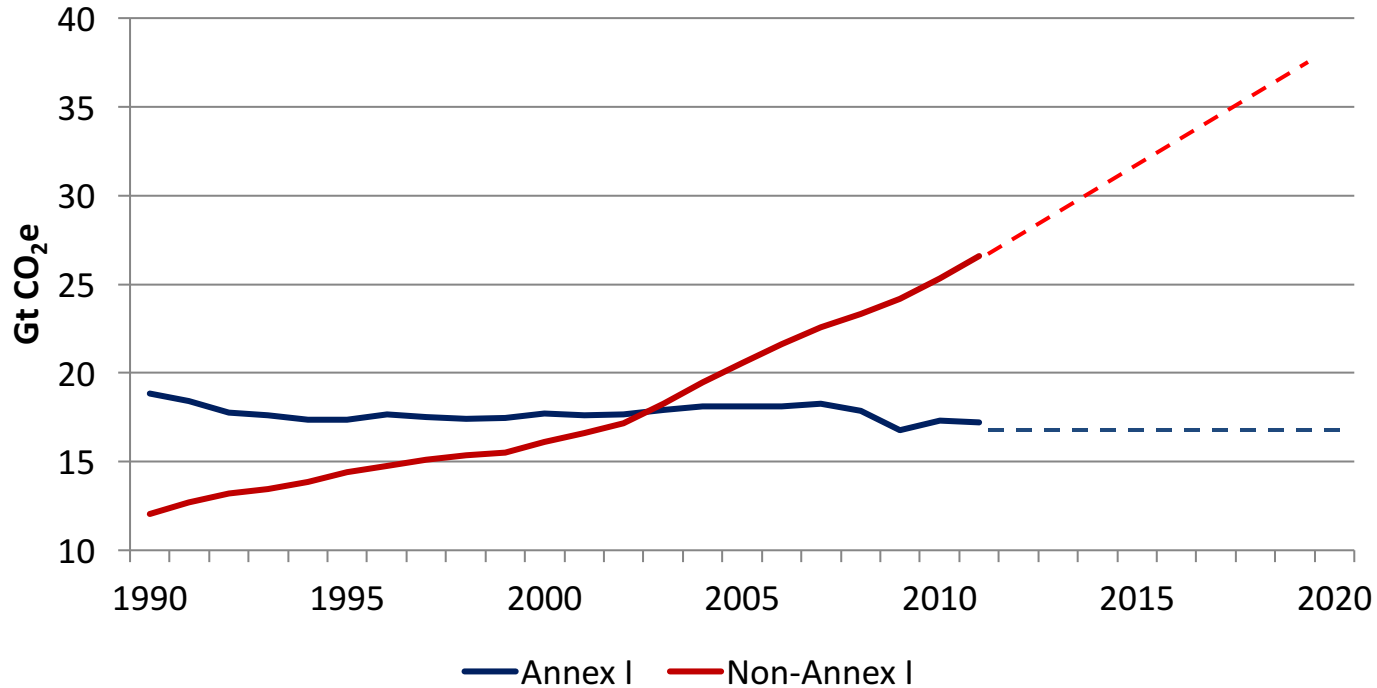
Some Key Climate Policy Dates



Long-Running Issues in UNFCCC

- Common But Differentiated Responsibilities and Respective Capabilities (CBDR-RC)
- Finance
- Nature of Commitments
- Election of Donald Trump

Importance of Universality



Finance

- Developed countries commit to a goal of mobilizing \$100 billion per year by 2020
- Wide variety of sources
 - Public and private
 - Bilateral and multilateral
 - Including alternative sources
- Green Climate Fund established
 - Initial capitalization of \$10 billion exceeded

Nature of Commitments

- Bottom up heterogeneous commitments
 - Policies and measures
 - Targets (absolute and intensity)
 - Timetables
- Other contentious issues addressed in Paris
 - Nature of NDC's
 - Post-2020 finance goal
 - Cycle issue

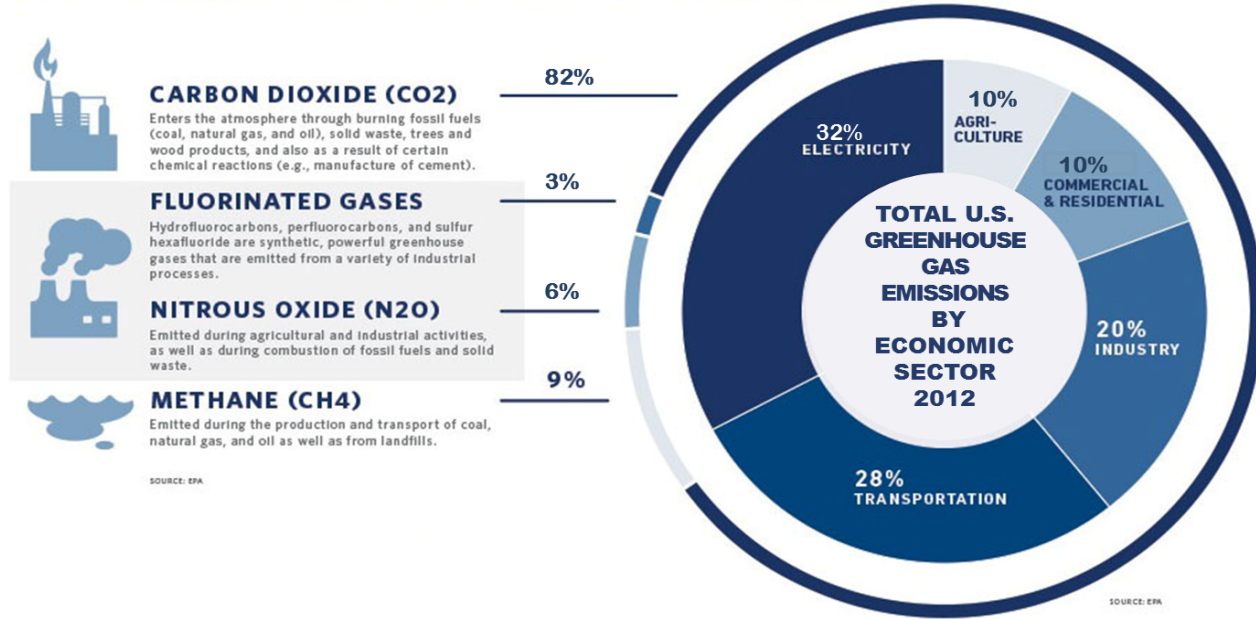
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Obama Climate Action Plan

