

Whither U.S. Climate Change Policies?

Conjectures on the Impact of Trump

John Jurewitz

Pomona College, USA

Dan Mazmanian

University of Southern California, USA

REFORM GROUP

Salzburg Austria

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Three Key Elements of the Obama Policy Baseline

1. Decarbonize the U.S. **electricity sector**
 - ❖ **Clean Power Plan**
2. Decarbonize the U.S. **transportation sector**
 - ❖ **Vehicle Emission Standards**
3. Exercise **global leadership**
 - ❖ **Recruit China**
 - ❖ **Sign Global Agreement (Paris)**

Basic Structural Vulnerabilities to Achieving the Obama Policy Baseline

- **Vulnerable statutory foundation:** The federal statutory authority to regulate GHGs resulted from the **Supreme Court's (5-4) ruling** interpreting of a statute (the **Clean Air Act**) that was not explicitly adopted by Congress with the clear intent of regulating GHGs.
 - Thus, this statutory foundation is **politically vulnerable to legislative amendment or judicial reconsideration** (in view of the 5-4 split).
- **Heavy reliance on Executive Orders and administrative regulations:**
 - A new administration has unconstrained authority to rescind an earlier Executive Order.
 - Rescinding or modifying a previously fully litigated administrative regulation is more difficult, but far from impossible.

Likely Impacts of Trump Administration on US Energy Path and Paris Commitments

- Absent the support of the national government, the transition to **renewable energy** will be dependent on **market forces, technology, and state policies**.
- Some states and numerous cities will pick up some of the slack, but **likely insufficient for meeting the US INDC**.
- Absent national policies and subsidies, **renewable energy and electric vehicle technology leadership will shift away from the US**.
- **US will lose/has relinquished** its position established under Obama as a **global leader** on climate change to other nations.
- **Trump posture will embolden laggards** (shirkers) in the international community from living up to their INDC and climate change policy commitments.

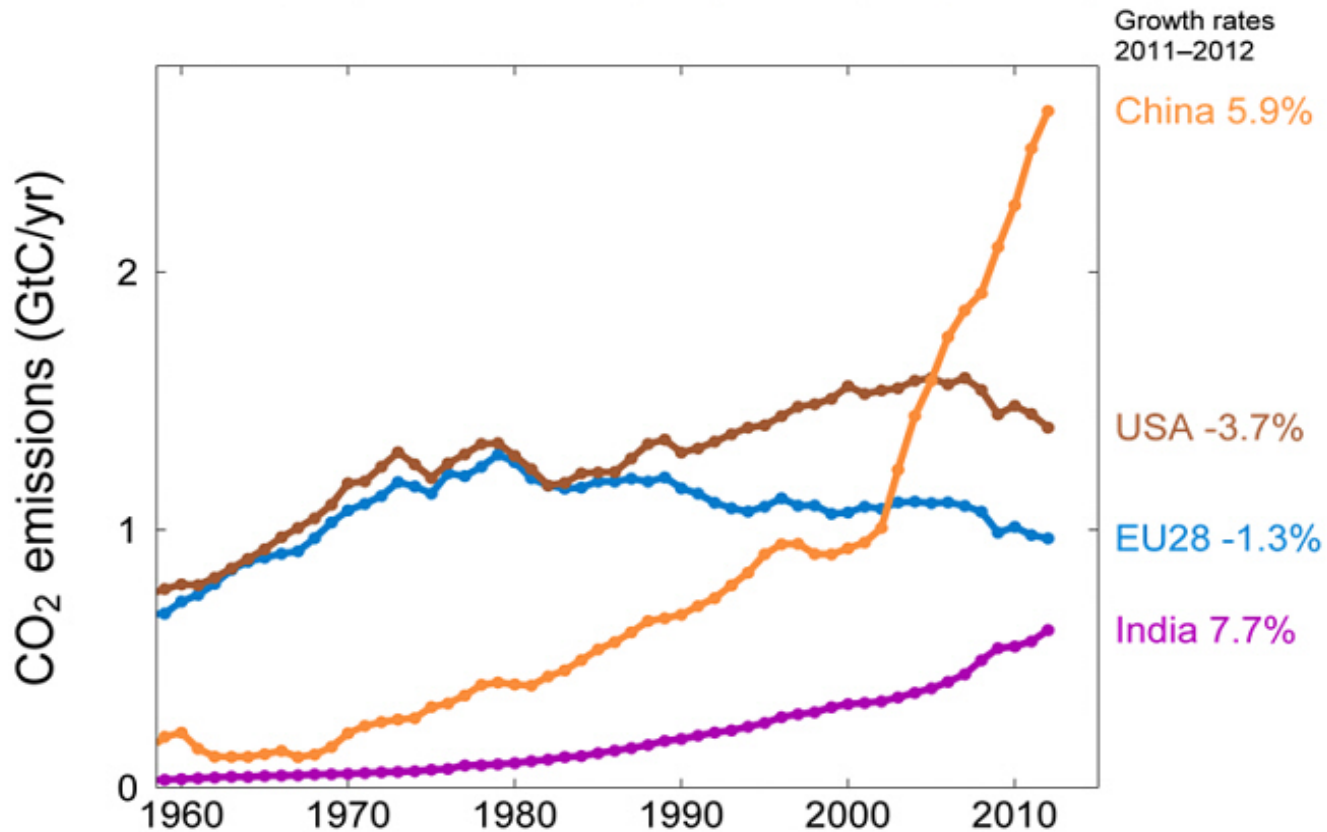
Outline

- 1. Sources and trends in US GHG emissions**
- 2. Obama's policy "baseline": U.S. climate policy before Trump**
- 3. Challenges to achieving the Obama policy baseline even in the absence of Trump**
- 4. Trump's actions and policies so far**
- 5. Responses by cities, states, and NGOs to Trump's actions: How much can they compensate?**
- 6. Conjectures about future Trump policies**

Some Background Facts about U.S. GHG Emissions and Their Sources

International Trends in Fossil Fuel GHG Emissions, 2012

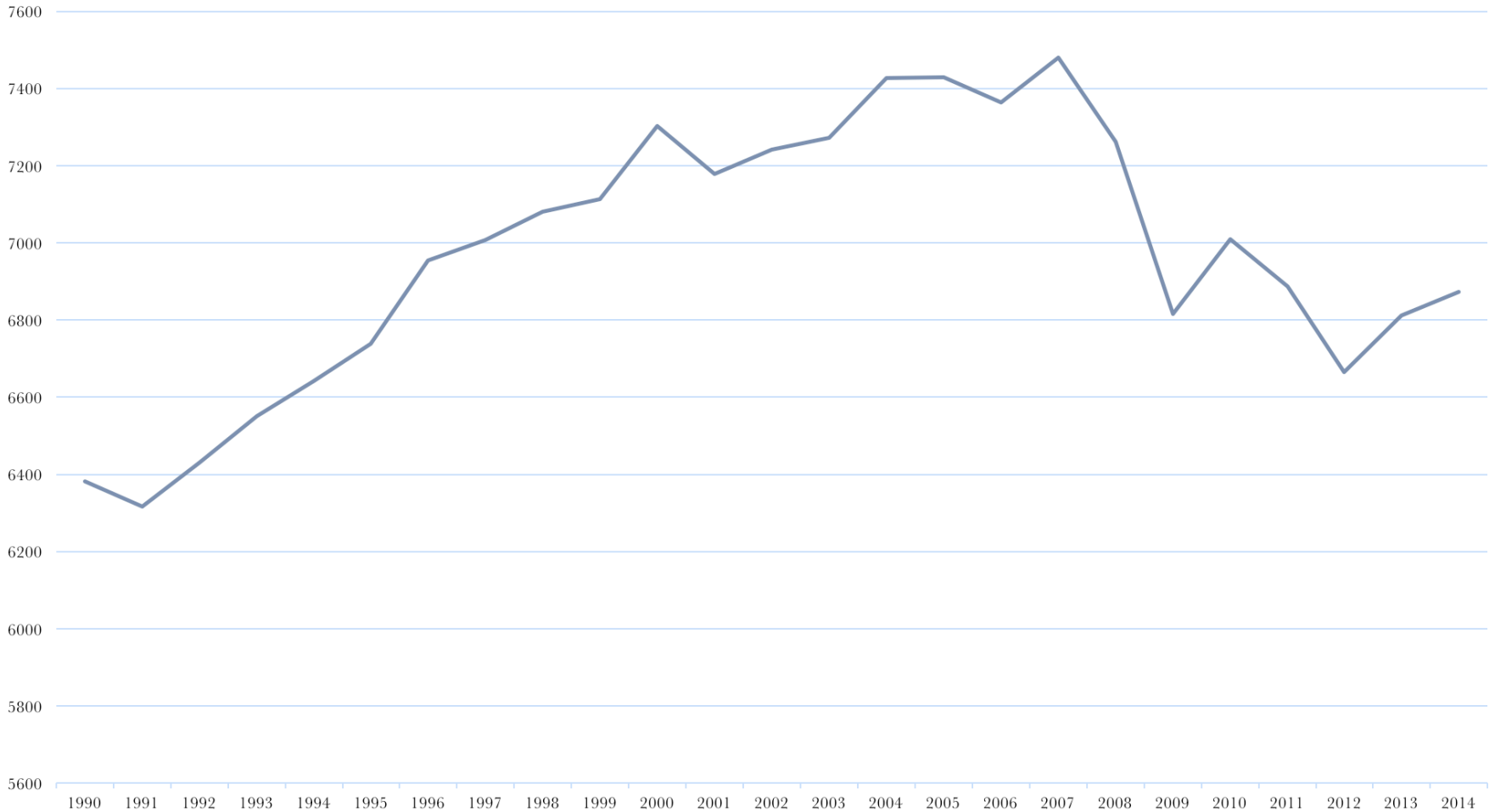
Top four emitters in 2012 covered 58% of global emissions
China (27%), United States (14%), EU28 (10%), India (6%)



