

100% Clean Energy Collaborative Webinar

Should a Carbon Tax Be Part of the Strategy for Achieving 100% Clean Energy?

November 18, 2020

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CleanEnergy States Alliance



Webinar Speakers



Gilbert Metcalf

John DiBiaggio Professor of
Citizenship and Public Service
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Warren Leon

Executive Director,
Clean Energy States
Alliance (moderator)



Should a Carbon Tax Be Part of the Strategy for Achieving 100% Clean Energy?

Gilbert E Metcalf

Tufts University

Prepared for the
Clean Energy States Alliance



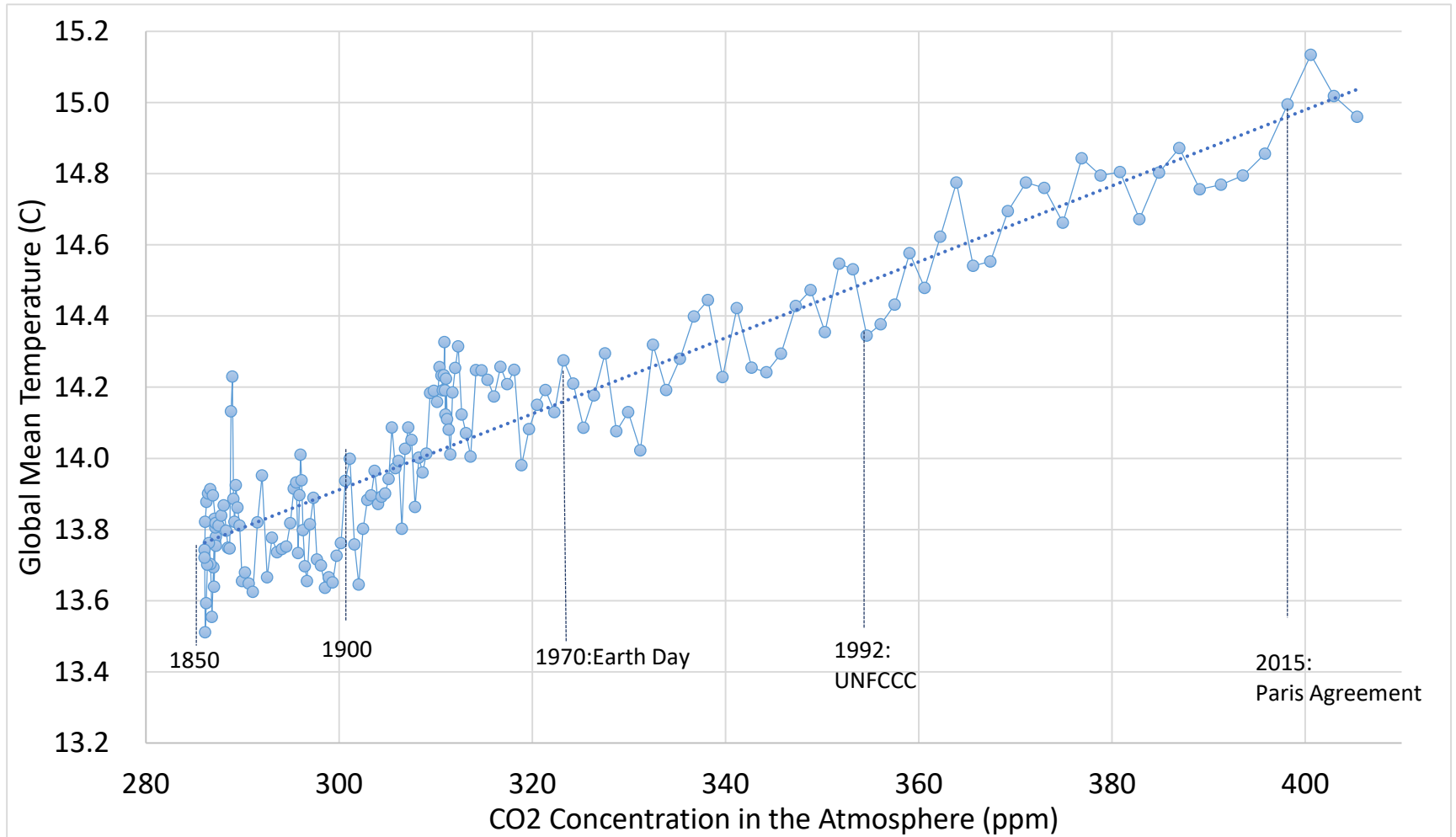
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Climate Change: Key Facts