- Greening the Electricity Sector
 - New power plant rule
 - **Existing power plant rule (CPP)**
 - Renewable Energy Promotion
- Greening the Transportation Sector
 - Increased fuel economy standards
 - Biofuels
- Energy Efficiency
- Addressing Other Greenhouse Gases

Importance of CPP & CAFE



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Trump Executive Orders

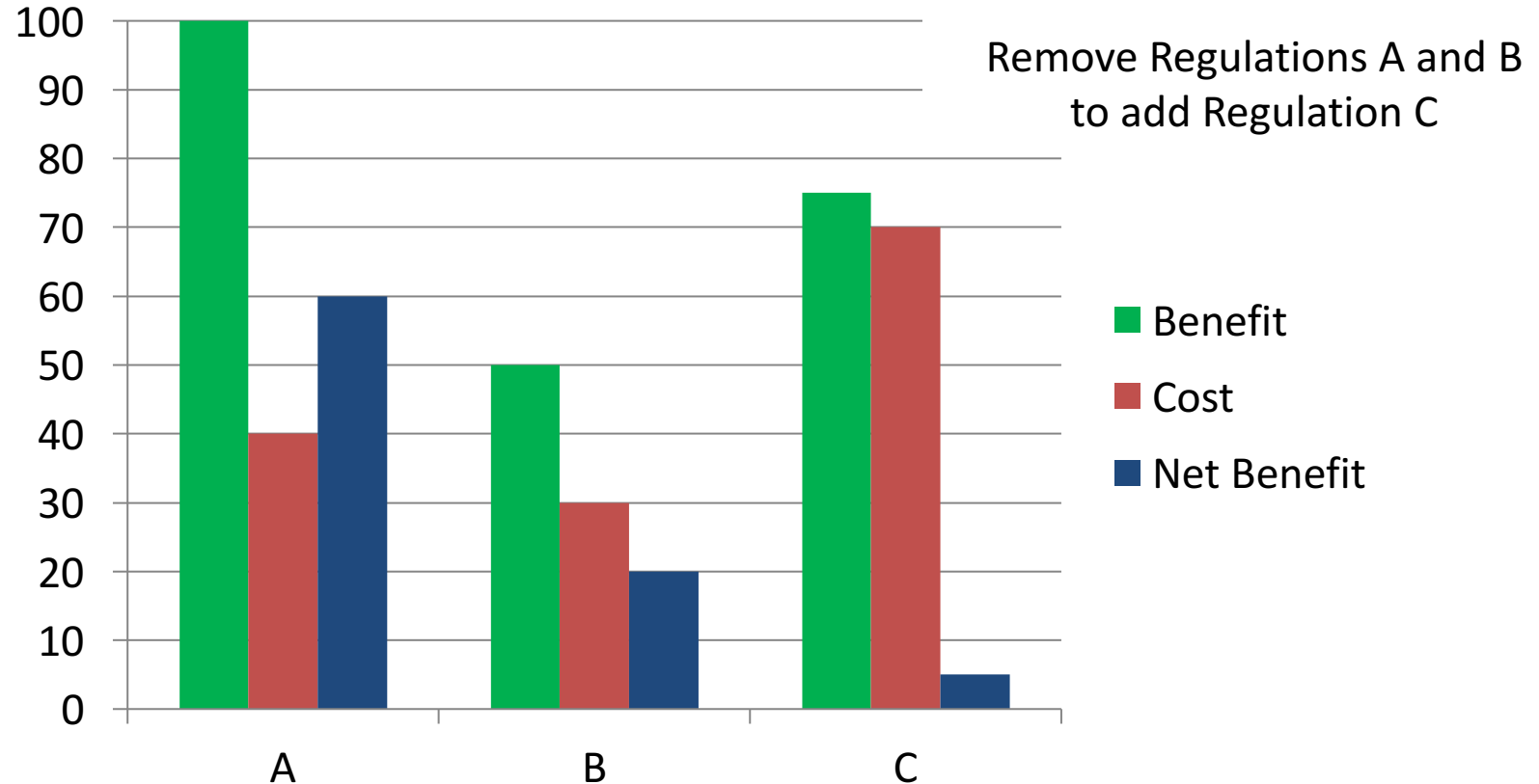
- Reducing Regulation And Controlling Regulatory Costs (January 30)
- Promoting Energy Independence And Economic Growth (March 28)