Source: Global Carbon Project

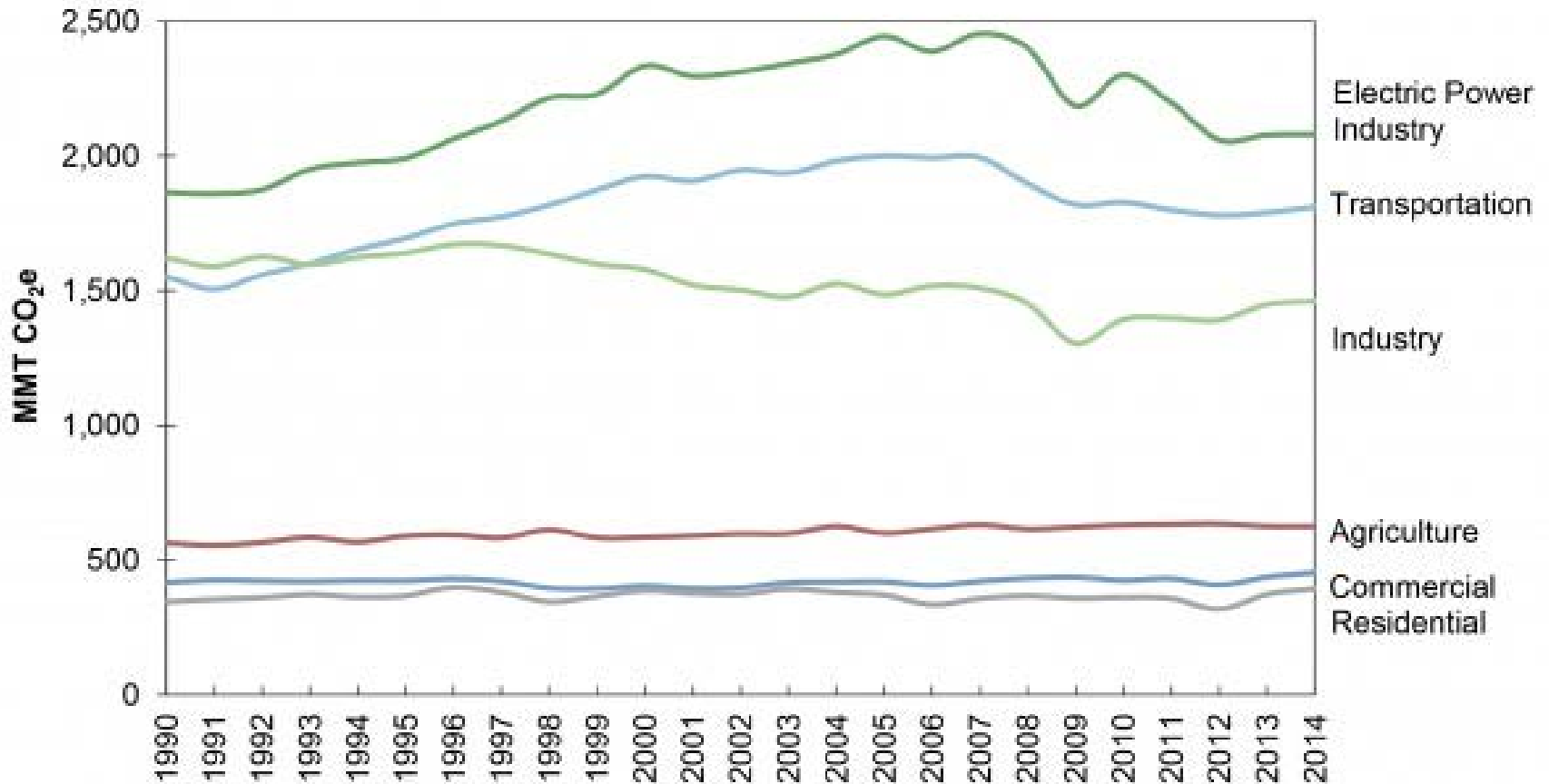
U.S. GHG Emissions Have Been Declining Moderately Since 2007

Trends in U.S. Greenhouse Gas Emissions, 1990 - 2014



EPA: 2016 Inventory of GHG Emissions

U.S. Greenhouse Gas Emissions 1990-2014: Trends by Economic Sector



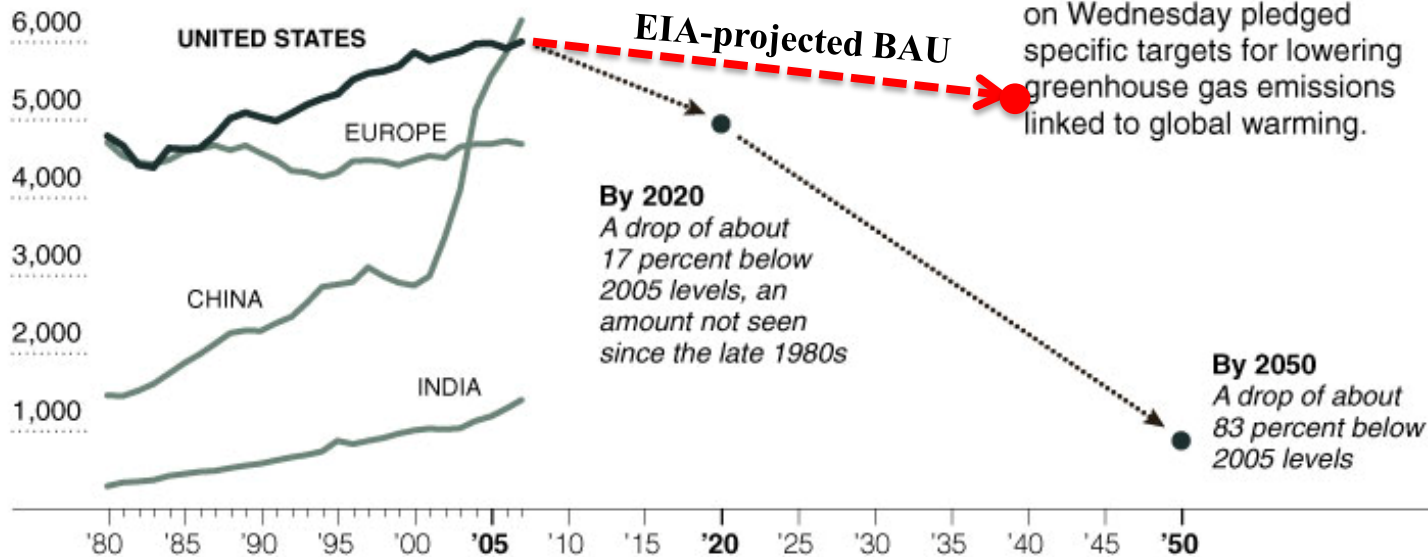
U.S. Climate Policy before Trump:
The Obama Policy Baseline

In **2009**, in advance of **COP-15 in Copenhagen**, Obama announced a pledge to reduce U.S. GHG emissions by **17% below 2005 levels by 2020** and **83% by 2050**.

The New York Times

November 26, 2009

Carbon emissions from energy consumption
Million metric tons



Source: Energy Information Administration

- But Obama failed to get full Congressional support. The American Clean Energy and Security Act passed the House, but failed in the Senate.

In 2013 Obama Announced His Centerpiece “Climate Action Plan”

Electricity

- Reduce **existing power plant** emissions primarily by **switching from coal to gas**
- Promote use of **renewable power**

Transportation

- Increase vehicle **fuel economy**
- Develop and deploy **advanced transportation technologies**