- Scientists agree
- It's real
- It's us
- It's bad
- But there's hope

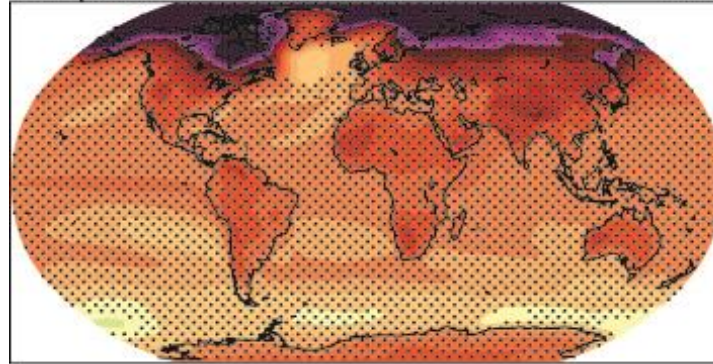
Tip of the hat to
Tony Leiserowitz

Increasing Temperatures



Averages Mask Significant Variation

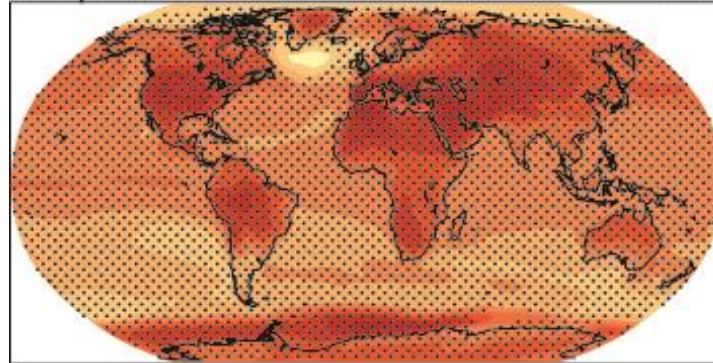
Temperature A1B: 2080-2099 DJF



Winter, N. Hemisphere



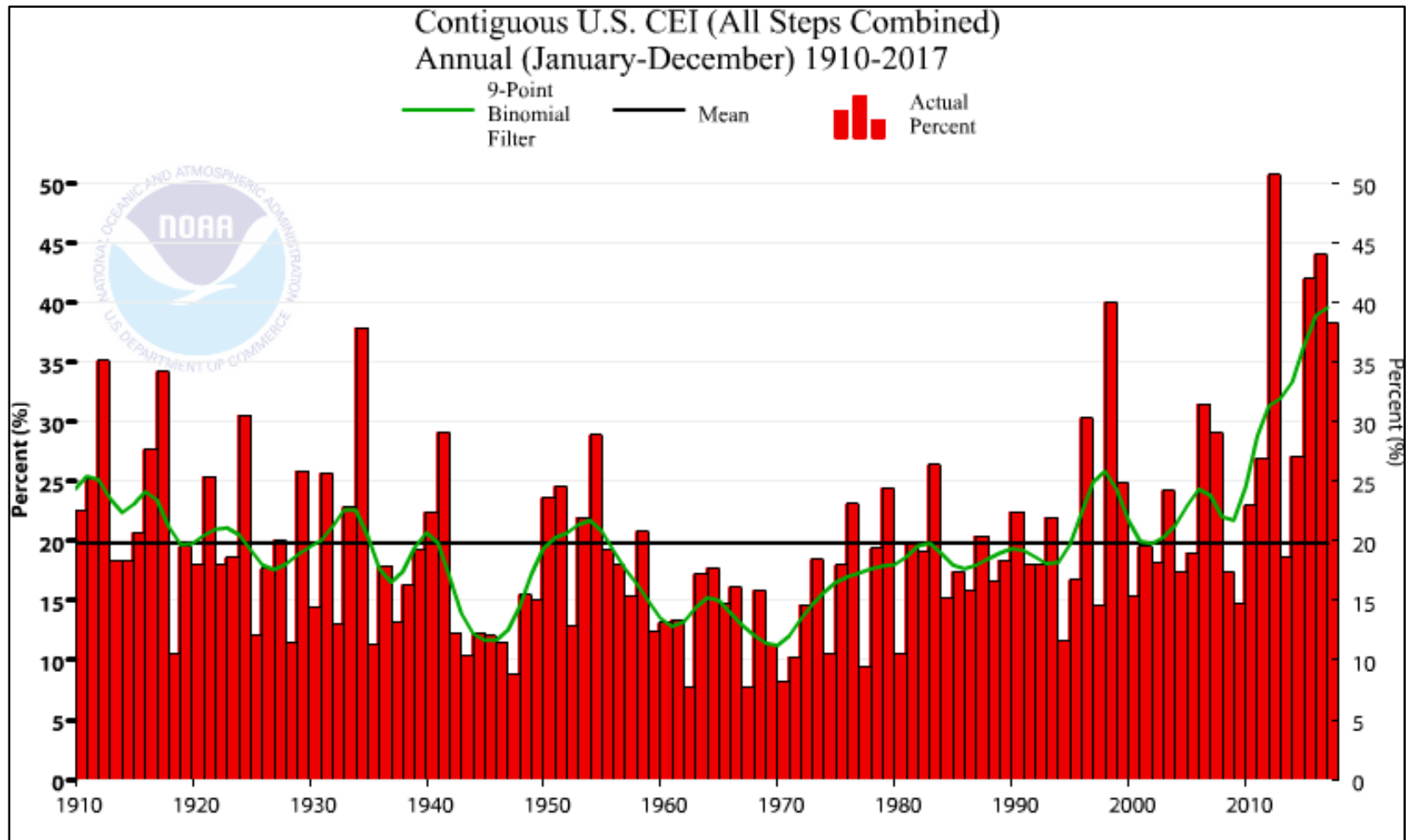
Temperature A1B: 2080-2099 JJA



Summer, N. Hemisphere

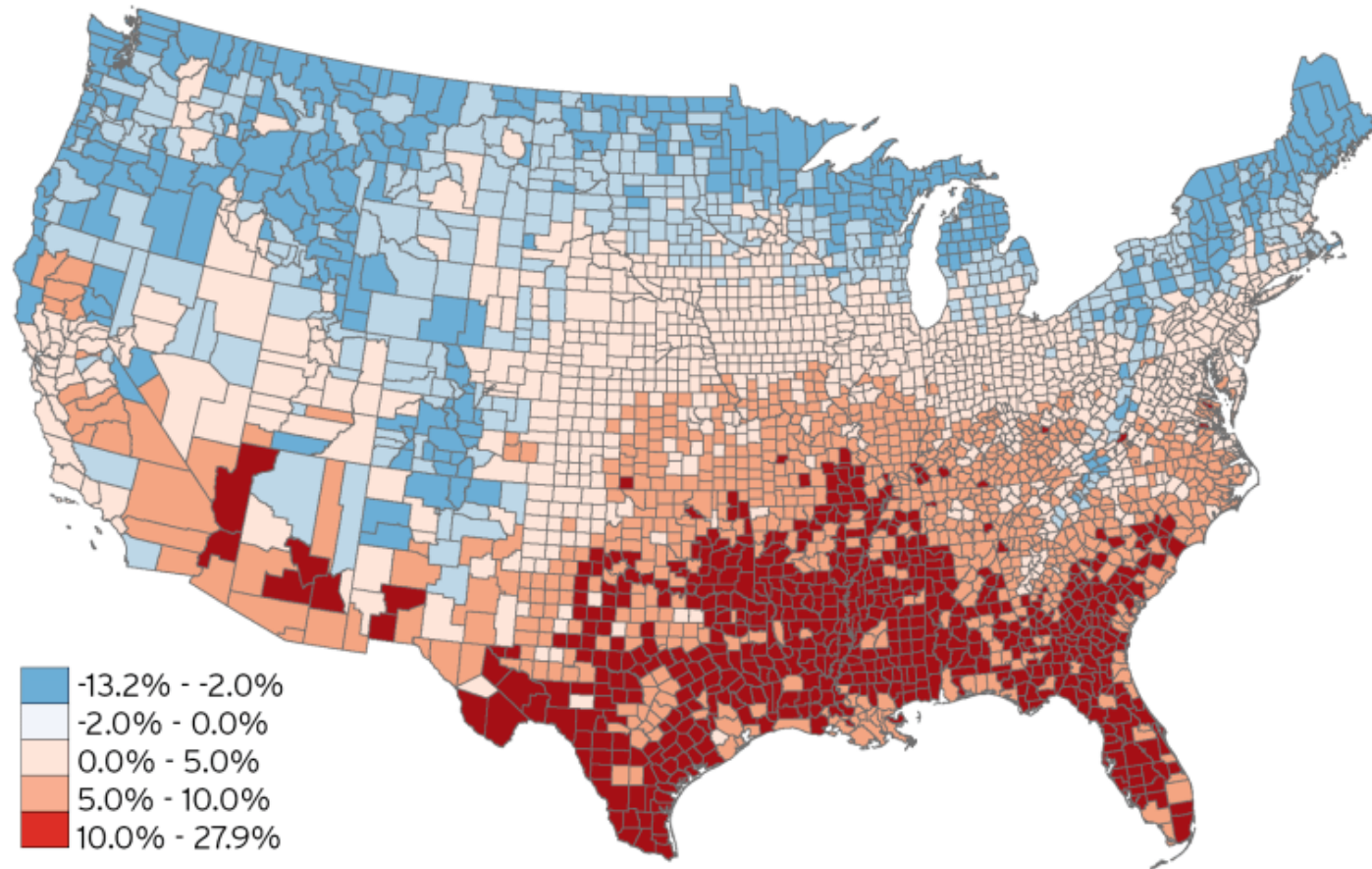


Increasing Climate Extremes



Climate-related costs by 2080-2099

Share of 2012 county income



Note: Emissions projections are based on a "business-as-usual" scenario (RCP8.5), which reflects the current global trajectory

Source: Hsiang and others, 2017

What Are Our Options?