Regulation Executive Order

“Unless prohibited by law, whenever an executive department or agency (agency) publicly proposes for notice and comment or otherwise promulgates a new regulation, it shall identify at least two existing regulations to be repealed.” (Sec. 2(a))

“...the total incremental cost of all new regulations, including repealed regulations, to be finalized this year shall be no greater than zero...” (Sec. 2(b))

Focus on Costs is Irrational



Energy Independence and Economic Growth

- “Review” Clean Power Plan
- Disband the Interagency Working Group on Social Cost of Greenhouse Gases
 - Withdraw all estimates of the social cost of gases
 - All social cost estimates must be consistent with OMB Circular A-4
 - Discount rate
 - Domestic v. Global impacts

Energy Independence and Economic Growth

- Rescinding Obama Climate Actions
 - Preparing the United States for the Impacts of Climate Change (EO 13653)
 - Power Sector Carbon Pollution Standards (Pres.Mem.)
 - Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment (Pres.Mem.)
 - Climate Change and National Security (Pres.Mem.)

Assessment of Order

- Does little to promote energy independence
- Does little to promote economic growth
 - Jobs in coal mining being lost due to technology and cheap (domestic) natural gas
 - Loosening Federal land coal leasing rules will kill more Eastern coal jobs
 - Ignores job potential of green growth

Assessment of This Order

- Likely to increase policy risk as legal challenges ensue
- Failing to plan for climate change and resiliency short sighted
- Introduces policy incoherence around social cost of greenhouse gases

Outline of Talk

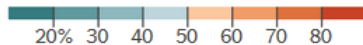
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A total of 76 percent of American voters are "very concerned" or "somewhat concerned" about climate change. Other voter attitudes on climate change are:

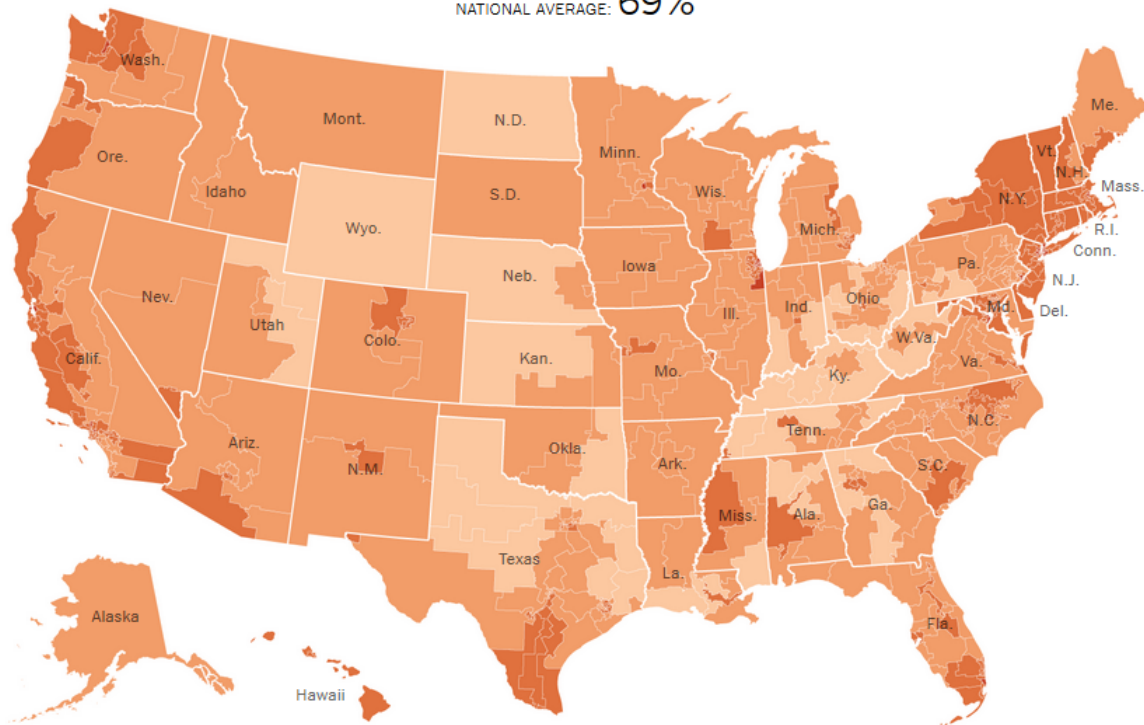
- Voters do not believe 76 - 19 percent that climate change is a hoax;
- Voters believe 65 - 28 percent that climate change is caused by human activity;
- Voters say 62 - 28 percent President Donald Trump should not remove specific regulations intended to combat climate change;
- Voters say 72 - 25 percent it's a "bad idea" to cut funding for scientific research on the environment and climate change;
- The U.S. is doing enough to address climate change, 18 percent say, while 18 percent say the U.S. is doing too much and 59 percent say more needs to be done;
- 56 percent say there has been more extreme or unusual weather in recent years;
- 68 percent of voters say the U.S. can fight climate change and protect jobs, while 24 percent say one goal hurts the other.