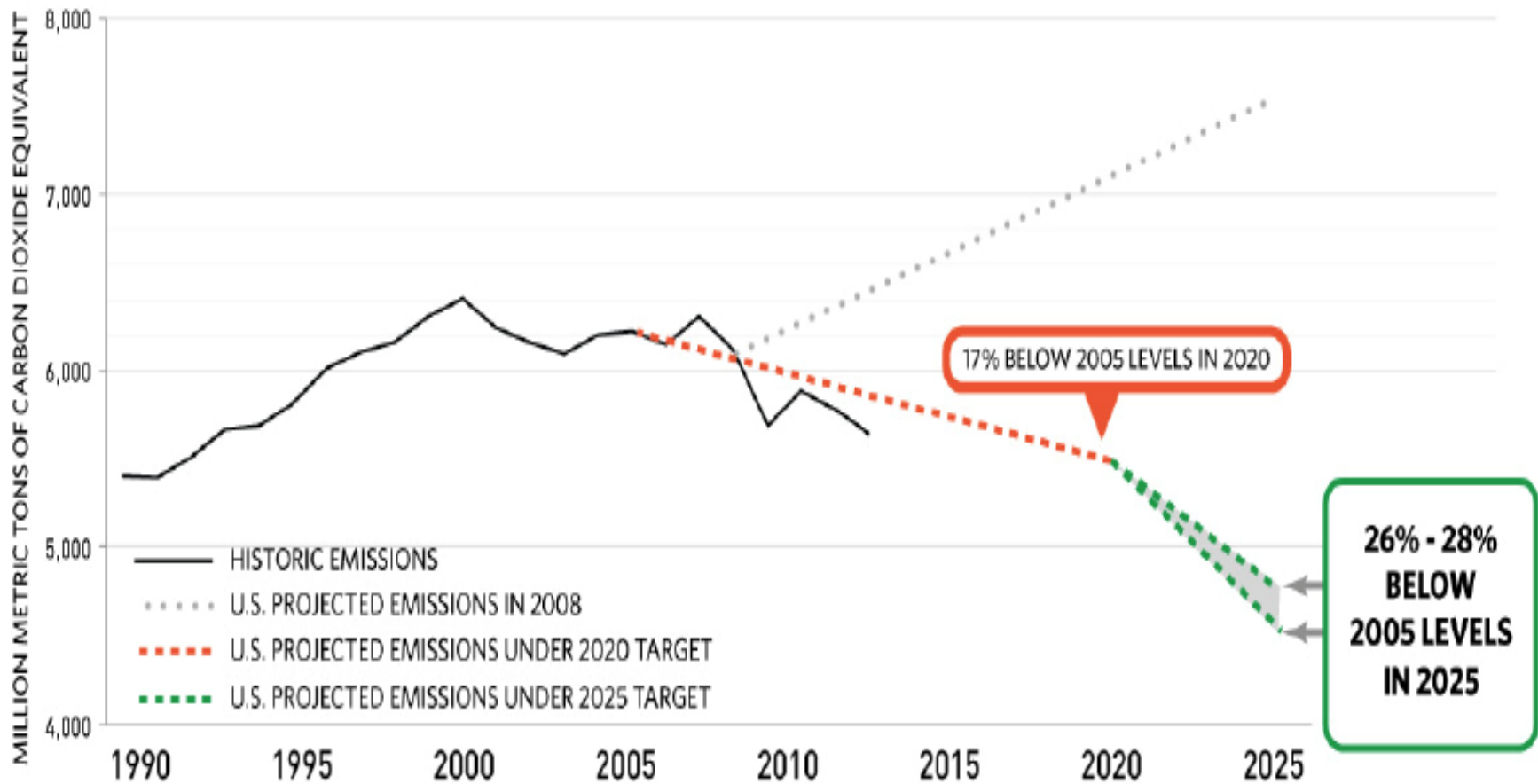
Appliances and Buildings

- Increase **energy efficiency** practices and investments

Non-Carbon Emissions

- Reduce **HFC** emissions
- Reduce **Methane** emissions

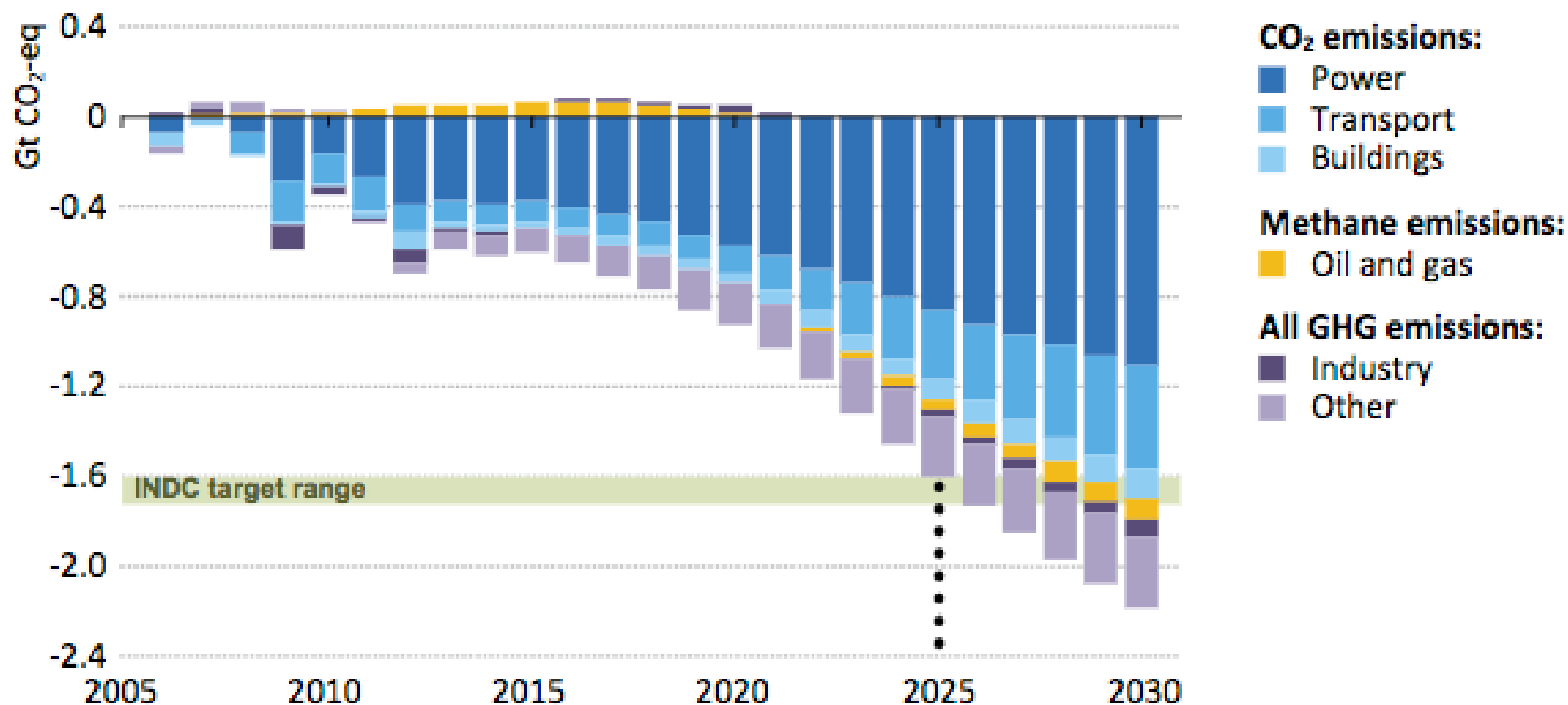
In December 2015 the U.S. Signed the Paris Agreement Committing to an INDC Pledge of 26-28% Below 2005 Levels by 2025



The US Paris INDCs Are Based on the Forecast Effects of Market Forces, State Policies, and Some Key Federal Policies

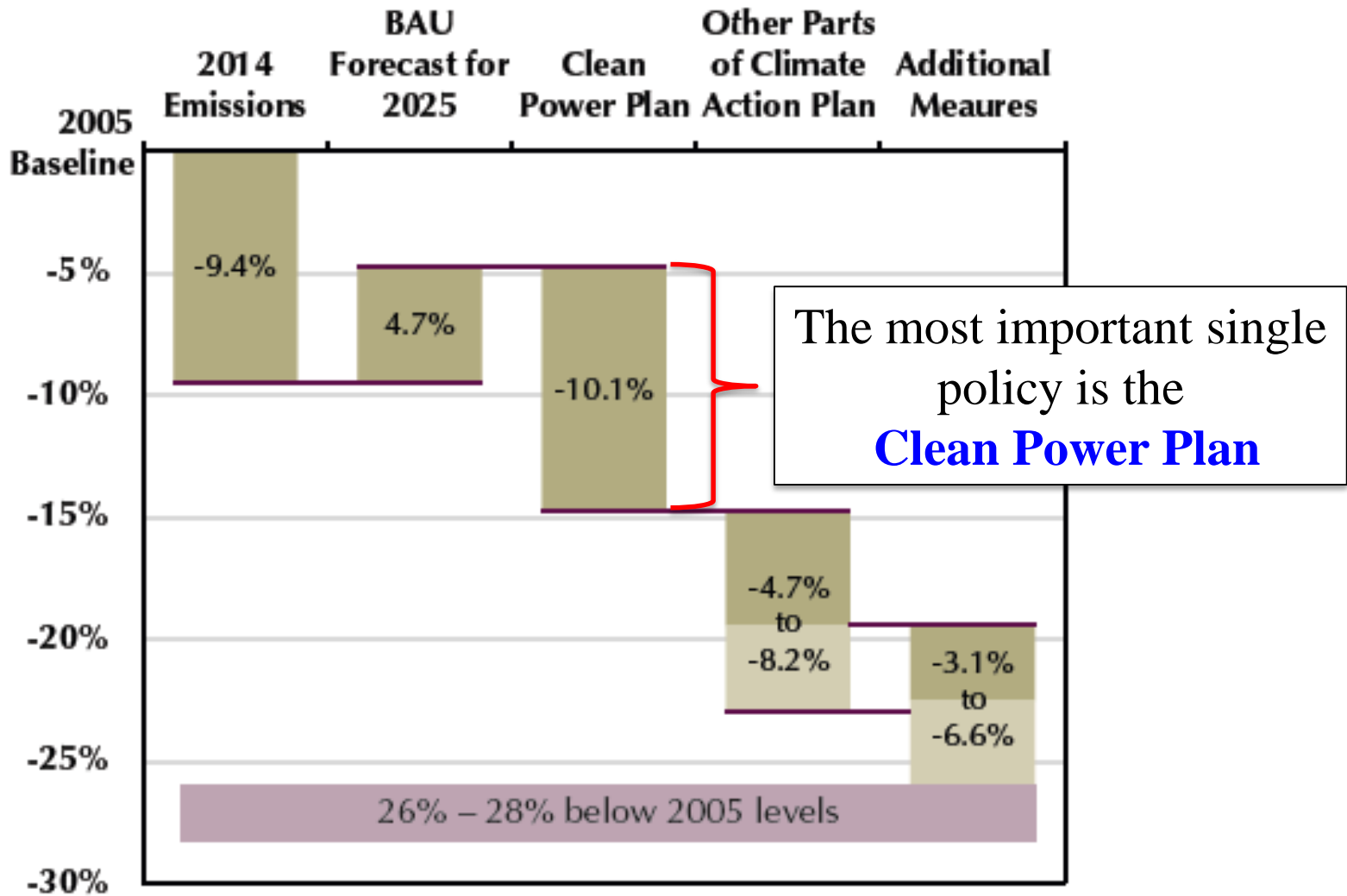
- **Key market forces:**
 - Substitution of **gas for coal**
 - Continued declines in cost of **renewable power generation**
- **Key State policies:**
 - State Renewable Portfolio Standards (**state RPSs**)
 - Commercial and residential building **efficiency standards**
- **Key federal policies:**
 - **The Clean Power Plan**
 - **Vehicle GHG emissions standards (fuel economy standards)**

The Clean Power Plan and Vehicle Emissions Standards are the Two Most Important Measures in Achieving the U.S. Paris Commitments

