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The Implications of City, State, and Business Climate Leadership in the United States

Leon Clarke

February 13, 2020

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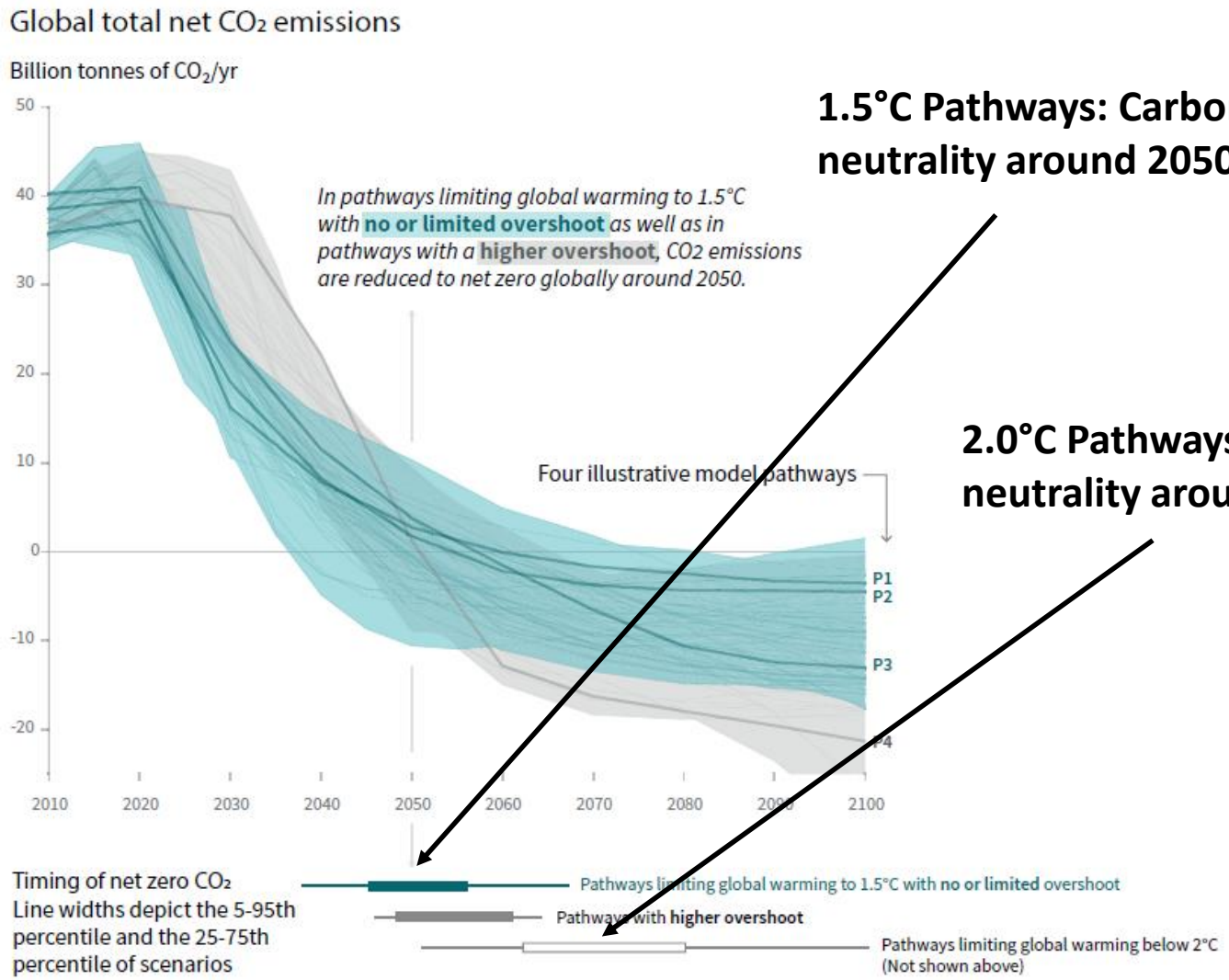
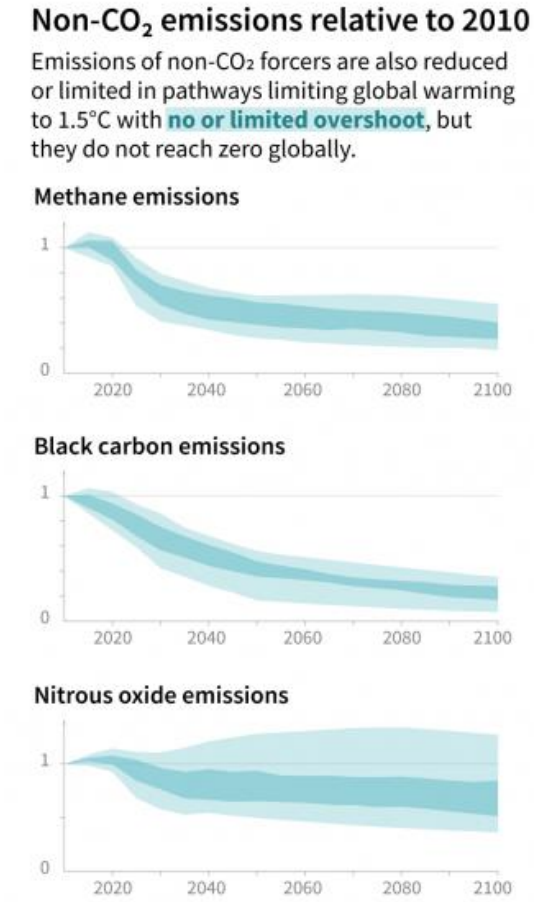
Limiting temperature change to 2C or 1.5C requires rapid emissions reductions