Percentage of adults per congressional district who
support strict CO2 limits on existing coal-fired power plants

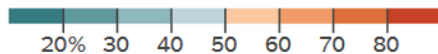


NATIONAL AVERAGE: 69%

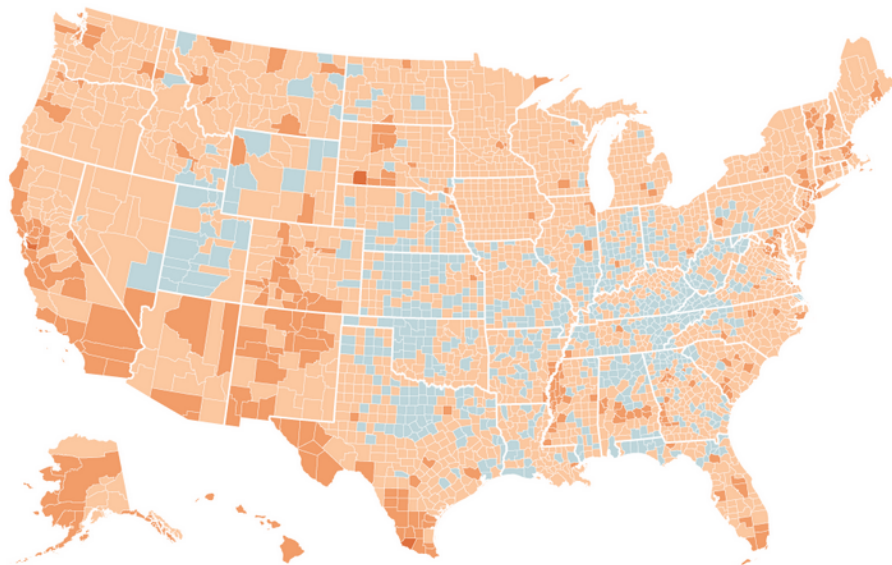




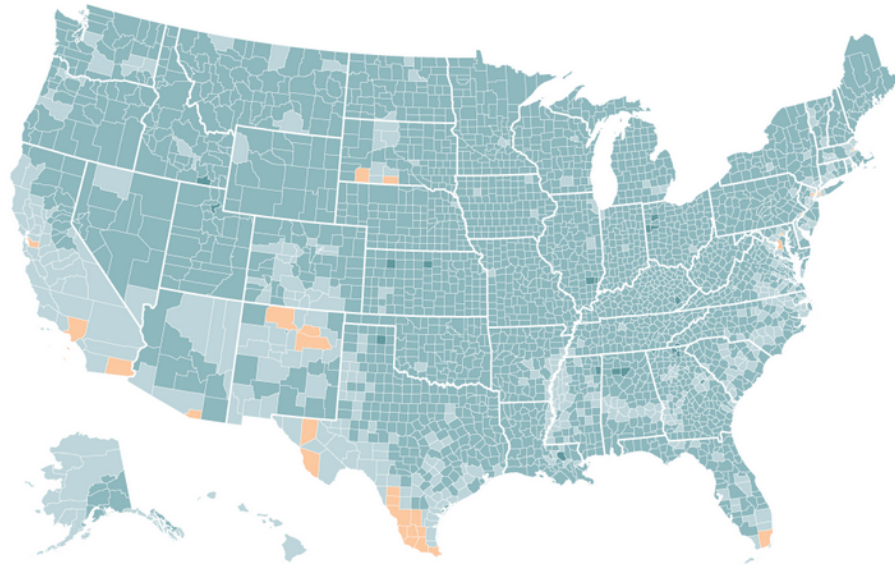
Percentage of adults per county who think ...



Global warming will harm people in the United States



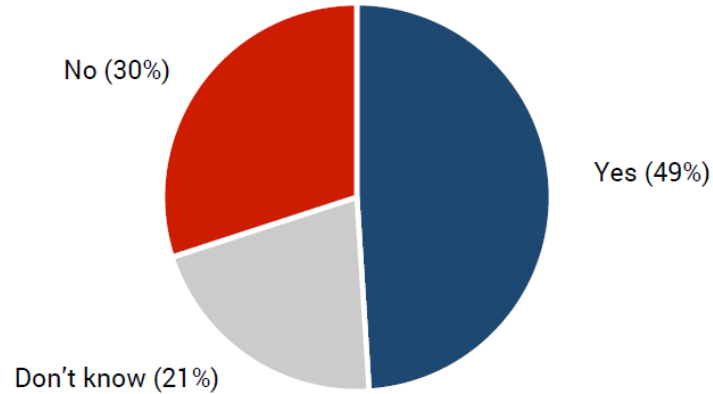
Global warming will harm me, personally



About Half of Trump Voters Think Global Warming is Happening

- Fewer than one in three think global warming is not happening -

Do you think global warming is happening?



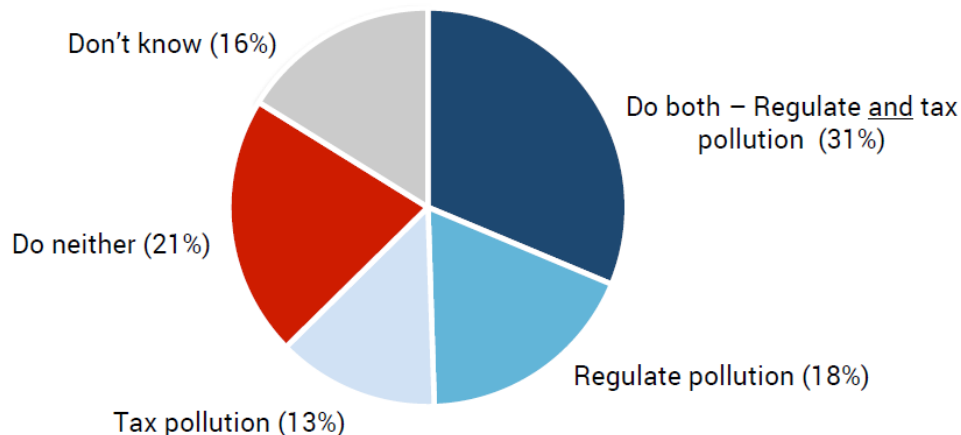
Do you think global warming is happening?