- Regulation
 - Not cost-effective
 - Political risk
- Subsidies for clean energy
 - Inframarginal
 - Lowers overall energy price
- Information, offsets, etc.
 - Not up to the task
- Pricing Emission
 - Politically challenging

Popular Approach: Intensity Standards

- Policies mandating a certain minimum percentage of a given input combine a subsidy on the favored input and a tax on the disfavored input
 - Low Carbon Fuel Standards and federal Renewable Fuel Standards subsidize ethanol while taxing gasoline
 - Renewable Portfolio Standards (RPS) require a minimum percentage of electricity from “clean” sources
 - RPS subsidizes wind and solar while taxing natural gas and coal fired electricity fuels

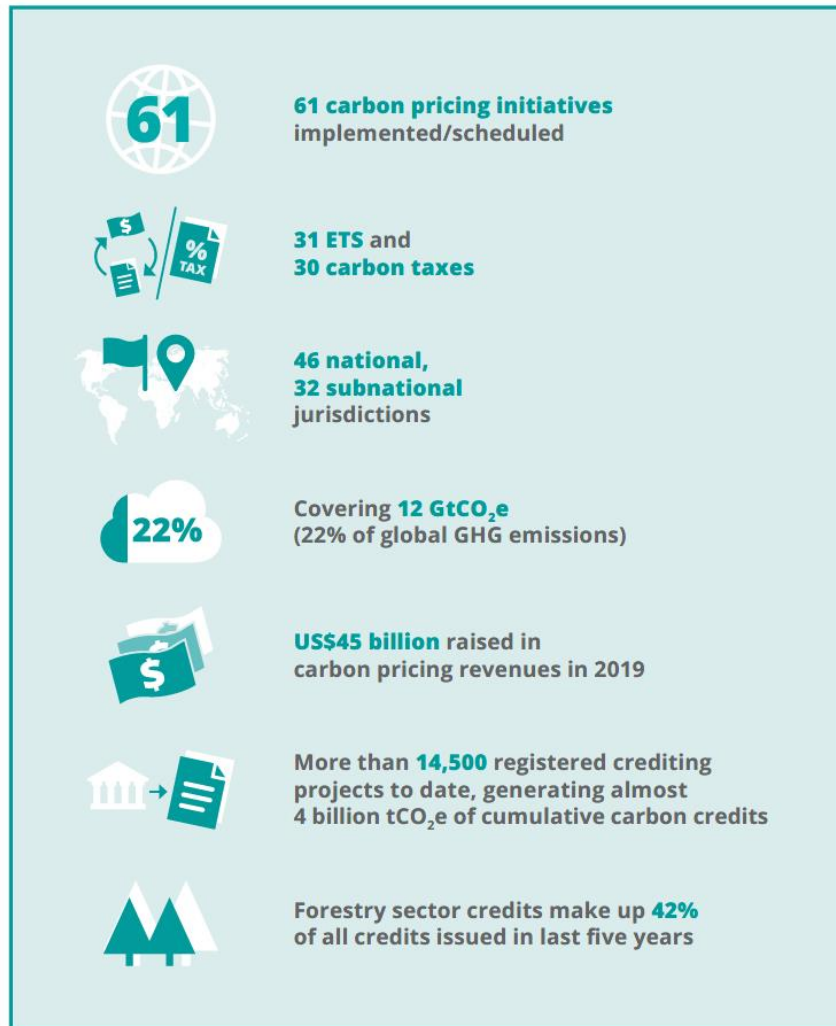
Popular but costly...

- Policies mandating a certain minimum percentage of a given input combine a subsidy on the favored input and a tax on the disfavored input
 - LCFS and federal RFS subsidize ethanol while taxing gasoline
 - RPS subsidizes wind and solar while taxing natural gas and coal fired electricity fuels
- These policies are highly inefficient – high marginal abatement cost
 - LCFS: \$700/ton for an 8 percent reduction
 - RPS: \$115 - \$530/ton from existing RPS programs