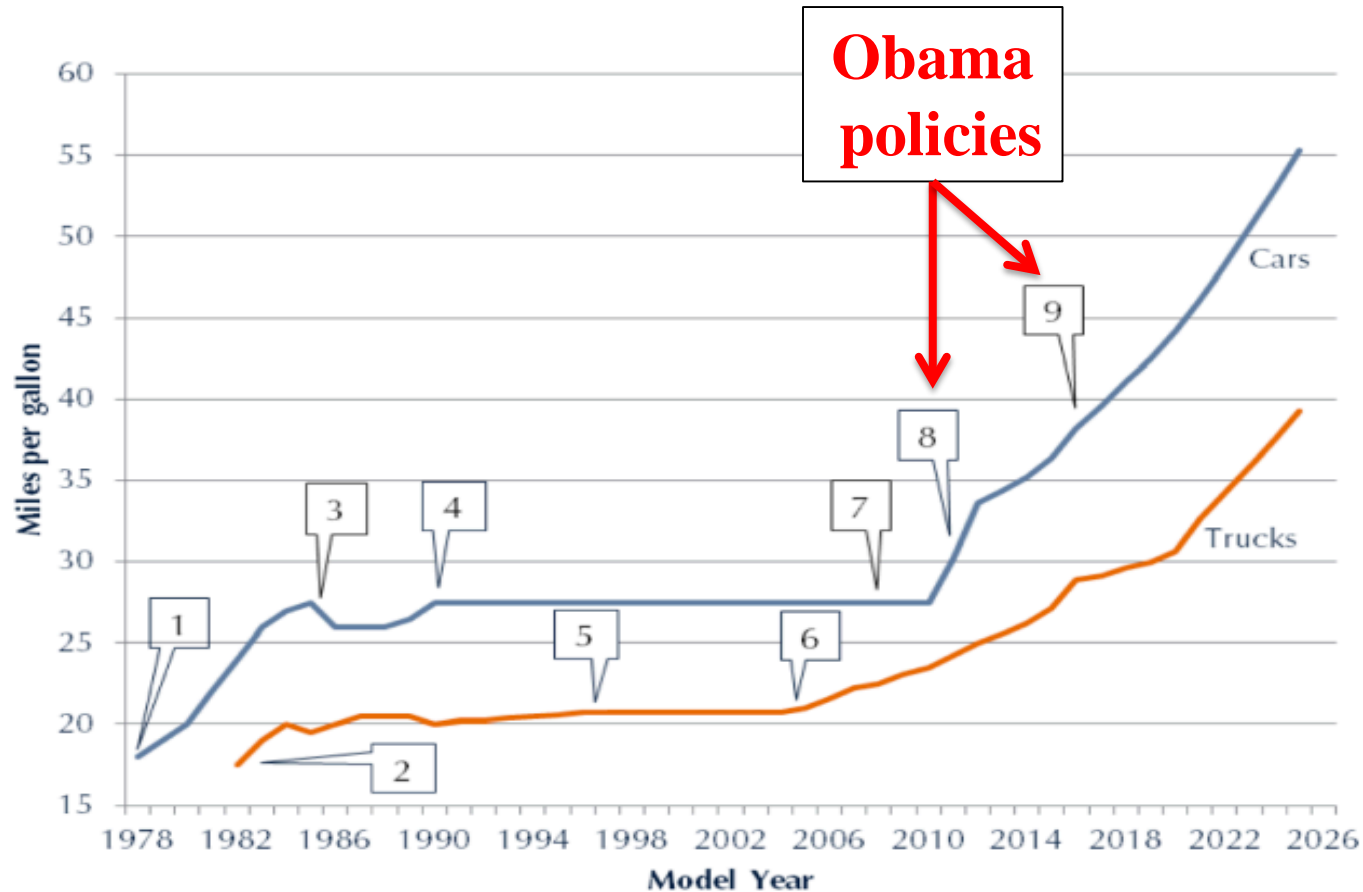


Source: IEA: Energy and Climate Change

Obama's Broad Plan for the US Achieving Its Paris INDC Pledges



Obama's Plan Would Increase Light-Duty Vehicle Fuel Economy Standards

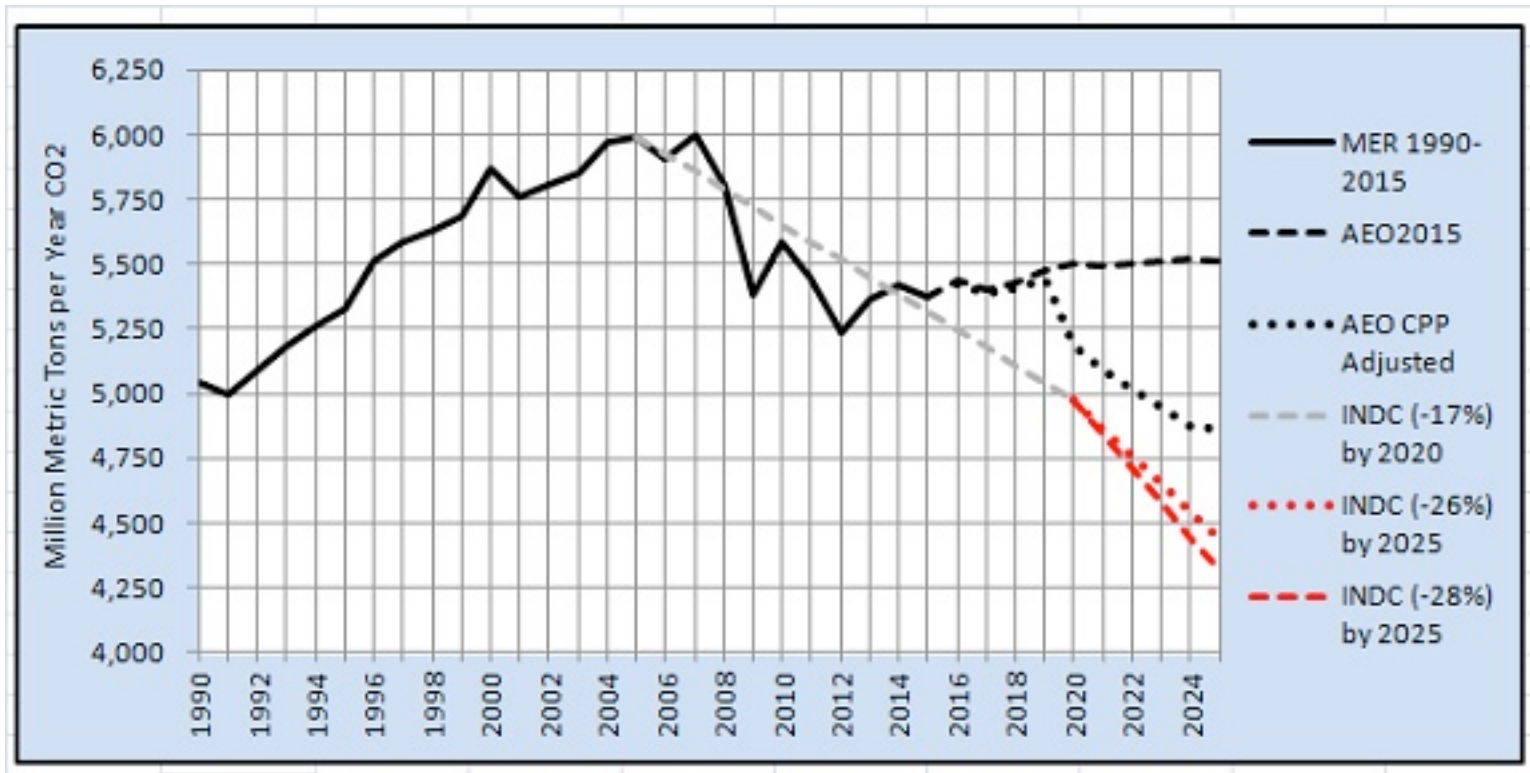


Source: NHTSA Summary of Fuel Economy Performance, NHTSA MY2017-2025 Factsheet

- | | |
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**Challenges to Achieving
the Obama Policy Baseline
(even in the absence of Trump)**

The U.S. INDCs *Might* Have Been a Difficult Stretch Even without the Trump's Intervening



EIA MER 1990-2015: Actual data from EIA Monthly Energy Review.

EIA AEO2015: No-new-policy BAU reported by EIA Annual Energy Outlook 2015.

AEO CPP Adjusted: AEO2015 adjusted for effects of Clean Power Plan.

INDC (-17%) by 2020: The U.S. Copenhagen Pledge of -17% by 2020.

INDC (-26% and -28%) by 2025: The U.S. Paris INDC commitment.

Even a Continuing Obama Administration Would Have Faced Basic Structural Challenges

- **Clean Power Plan**
 - **Resistance by many states:**
Regulations stayed pending resolution of lawsuits filed by 24 states Attorney Generals
- **Vehicle emission standards**
 - Resistance by auto makers
 - Questionable public acceptance
 - Appearance of a last-minute Obama “jam-down” of standards
- **Global leadership**
 - **No depth of support from Congress**
to provide Congressional ratification of presidential climate agreements

What Has Trump Actually Done So Far to Climate Change Policies ?

*“The concept of global warming was created by
and for the Chinese in order to make U.S.
manufacturing non-competitive.”*

Donald Trump, tweeting in 2012

What Has Trump Actually Done So Far?

Some Salient Details

- **Suppressed government information** on climate change:
 - Replaced Obama White House climate change website with **Trump’s “America First Energy Plan”**.
 - *“President Trump is committed to eliminating harmful and unnecessary policies such as the Climate Action Plan.”*
 - Deleted much of the content from the **Interior Department’s website on climate change**.
 - Deleted the EPA’s longtime **website devoted to explaining climate change**.
 - Revoked various Obama executive orders and reports including:
 - **“Climate Change and National Security”**
 - **“The President’s Climate Action Plan”**
 - **“Climate Action Plan Strategy to Reduce Methane Emissions”**

What Has Trump Actually Done So Far on Climate Change Issues?

Some Salient Details

- **Abandoned U.S. global leadership on climate change:**
 - Trump refusal to support **R-20 strong statement** on Paris Accords
 - US announcement of withdrawal from its **Paris Climate Accord**
- **Appointed climate skeptics to key positions:**
 - **Scott Pruitt** to head **EPA**
 - **Rick Perry** to head **Department of Energy**
- **Attacked and defunded climate science:**
 - **Dismissed several members of the Board of Scientific Counselors**, an 18-member advisory board that reviews the research of EPA scientists.
 - Proposed to **wipe out \$100 million in funding** for the EPA's climate work, including scientific research. (Climate research is “a waste of money”.)

What Has Trump Actually Done So Far on Climate Change Issues?

Some Salient Details

- **Directed the EPA to pursue several hostile actions:**
 - **Revisit** Obama's final rules for regulating emissions from existing power plants (**Clean Power Plan**) as well as new power plants (**New Source Performance Standards**)
 - End an Obama moratorium on new **coal leases on public lands**
 - Revise Obama's **methane emissions** regulations
 - Ignore the Obama administrations calculation of the **social cost of carbon pollution**
- **Proposed to slash EPA funding by 31%**--more than any other agency.

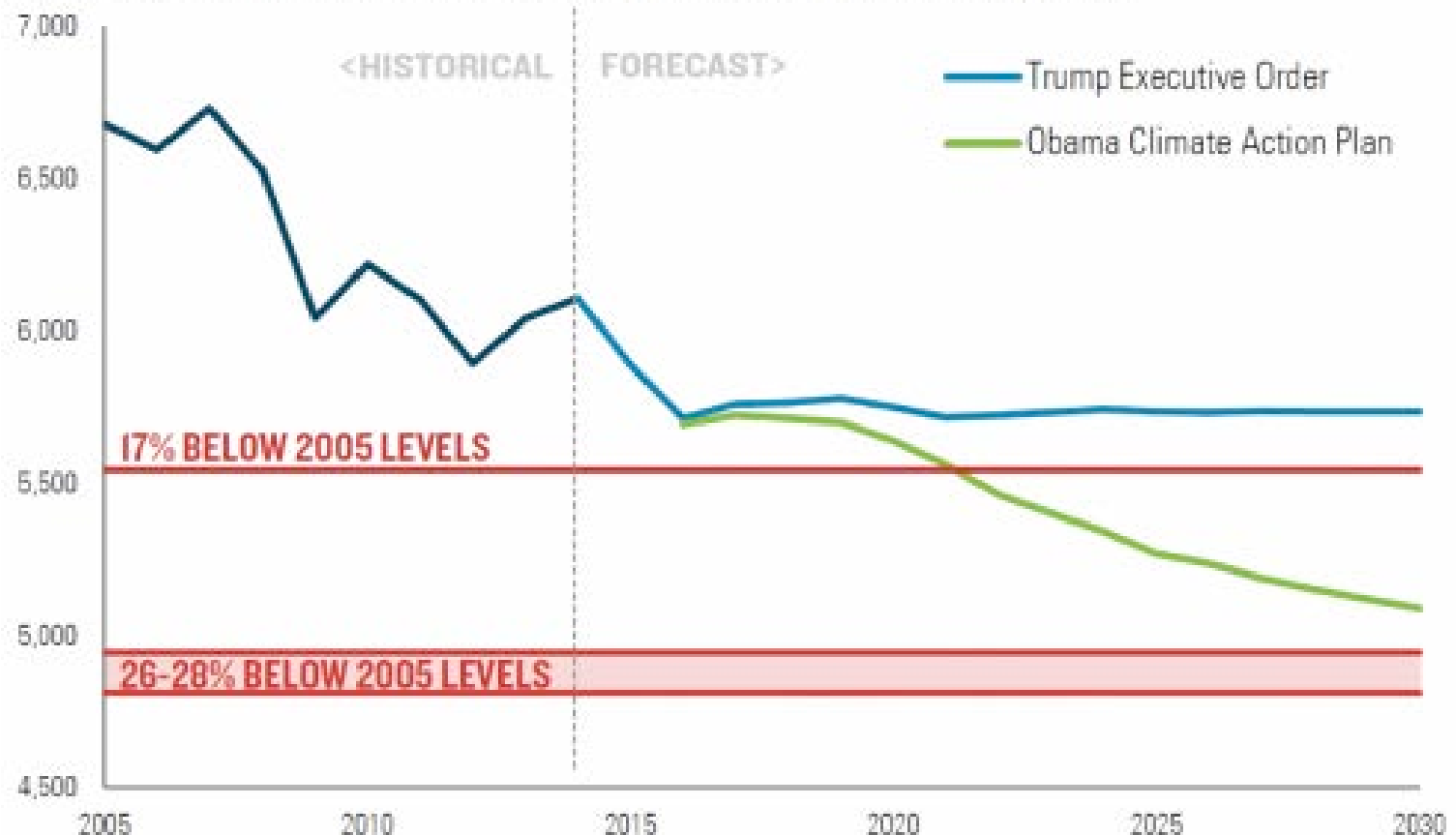
What Has Trump Actually Done So Far on Climate Change Issues?