Base: Trump Voters (n=401). November 2016.



More Than Six in Ten Trump Voters Support Taxing and/or Regulating the Pollution that Causes Global Warming

In general, which of these two approaches to reducing the pollution that causes global warming do you prefer, if either?



Governments can reduce the pollution that causes global warming in two main ways: (1) Tax pollution (require companies to pay a tax on the pollution they emit, which encourages them to reduce their emissions). (2) Regulate pollution: (legally require companies to limit the amount of pollution they emit). In general, which of these two approaches to reducing the pollution that causes global warming do you prefer, if either?

Base: Trump Voters (n=401). November 2016.



YALE PROGRAM ON
Climate Change
Communication

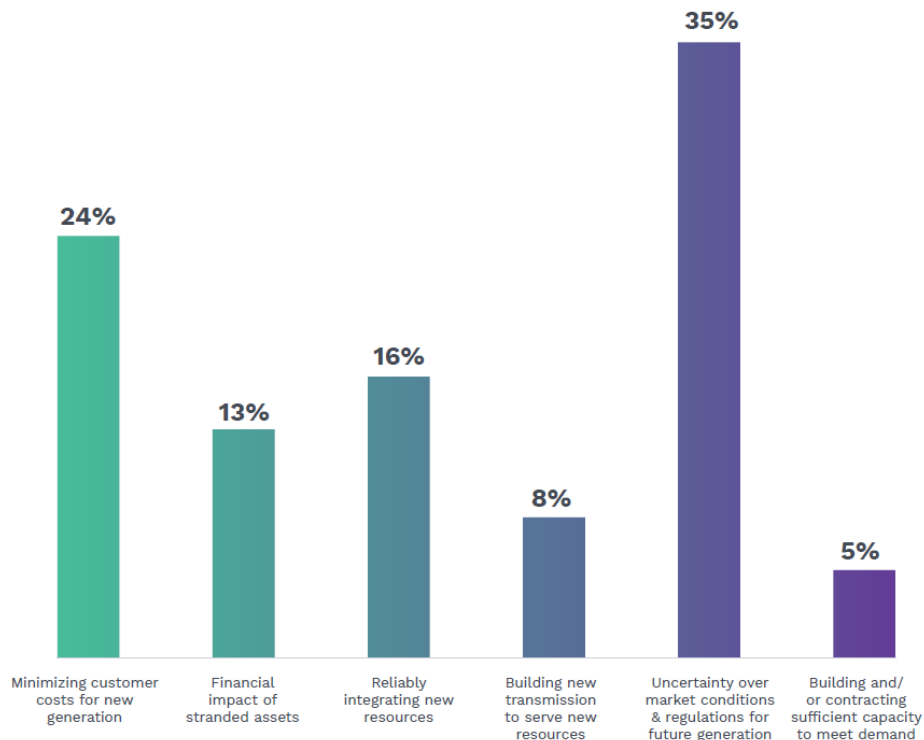


GEORGE MASON UNIVERSITY
CENTER for CLIMATE CHANGE
COMMUNICATION

2017 State of the Electric Utility Survey

- Survey of over 600 electric utility executives

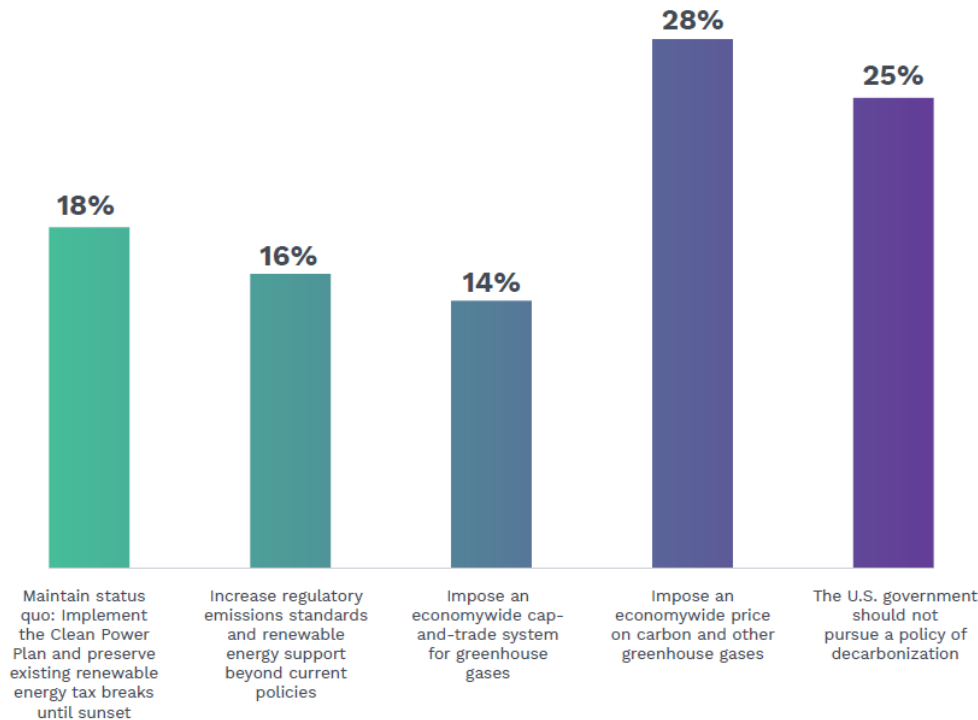
What's the single greatest challenge associated with your changing fuel mix?