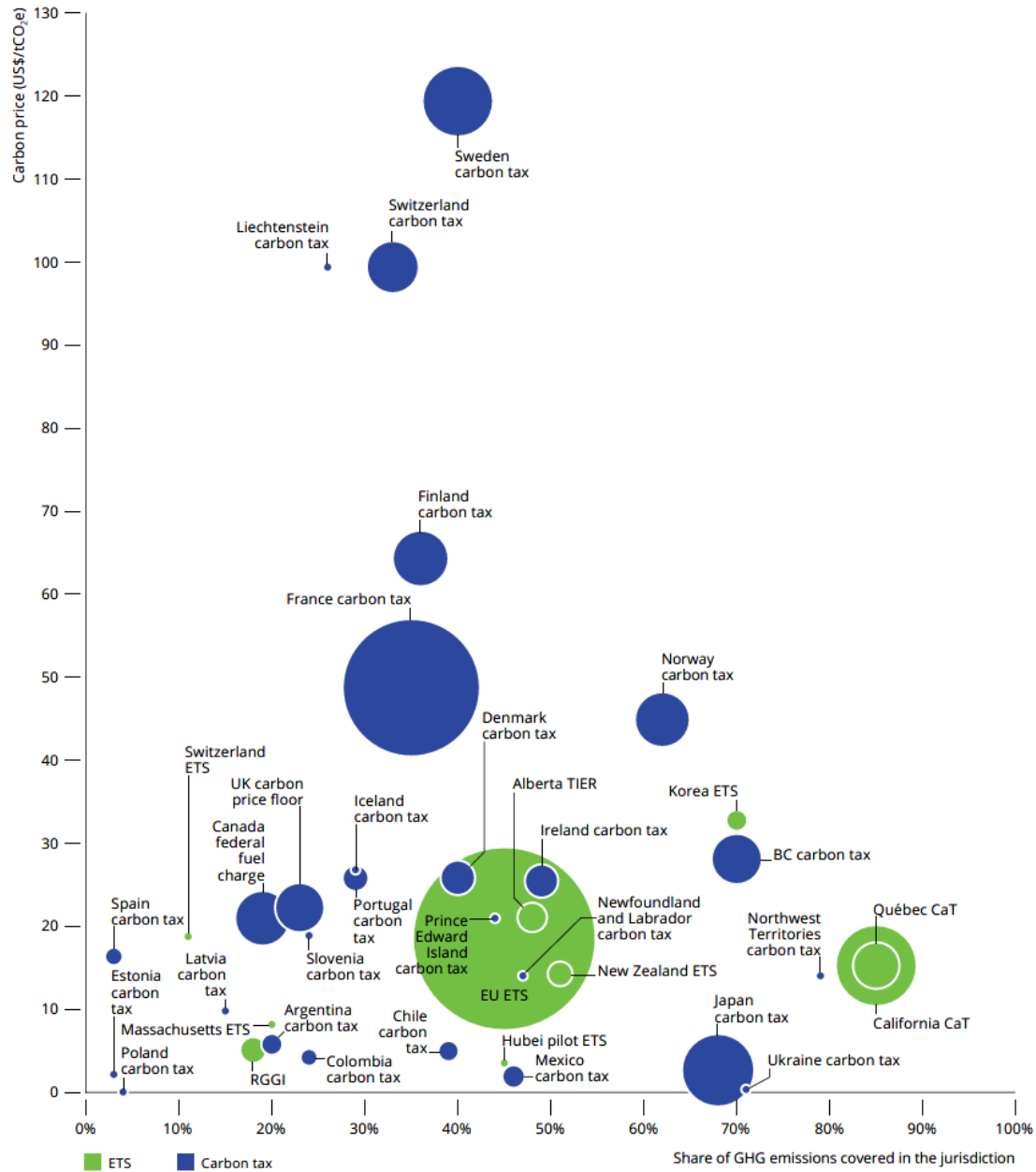
Carbon Tax vs. Cap-and-Trade

- Either preferable to alternatives
- Advantages of carbon tax
 - Cap-and-trade price volatility
 - Piggy-back on existing fuel excise taxes
 - Complimentary policies undermine cap-and trade
- Advantages of cap-and-trade
 - Political – *maybe!*

Globally



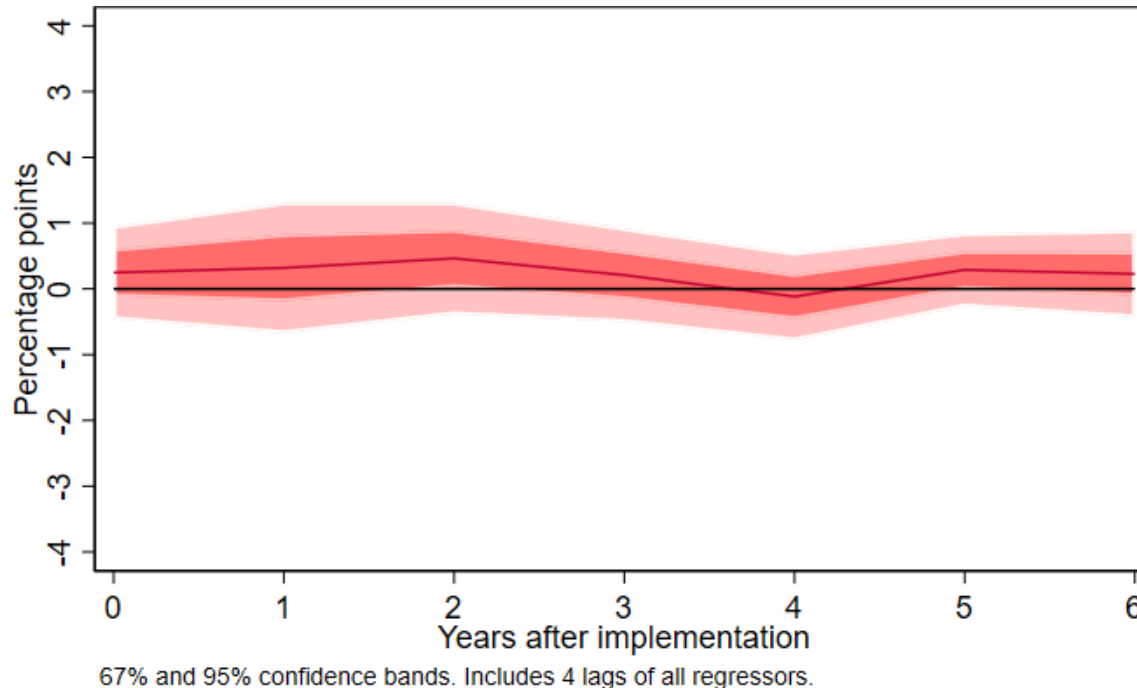
World Bank (2020)



Some Myths About Carbon Pricing

Myth: the economy will tank

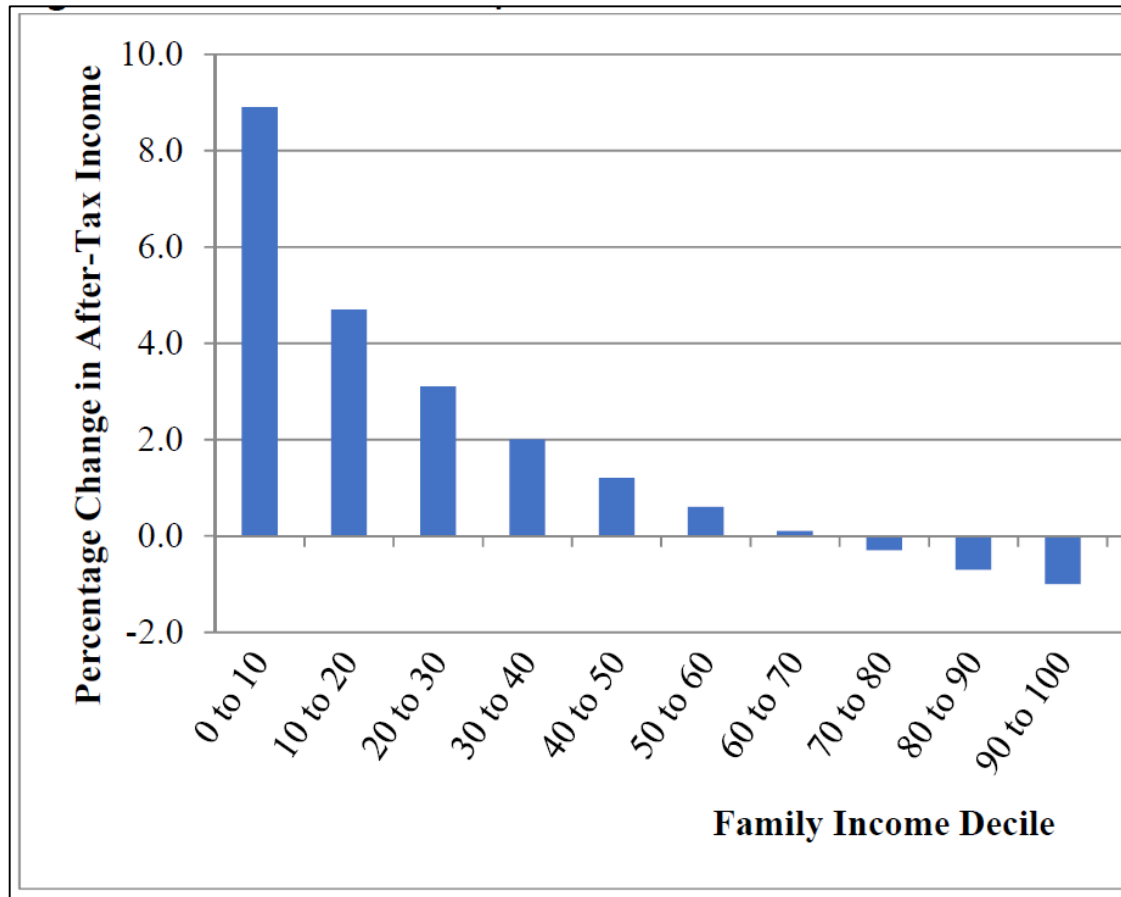
- Research on carbon taxes in Europe finds no evidence that they harm GDP or job growth (Metcalf and Stock, 2020)