Some Salient Details

- **Took specific additional hostile steps:**
 - Approved **Keystone XL pipeline**
 - Expanded **offshore drilling**
 - **Rescinded** Obama Final Determination of **2022-2025** model year **vehicle emissions standards**. Set issue for further consideration.
 - **Repeatedly attempted** to loosen regulations on **methane emissions:**
 - **Withdrew** Obama EPA request for more **information about methane emissions** from oil and gas facilities.
 - **Attempted to legislatively repeal** Obama-era regulations on **methane emissions**. (But was surprisingly defeated in the Senate by 51-49.)
 - **Announced delay** of Obama-era **methane emissions control rules** for 2 years (but D.C. Court of Appeals later rejected this delay).

What's Been Trump's Forecast Impact So Far: *Here's One Analyst's View*

Figure I: US GHG emissions under Trump's Executive Order and Obama's Climate Action Plan
Net emissions, million metric tons CO_{2e}, including most optimistic LULUCF scenario



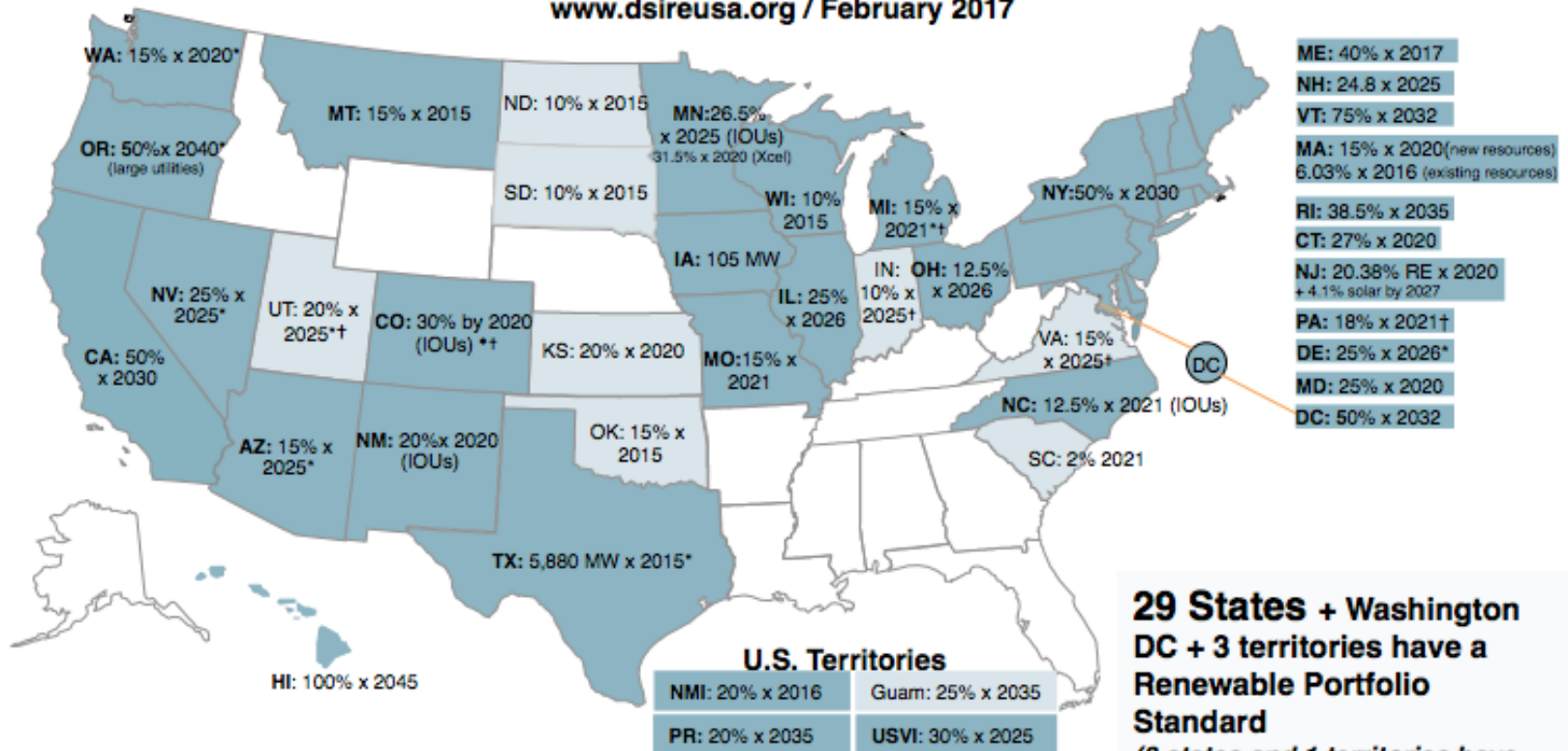
Source: Rhodium Group analysis

**Responses by
Cities, States, and the American People
to Trump's Actions:
*How Much Can This Compensate?***

States Exert a Significant Influence on Electricity Portfolios Especially Through Renewable Portfolio Standards