2017 State of the Electric Utility Survey

- Survey of over 600 electric utility executives

In your opinion, how should the U.S. federal government approach decarbonization policy?



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Obstacles to the Trump Agenda

- International Engagement
- Challenges to Regulatory Roll-Backs
 - Clean Power Plan
 - CAFE
- State-level Engagement
- Business Engagement Internationally
- *“If you don’t know where you’re going, you might not get there.” -- Yogi Berra*

International Engagement

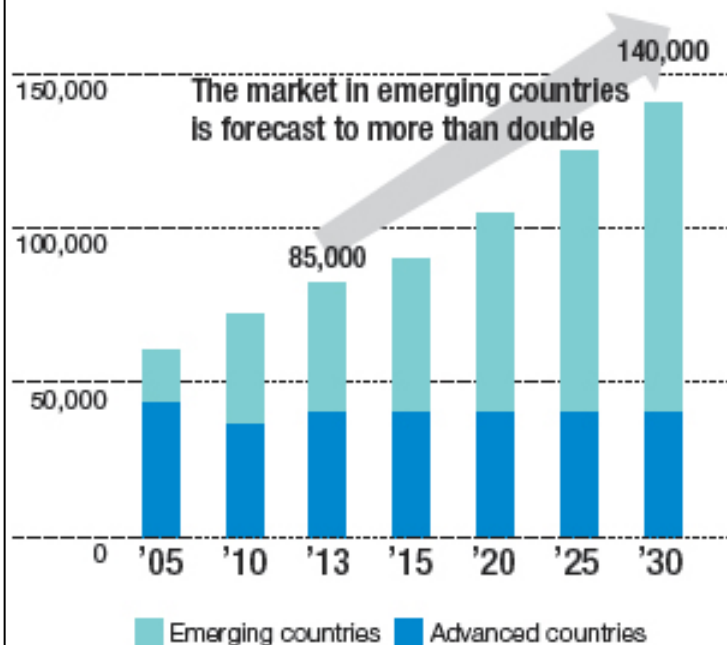
- UNFCCC process will proceed with or without the United States
 - U.S. cedes leadership to China and EU on climate issue
 - G7 and G20 processes likely to push back on U.S. backsliding on previous agreements
 - 2009 G20 agreement on ending fossil fuel subsidies

Challenges to Regulatory Roll-Back

- Legal Challenges (CPP, SCC)
- Market Challenges (CAFE)
 - Global Markets

Global Vehicle Sales Trend and Forecast

(Thousand units)



Source: Data from various statistics compiled by SC-ABeam Automotive Consulting. Data from 2015 onward are forecasts.

Challenges to Regulatory Roll-Back

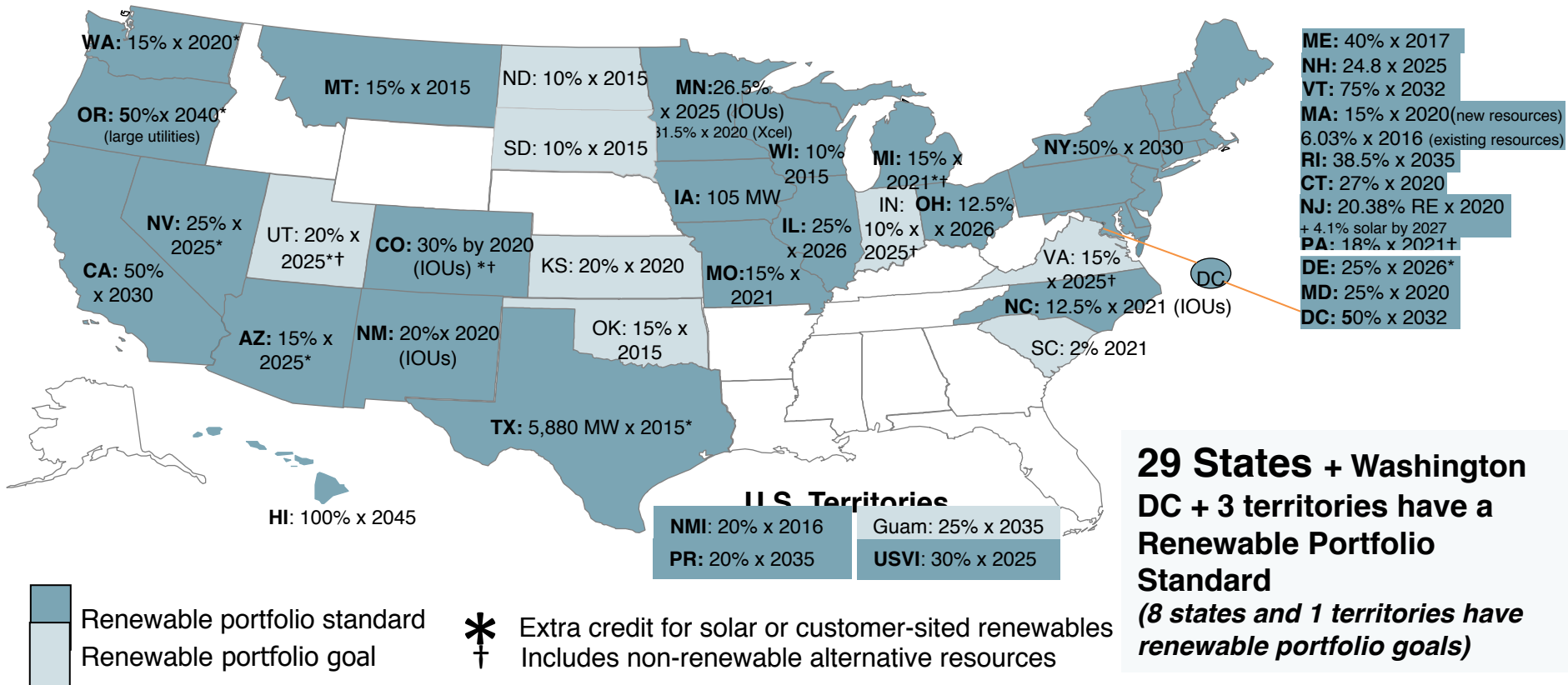
- Legal Challenges (CPP, SCC)
- Market Challenges (CAFE)
 - Global Markets
 - California Market
 - EPA waiver for California fuel economy standards and ZEV
 - World's 6th largest economy