Myth: burdens lower income households

- Carbon tax hits capital owners more than workers (progressive)
- Transfers (higher share of income for lower income households) are indexed
- Revenue can be rebated in a progressive fashion
- Regulations tend to be regressive in their burden across the income distribution
- Moreover, they raise no revenue that can be used to enhance progressivity of the reform

Distribution: Per-Capita Rebates



Myth: It won't guarantee emission reductions

- Carbon tax can be designed with a “policy thermostat” that automatically adjusts to raise likelihood of achieving desired emission reductions



An Emissions Assurance Mechanism: Adding Environmental Certainty to a U.S. Carbon Tax

Gilbert E. Metcalf*

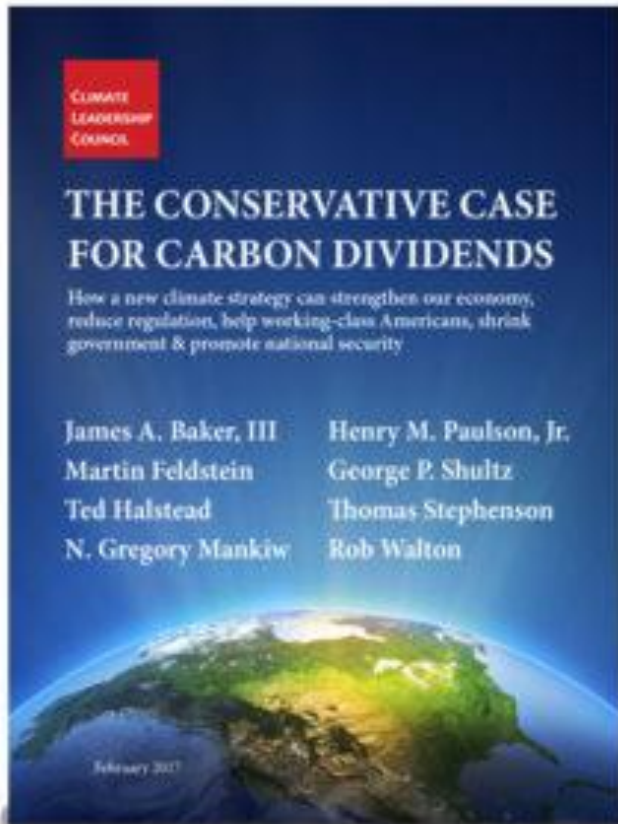
Introduction

Economists have long promoted a carbon tax as a cost-effective policy instrument to reduce U.S. greenhouse gas (GHG) emissions. Major companies, politicians, and environmental leaders have increasingly expressed their support as well. This shift toward the use of efficient,

Myth: Republicans hate it

- To be honest, they're not keen on *any* environmental regulation
- But, but...

Republicans Beginning to Embrace Carbon Pricing



Four Pillars to Their Plan

- A gradually increasing carbon tax
- Carbon dividends for all Americans
- Border carbon adjustments
- Significant regulatory rollback

Climate Leadership Council



James A. Baker, III



George P. Shultz



Michael Bloomberg



Steven Chu



Ray Dalio



Martin Feldstein



Ted Halstead



Stephen Hawking



Vinod Khosla



N. Gregory Mankiw



Gregory R. Page



Laurene Powell Jobs



Tom Stephenson



Lawrence Summers



Ratan Tata



Rob Walton

CORPORATE FOUNDING MEMBERS

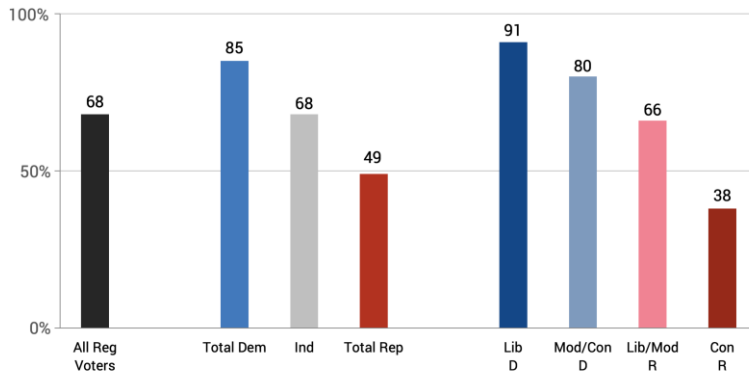


NGO FOUNDING MEMBERS



Myth: The public hates carbon pricing

A Majority of Registered Voters Support Requiring Fossil Fuel Companies to Pay a Carbon Tax
 - % “strongly” or “somewhat” support -

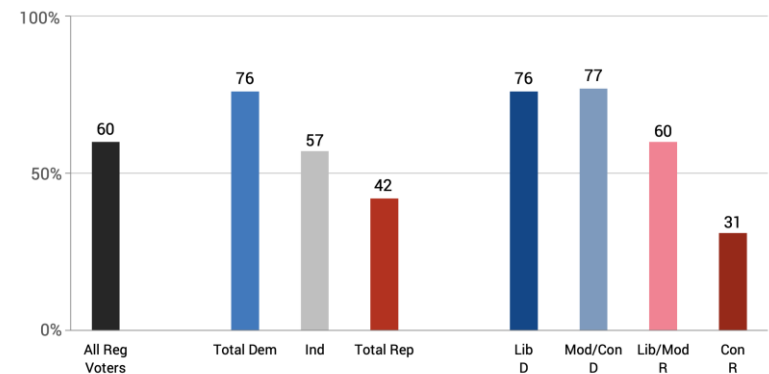


How much do you support or oppose the following policy? [Require fossil fuel companies to pay a carbon tax and use the money to reduce other taxes (such as income tax) by an equal amount.]