Renewable Portfolio Standard Policies

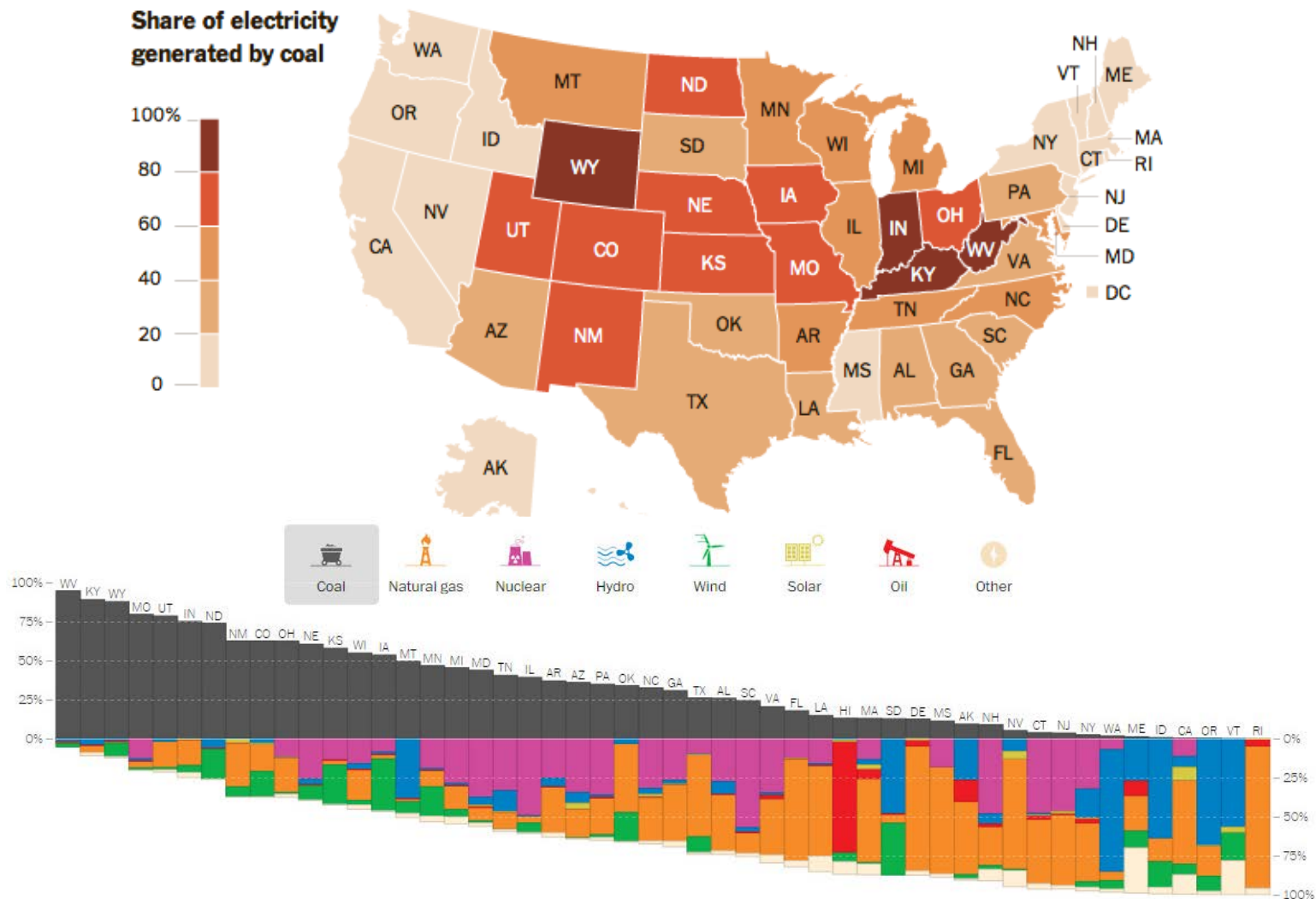
www.dsireusa.org / February 2017



Renewable portfolio standard
 Renewable portfolio goal

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

But Many States Are Still Heavily Dependent on Coal for Power Production



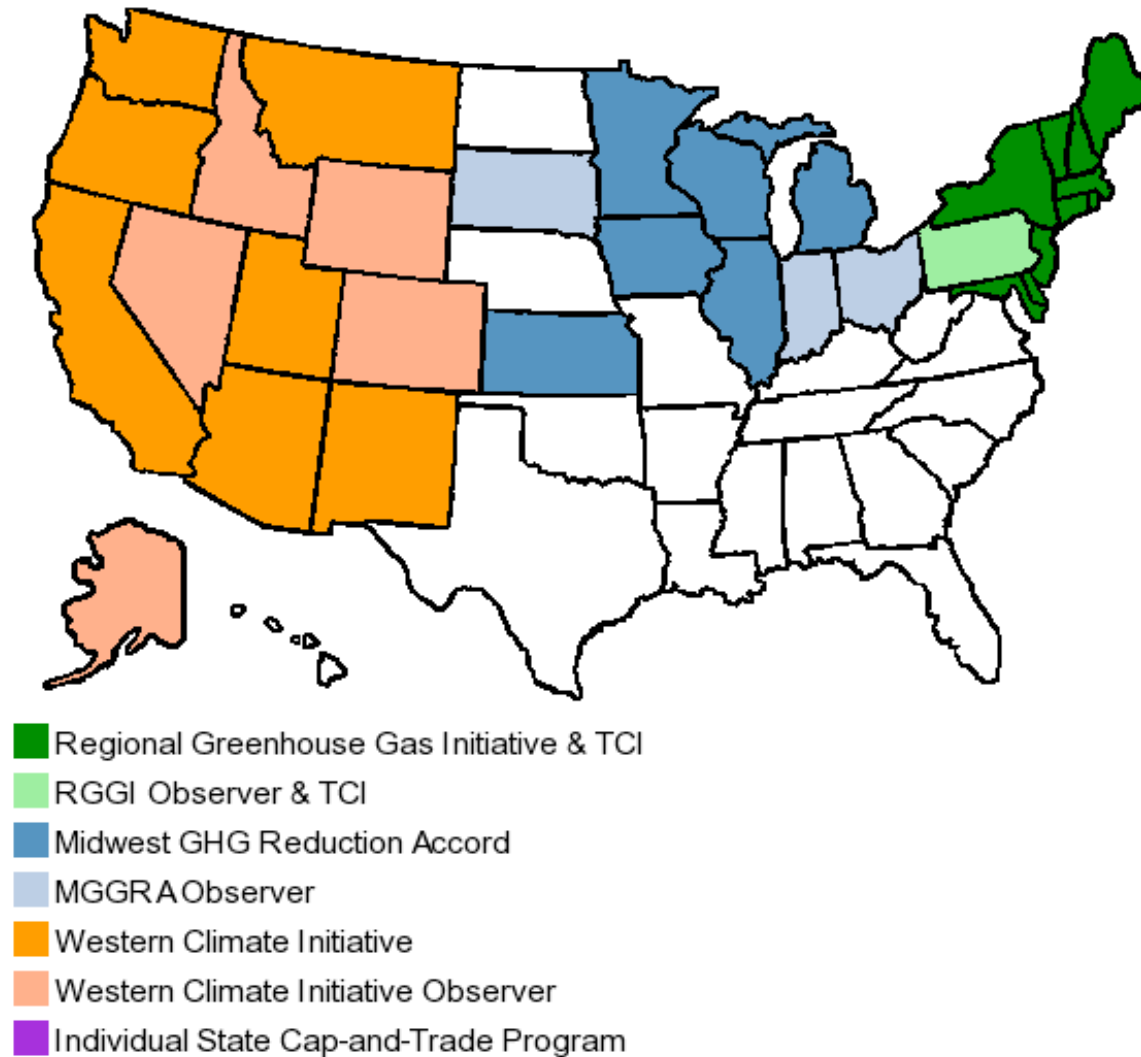
Data from secondary source attributed to EIA, 2014

States with Climate Action Plans (34 States plus D.C.)

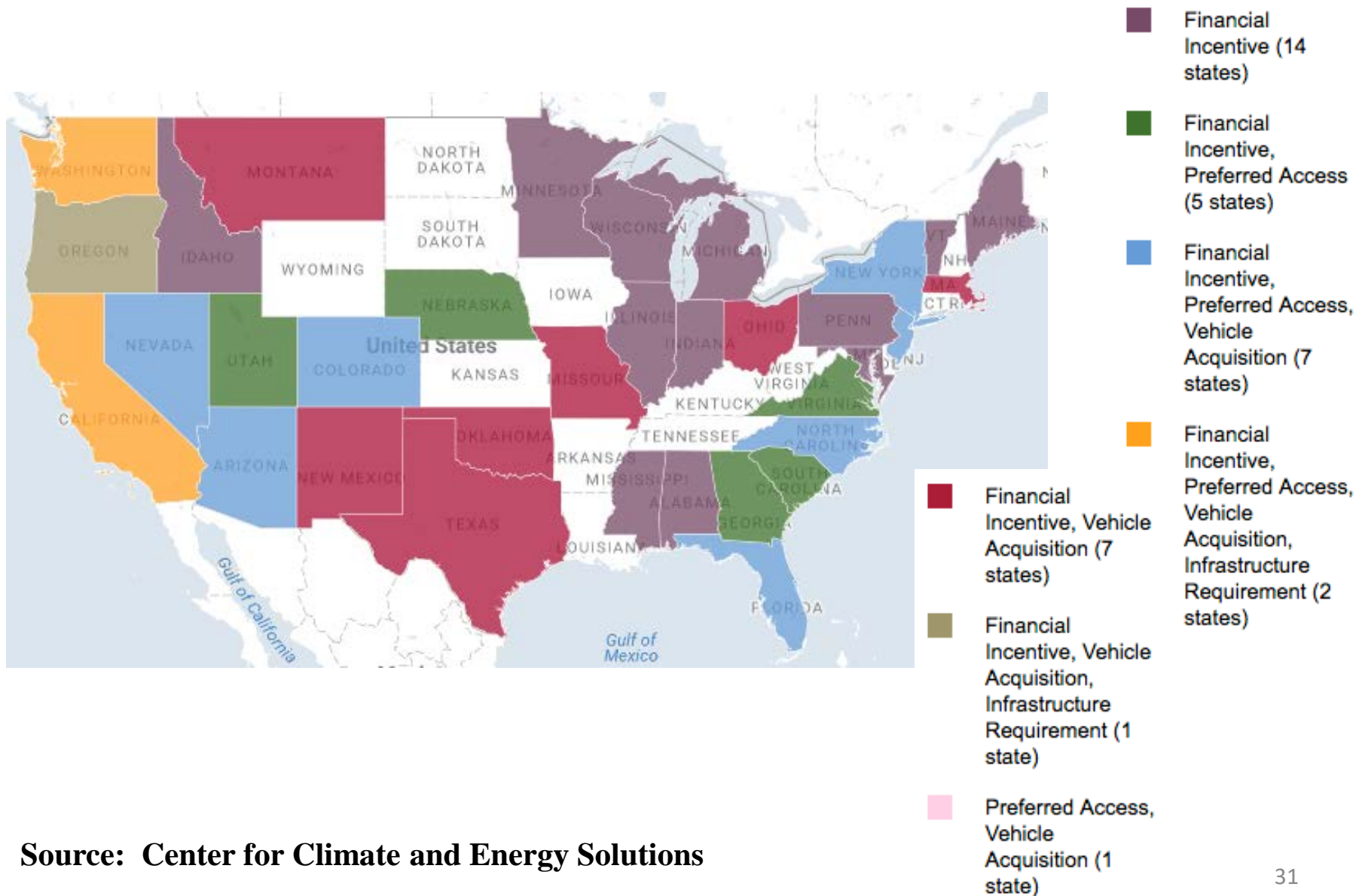


Source: Center for Climate and Energy Solutions

Regional GHG Initiatives

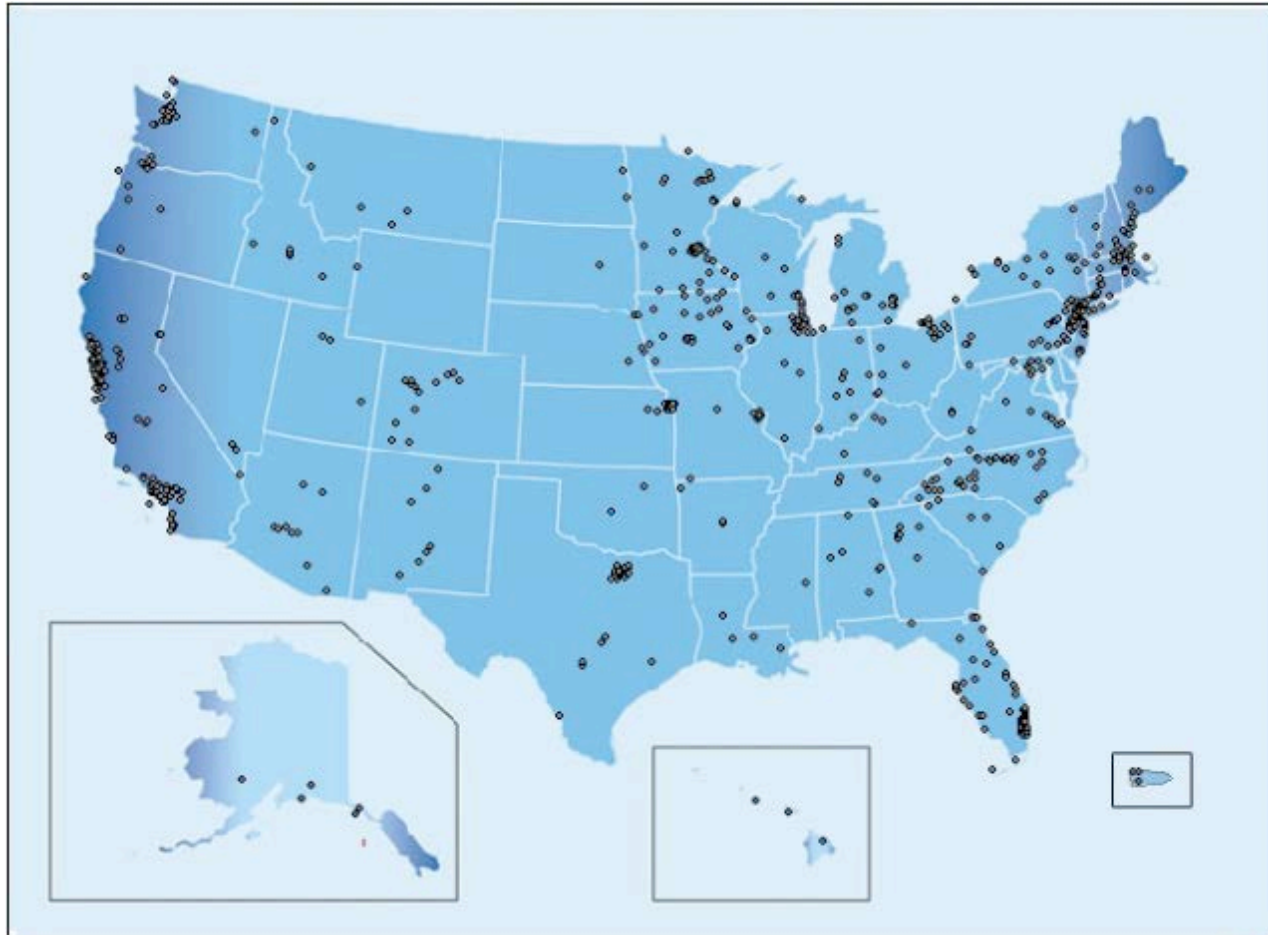


States with Pug-In Electric Vehicle Policies



Source: Center for Climate and Energy Solutions

Mayors that Have Joined the U.S. Conference of Mayors Climate Protection Agreement