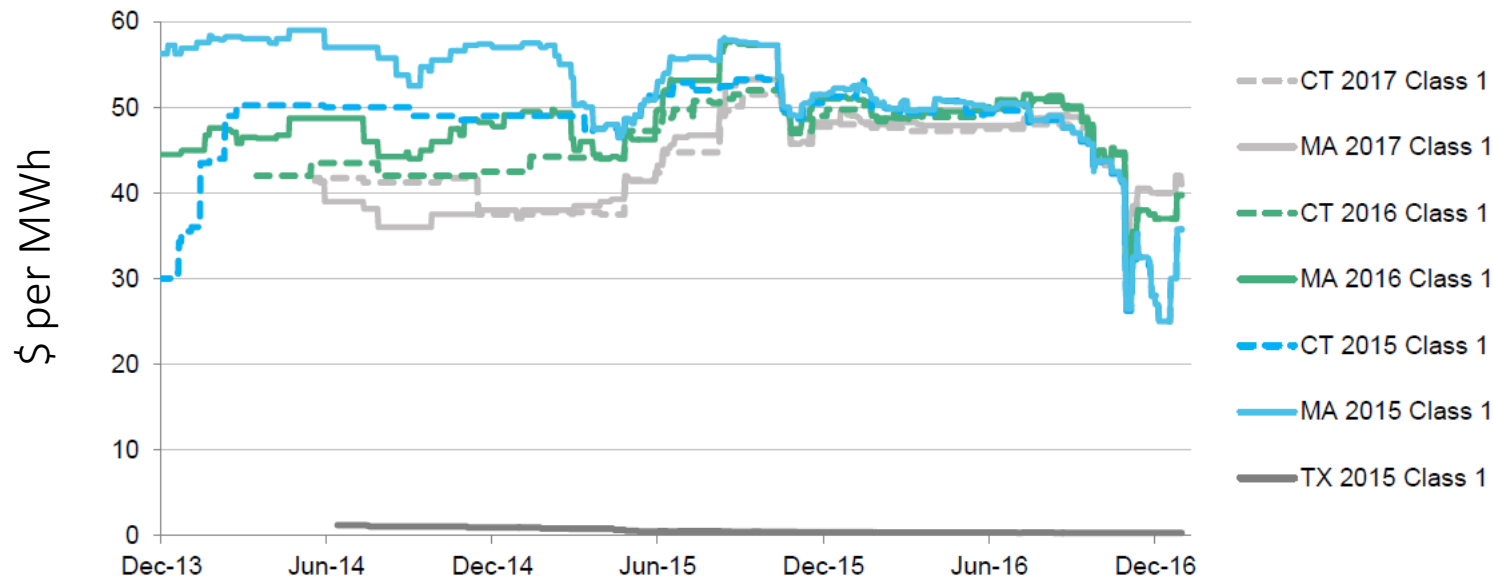
State Level Initiatives

- Carbon pricing
 - Enacted: California, RGGI
 - Proposed: Washington, Oregon, Vermont, Massachusetts
- Fuel economy standards
 - ZEV waiver for CA and 9 other states (NY, NJ, CT...)
- RPS and other initiatives