April 2020.



A Majority of Registered Voters Support A “Fee and Dividend” Policy For Carbon Pollution
 - % “strongly” or “somewhat” support -



How much do you support or oppose the following policy? [Require fossil fuel companies to pay a fee on carbon pollution, and distribute the money collected to all U.S. citizens, in equal amounts, through monthly dividend checks.]

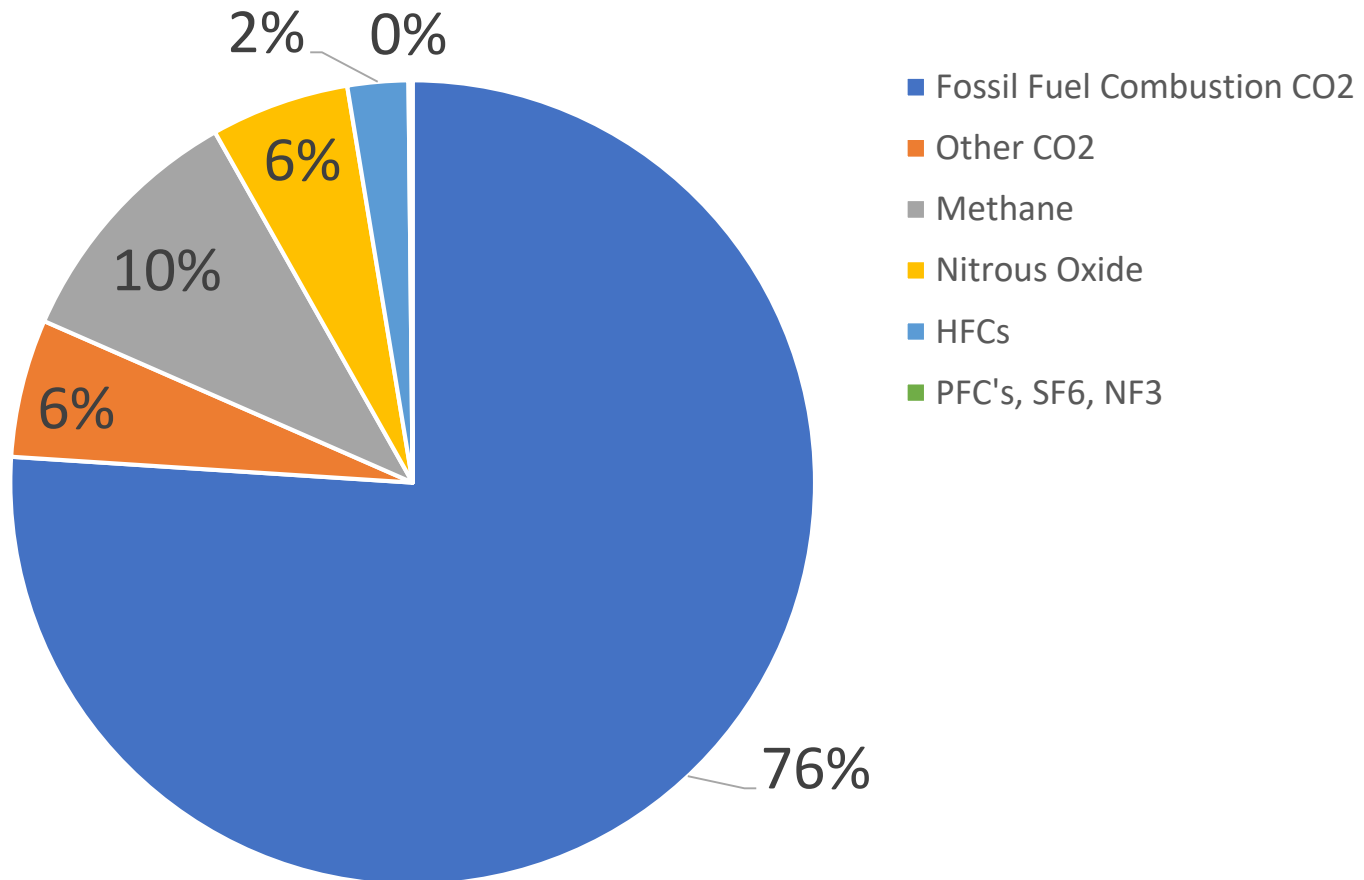
April 2020.



Designing a carbon tax



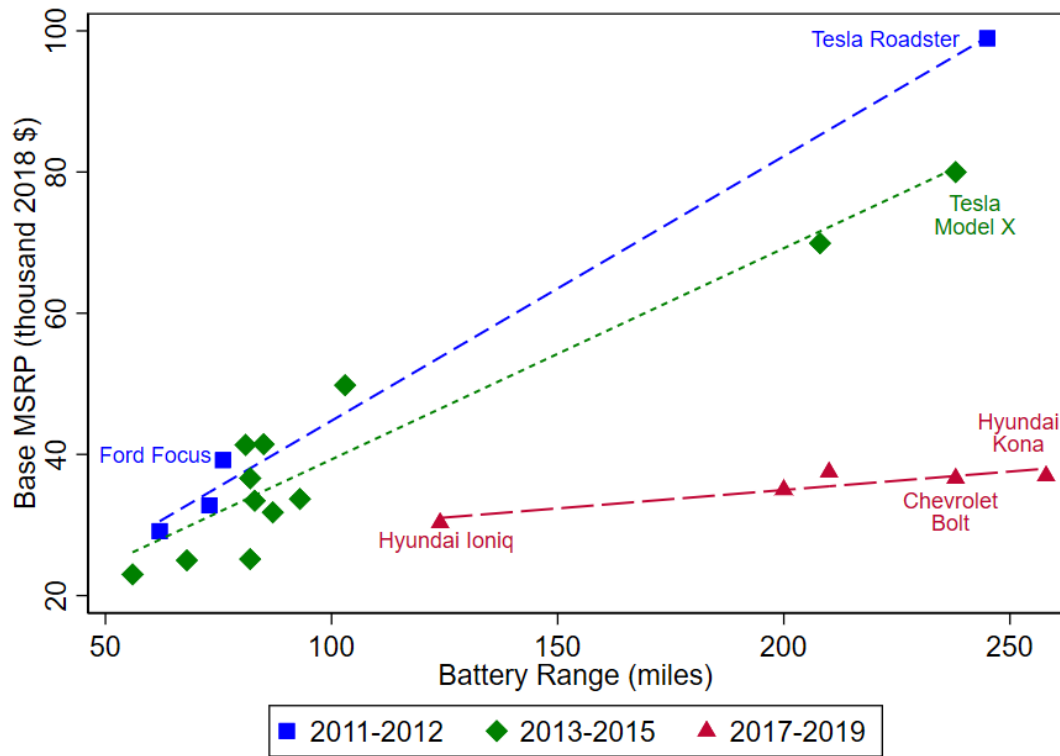
U.S. Greenhouse Gas Emissions



Carbon tax not sufficient

- Major investments in R&D needed
 - Storage technologies
 - Carbon capture and sequestration
 - New zero-carbon technologies
- Climate resilience investments needed
- Regulations for hard to tax sectors
- Bringing down barriers to interstate transmission lines and other network barriers

Role of R&D



How do we get there?