Source: USMayors.org

City-level Response to Trump

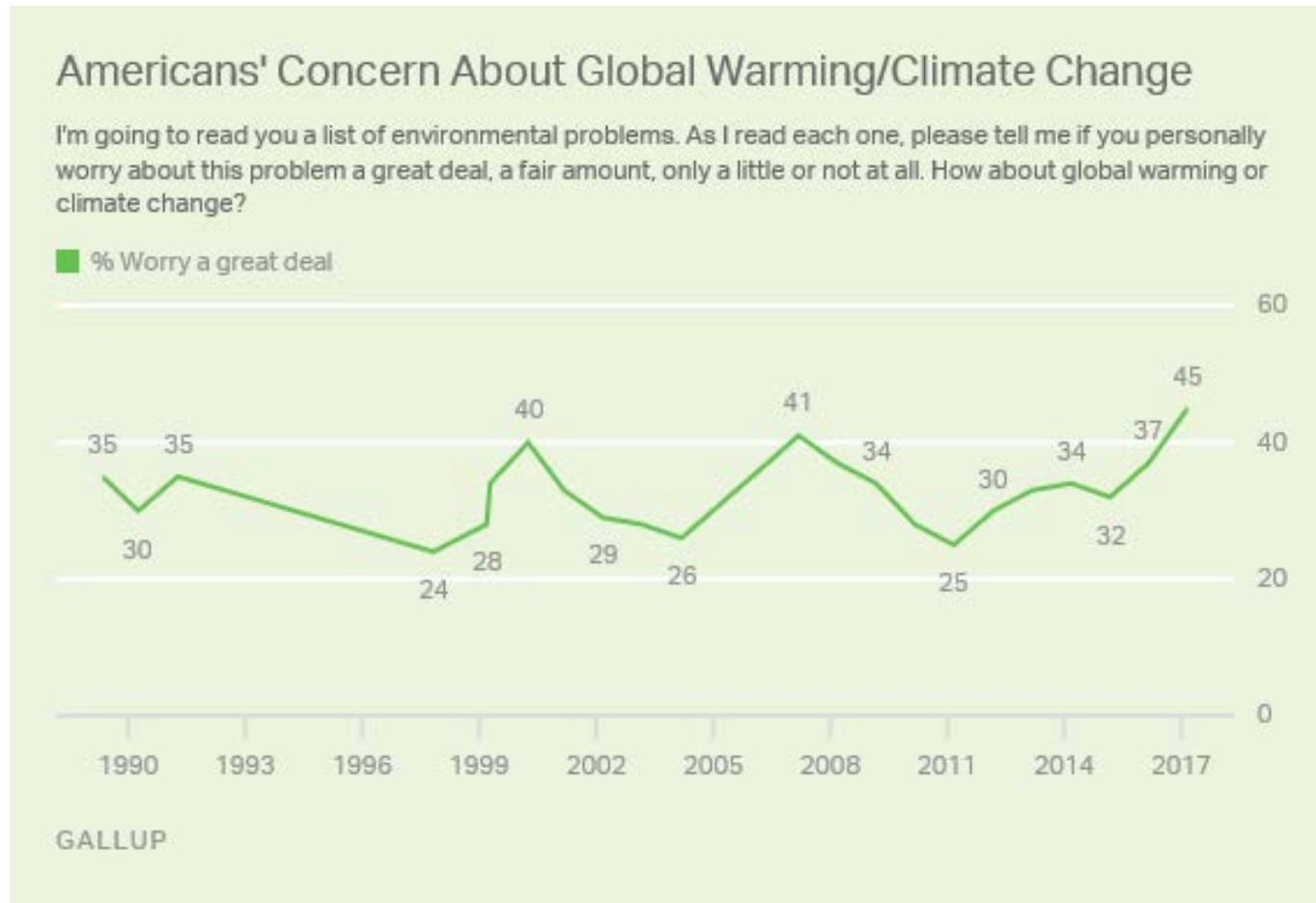
Selected indications

- Mayors of **250 American cities** pledge **100% renewable energy** by 2035
“We will continue to lead. We are increasing our investments in renewable energy and efficiency...And if the President want to break the promises made...we will build and strengthen relationships around the world to protect the planet from devastating climate risks.” (US Conference of Mayors, June 2017)
- **Michael Bloomberg** established a \$200 million program aimed at giving mayors a stronger hand in national policy decisions affecting sustainability and climate change (US Conference of Mayors, June 2017)
- Los Angeles Mayor **Eric Garcetti**, Sustainable City pLAn 2017
*“We have put up enough solar in Los Angeles in the last year to power over 12,000 homes — and we continue to lead the nation in total installed solar, with **the largest rooftop solar system in the world due to come online in the city by the end of the year.***

Americans Worrying a Great Deal About Climate Change

March 2017 - Up 8% over 2016

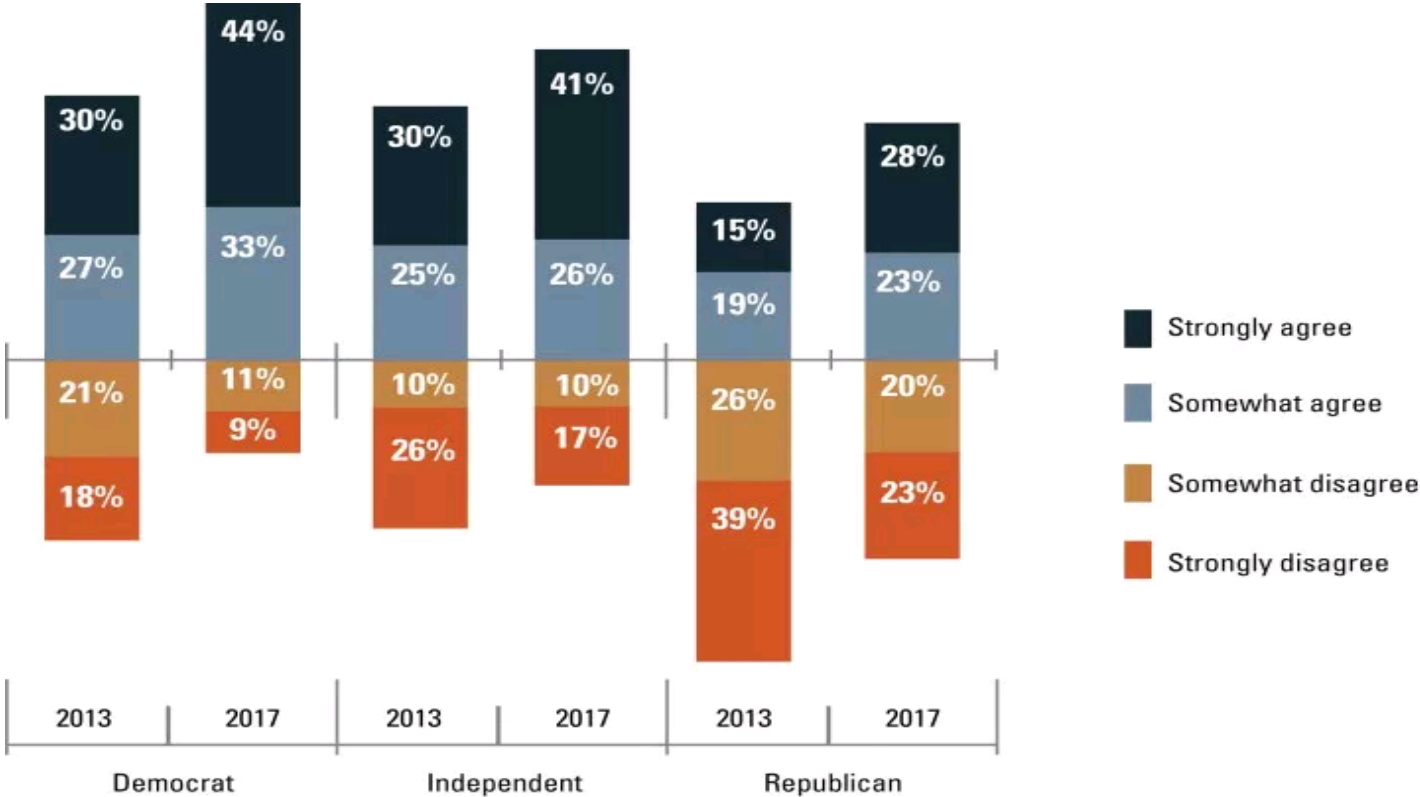
(Gallup Poll, March 2017)



Growing Preference for State Action

“If the federal government fails to address the issue of global warming it is my state’s responsibility to address the problem.”

(Brookings/NSEE Survey, March 2017)



Conjectures About Future Trump Policies

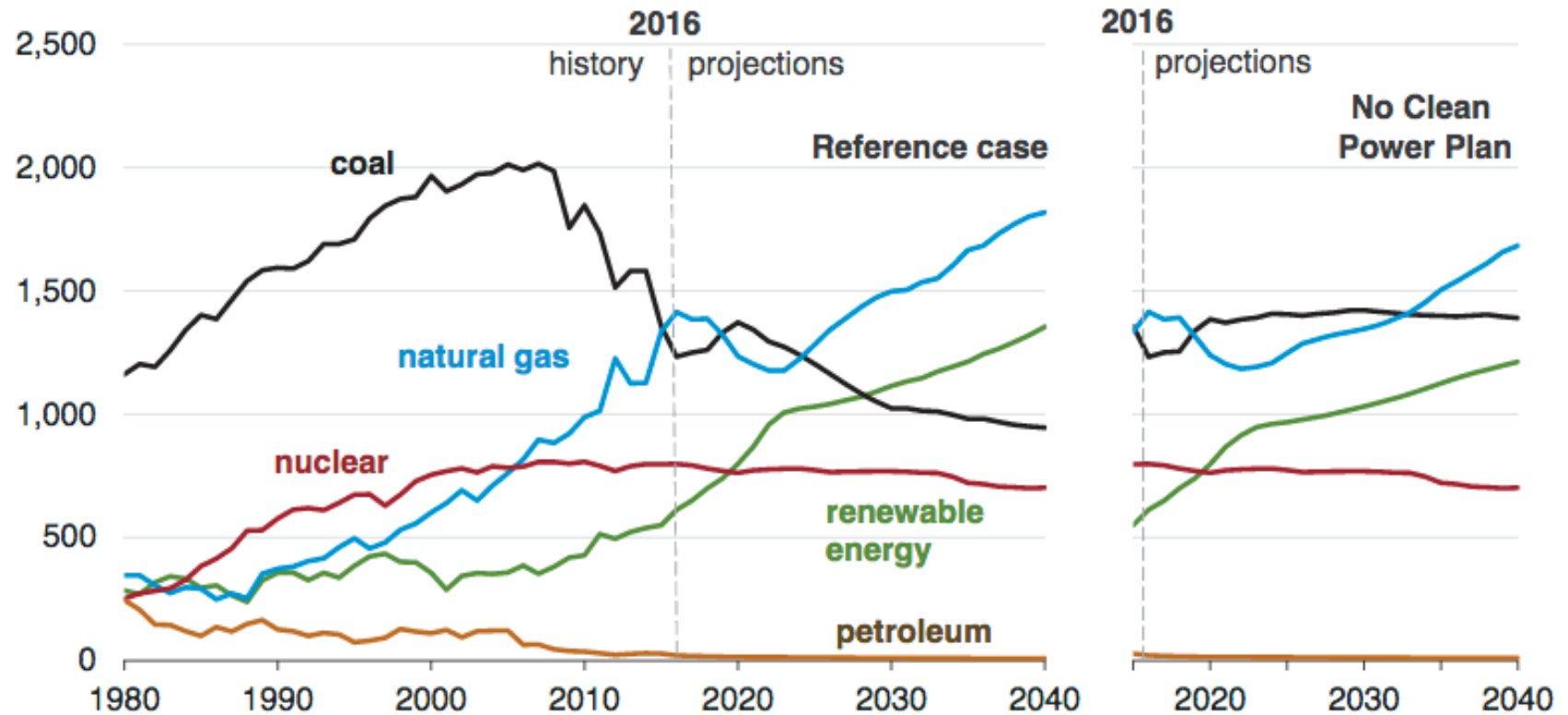
General Observations on the Limitations of Presidential and Federal Powers