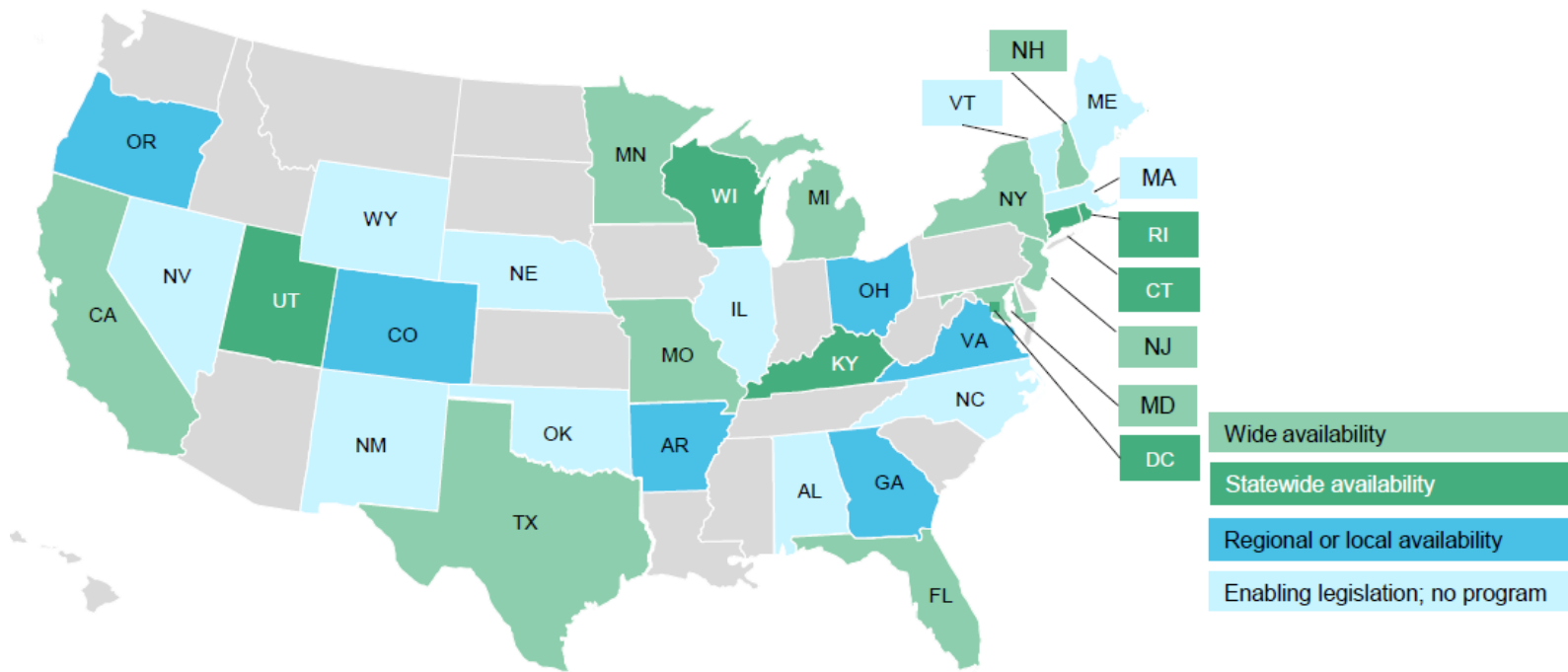
State Level Initiatives: RPS

www.dsireusa.org / February 2017





PACE Financing Availability



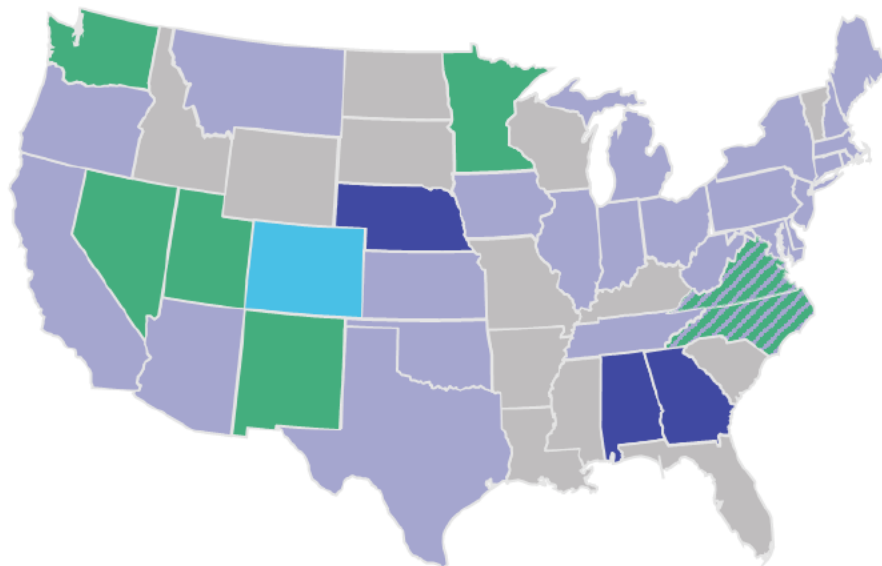
Business Engagement

A uniform price of carbon applied consistently across the economy is a sensible approach to emissions reduction. One option being discussed by policymakers is a national revenue-neutral carbon tax. This would promote greater energy efficiency and the use of today's lower-carbon options, avoid further burdening the economy, and also provide incentives for markets to develop additional low-carbon energy solutions for the future.

Michael Crothers – President, Shell Canada
Steve Williams – President, Suncor Energy
Ben van Beurden - CEO, Royal Dutch Shell
Bob Dudley – CEO, BP

--*ExxonMobil CEO Darren Woods*
February 23, 2017

How corporates procure clean energy, by state



- Corporate PPA available
- Green tariff available
- Green tariff under review
- One-off renewable energy deal
- No green tariff, one-off deal or corporate PPA

Business and Policy Risk

- Challenge for business is to manage in a global environment with wildly divergent policies
- Considerable policy risk added when US government policy swings wildly between administrations
- The big unknown: who will the president listen to last?

Optimist or Pessimist?

- The glass is half empty...
 - The death of the Clean Power Plan and CAFE post-2021
 - Defunding EPA, Green Climate Fund, ARPA-E...
 - Social cost of carbon falls from \$43 a ton to \$4 a ton
 - Disengagement of U.S. from international climate negotiations

Optimist or Pessimist?

- The glass is half full...
 - Public opinion at odds with Trump Administration approach
 - CPP faced serious risks anyway; endangerment finding still holds
 - Market forces will drive continued fuel economy innovation
 - Congressional advocates will protect many key government spending programs
 - Republican plan for a populist carbon tax

Thank You

http://works.bepress.com/gilbert_metcalf/



New Investment in Clean Energy
BILLIONS OF DOLLARS, 2004-14