The wrong way

- Money in, money out
- Fair
- Streamlined policy
- Cuts emissions – a lot!

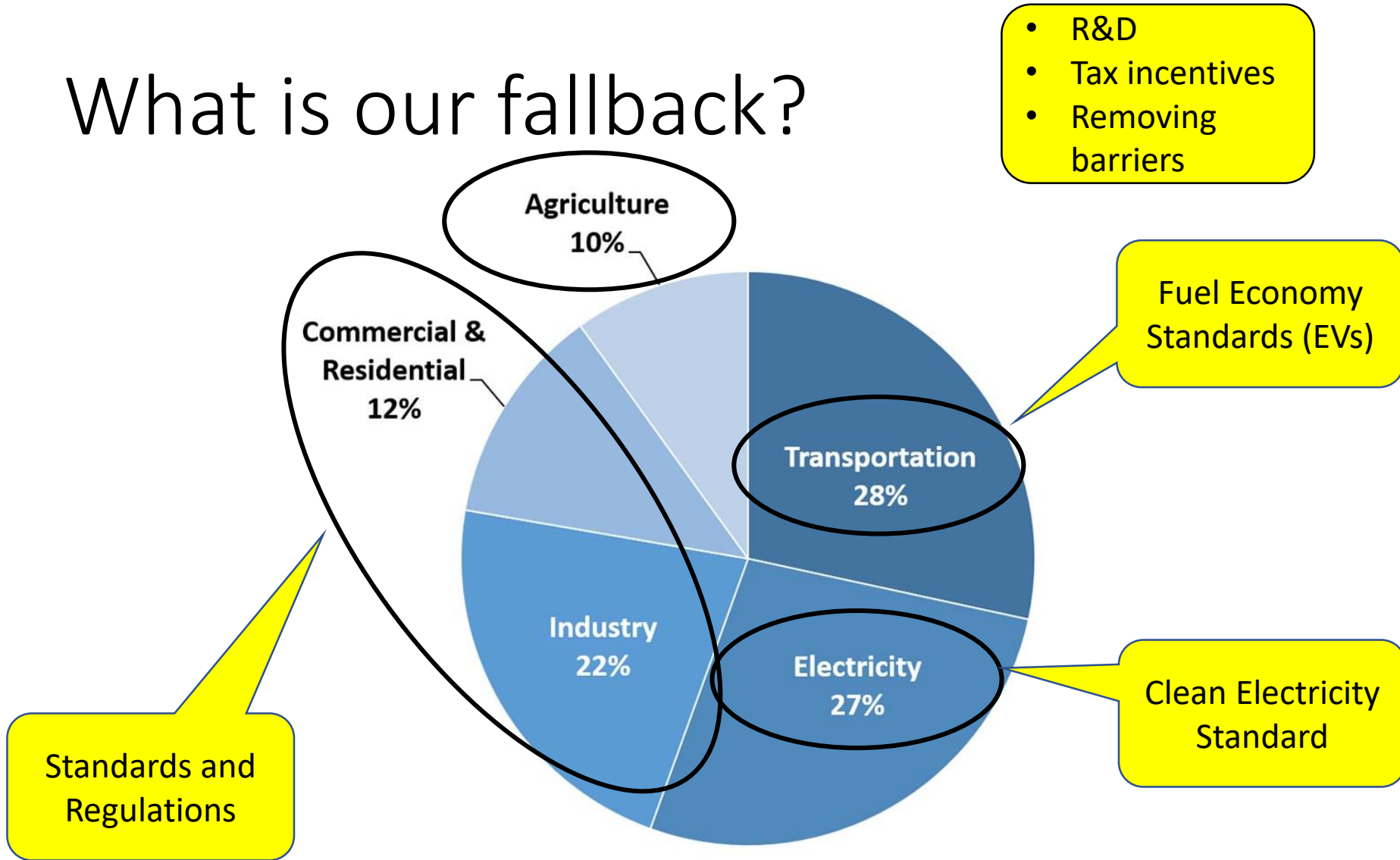


The right way

What is our fallback?

- Piecemeal federal approach
- Benefits
 - Much can be done through executive action
- Drawbacks
 - Piecemeal approach more costly
 - Subject to future rollback under a different Administration
- How might we do a second-best plan?

What is our fallback?