- Although the practical exercise of presidential power has increased in recent decades, there has been **no formal expansion of presidential power**.
 - Presidential **use of Executive Orders** has increased primarily **due to political gridlock in Congress**.
- **Congress, States, and the Supreme Court** all place constraints on the exercise of presidential power.
- The U.S. has a **strong federal system of government**. States are far from simply being administrative subdivisions of federal government. States have considerable realms of exclusive and shared authorities.
- **“Conservative” political values** will tend to want to protect “States’ rights” from federal encroachment. Even a “more conservative” Supreme Court will tend to protect state prerogatives and check the exercise of arbitrary presidential power.

But the **Clean Power Plan** Was Forecast to Have a **Significant *Additional* Impact** on Coal

U.S. net electricity generation from select fuels

billion kilowatthours



Source: EIA Annual Electricity Outlook, 2017

Possible Trump Strategies to Undercut the Scope and Enforcement of the Clean Air Act Will Be Key

- **Supreme Court strategy:**
 - A more conservative Supreme Court could **reverse the 5-4 decision in Mass. v. EPA** and rule that the CAA does not require federal regulation of GHG emissions. (*Assessment: possible, but a “wild card”.*)
- **Congressional strategy:**
 - Pursue a Congressional **amendment to the CAA** to “clarify” that Congress did not intend that GHGs be regulated under the CAA. (*Assessment: Not obvious that a Republican majority could be found.*)
- **Administrative regulations strategies:**
 - Reverse the Obama EPA’s “**endangerment**” finding (*Assessment: Possible, but likely a difficult avenue.*)
 - Work through the “routine” administrative processes to weaken GHG regulations and enforcement. (*Assessment: Most effective and most likely.*)

Trump's Administrative Strategy Has Already Been Launched

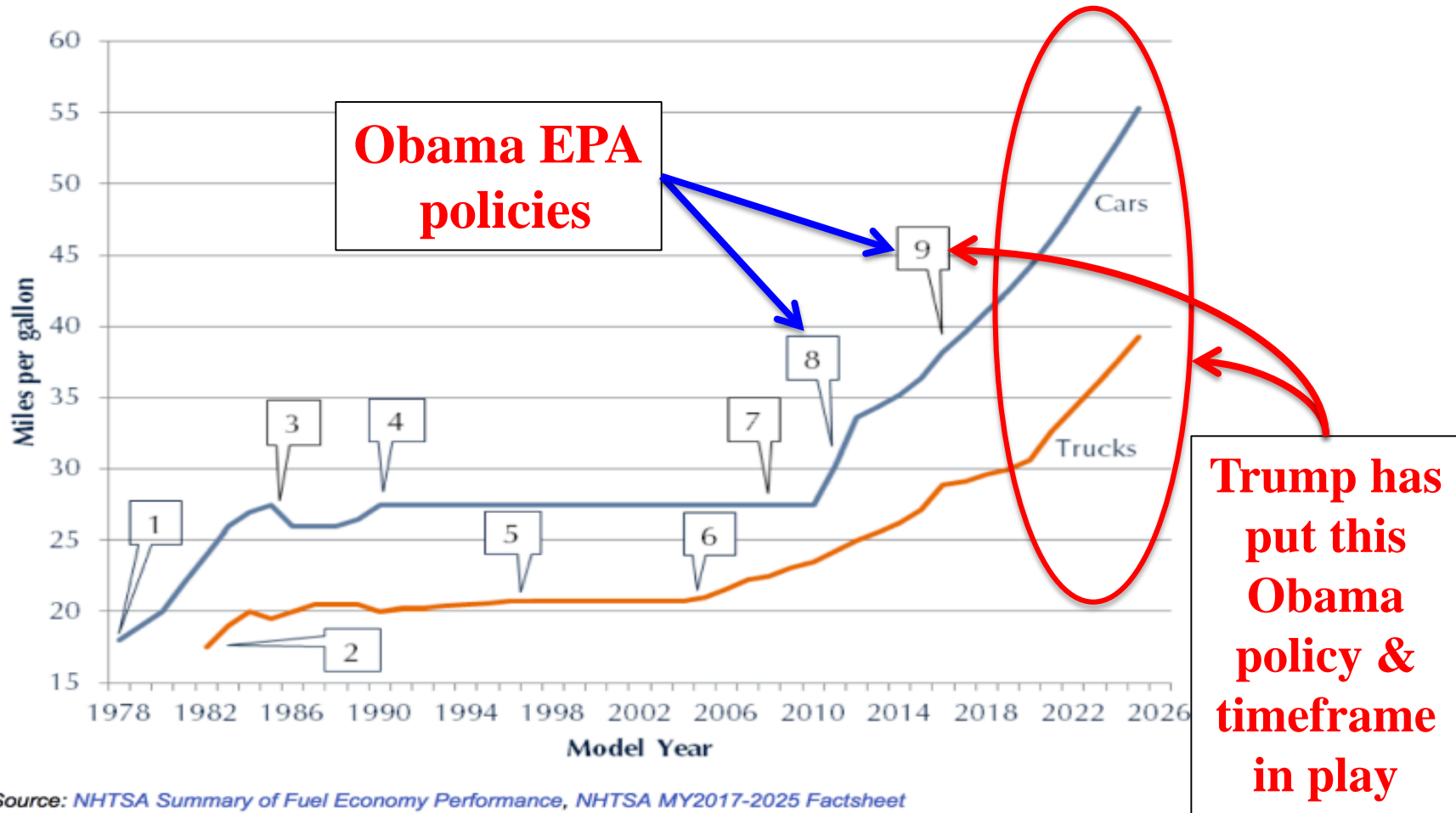
- **The Clean Power Plan**

- EPA has been directed to “reconsider” the Clean Power Plan rules. *(Assessment: The eventual outcomes are extremely uncertain and wide-ranging. The EPA must still regulate GHG emissions from power plants. This policy issue will be litigated for years.)*

- **Vehicle Emissions Standards**

- EPA/NHTSA have been directed to reconsider the light-duty vehicle standards adopted by the Obama administration for the model years 2022-2025. *(Assessment: Trump will likely loosen the Obama standards for 2022-2025. This will set up a confrontation between Trump and California and many other states regarding “the California waiver”. This is a “states’ rights” issue and the outcome is entirely uncertain.)*

Actual and Forecast Light-Vehicle Fuel Economy Standards: 1978-2025



Source: NHTSA Summary of Fuel Economy Performance, NHTSA MY2017-2025 Factsheet

- | | |
|---|---|
| 1. 1978-1985: Congress sets car standard (1978-1985) | 6. Bush Admin issues new truck targets (2005-2007) |
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“The California Waiver”: What Is It? Why Does It Matter? What Confrontation Will It Bring?

- Long ago, California was given a **waiver of federal preemption** under the Clean Air Act to pursue air emission standards stronger than the federal standards.
- **California must explicitly petition waivers** of specific EPA regulations. Once California has received a waiver, **other states can adopt the stricter California standards.**
- The **Bush administration denied California’s petition** for a waiver to set its own vehicle GHG emissions standards. **Obama granted** California this waiver for both the **2012-2016** and the **2022-2025** model years.
- **13 other states** have followed California’s path toward more stringent standards.

13 States Have Adopted the California Vehicle GHG Emissions Standards



 Has Adopted CA Vehicle Standards

Recent Events Have Elevated the Importance of the California Waiver and Raised the Possibility of a Legal Battle

- In **January 2017**, the Obama EPA issued a “**Final Determination**” regarding GHG emissions for light-duty vehicles for the **2022-2025** model years.
- On **March 15**, the **Trump EPA announced that it would revisit** the appropriateness of Obama’s Final Determination for 2022-2025.
- *Already armed with a waiver*, on **March 24**, **California announced its adoption** of the GHG emissions standards set forth in **Obama’s Final Determination** for 2022-2025 model years.
 - California’s announcement was supported by representatives of the 13 other states that have adopted the California waiver.

How Might Trump Proceed in this Legal Battle over the California Waiver for FY 2022-2025?

- **Don't contest** California's waiver for 2022-2025:
 - *Assessment: This avenue of non-uniform standards is likely not commercially acceptable to the automakers.*
- **Put economic pressure on California to conform** with federal standards:
 - *Assessment: In the absence of a substantial political change in California, this avenue seems likely to be unsuccessful. Even a “conservative” California governor might fight this attack on California “state rights”.*
- **Rescind California's waiver:**
 - *Assessment: There is no legal precedent for rescinding a waiver once granted. This is completely uncharted legal waters.*

10 States Have Also Received Federal Waivers to Adopt Zero-Emission Vehicle Programs for 2025

These states account for about 25% of light-duty vehicle sales



Might Trump Attack the California ZEV Waiver?

- In **2013**, California received a waiver enabling it to require a certain percentage of auto sales to be ZEVs. Nine other states adopted this ZEV waiver.
- This ZEV mandate is a **“big deal” for electric vehicle manufacturers**.
- It seems **far less likely that Trump would rescind the ZEV waiver** unless there is strong pressure from automakers—which seems unlikely.
 - Automakers likely see the increasing worldwide demand for ZEVs and will want to pursue this market more aggressively.

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Thank You

Any Questions ?