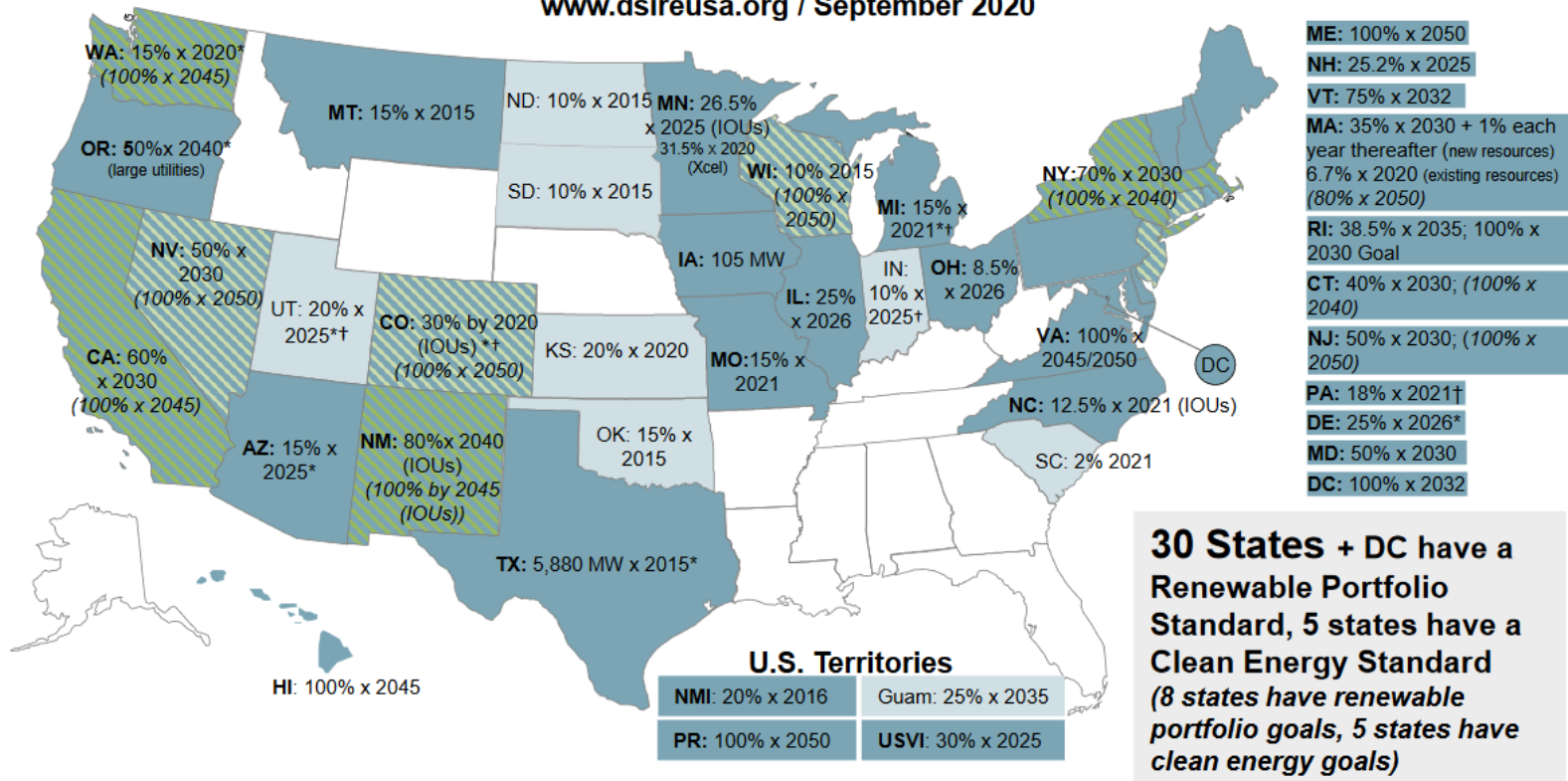


U.S. Environmental Protection Agency (2020). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2018

State versus federal policies

Renewable & Clean Energy Standards

www.dsireusa.org / September 2020



Renewable portfolio standard
 Clean energy standard
 Renewable portfolio goal
 Clean energy goal

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

Limits to State Action

Energy Storage Targets

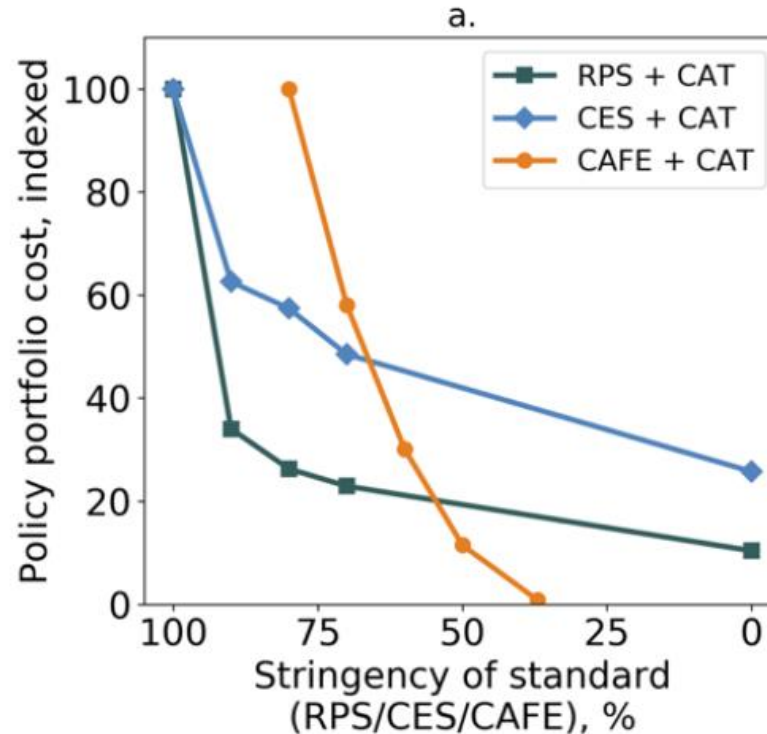
www.dsireusa.org / April 2020



Seven states have statewide targets for energy storage deployment.

Combo Plan?

- Needn't be an either/or choice
- Could combine smart regulation and incentives with a modest carbon tax

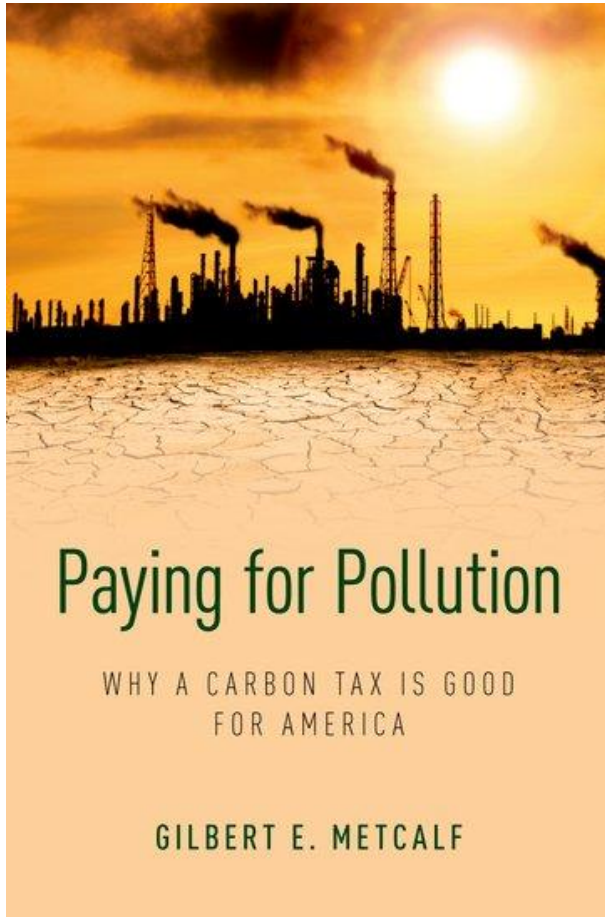


A New Era

- The Biden Administration will move aggressively on climate
- How much they can do depends on the composition and disposition of the Senate
- Carbon pricing has bipartisan support ...
- ... But we should not kid ourselves that it will be easy
- We've lost four years and have much to make up for at the federal, state, and local level

Paying for Pollution

Why a Carbon Tax is Good for America



Thank You!

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Thank you for attending our webinar

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Learn more about the 100% Clean Energy Collaborative at:
<https://www.cesa.org/projects/100-clean-energy-collaborative/>

Upcoming Webinars

The Impact of Policies and Business Models on Income Equity in Rooftop Solar Adoption

Thursday, December 3, 1-2pm ET

Greenlink Equity Map: Visualizing Equity Issues to Build Stronger Climate Solutions

Tuesday, December 8, 2-3pm ET

Using Overbuilding + Curtailment to Achieve 100% Clean Electricity

Tuesday, December 15, 3-4pm ET

Read more and register at: www.cesa.org/webinars