1.5°C Pathways: Carbon neutrality around 2050

2.0°C Pathways: Carbon neutrality around 2070



Source: IPCC, 2018

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The Paris Agreement produced an international framework focused on country commitments

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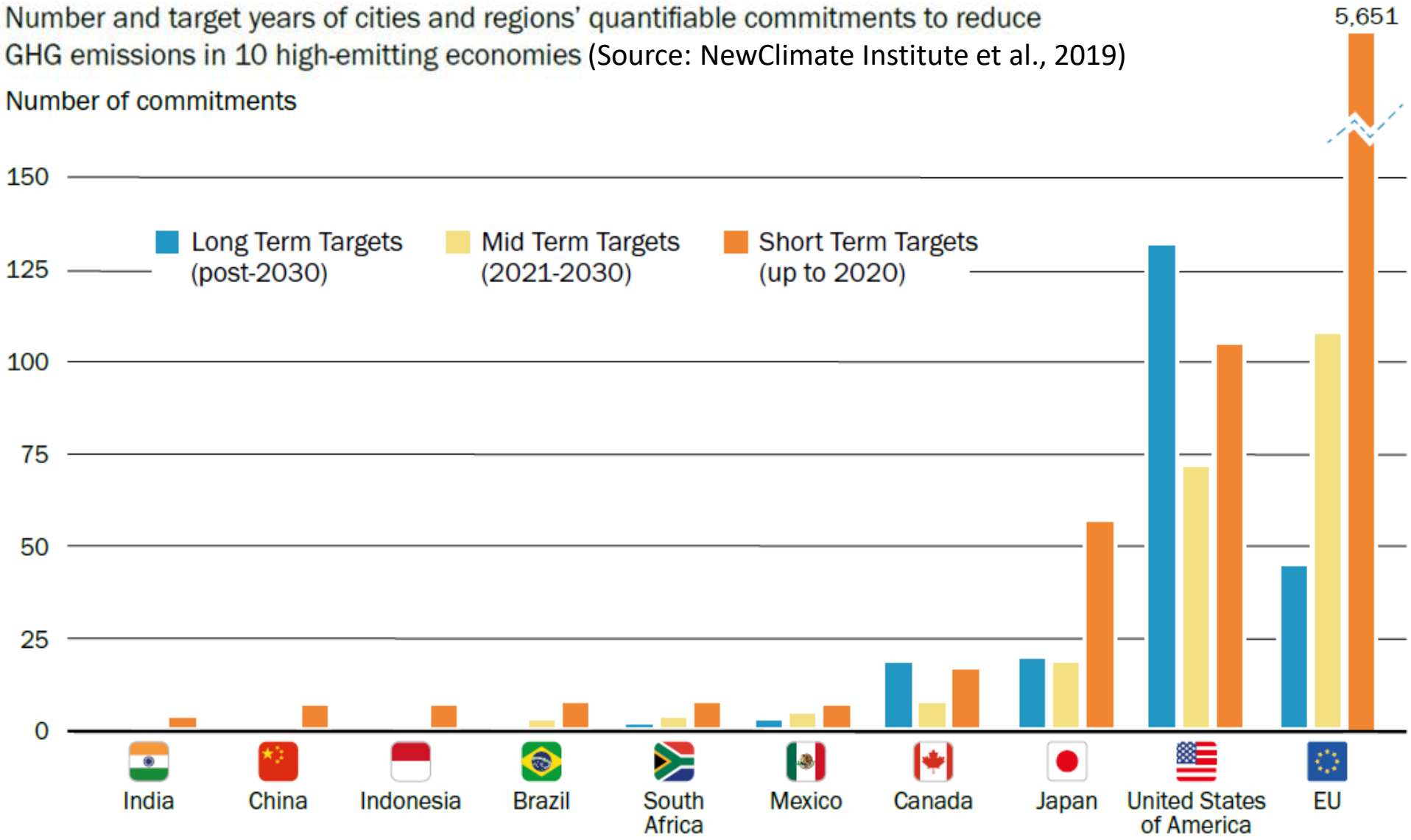
Cities, regions, and businesses are engaged in climate mitigation

Number and target years of cities and regions' quantifiable commitments to reduce GHG emissions in 10 high-emitting economies (Source: NewClimate Institute et al., 2019)



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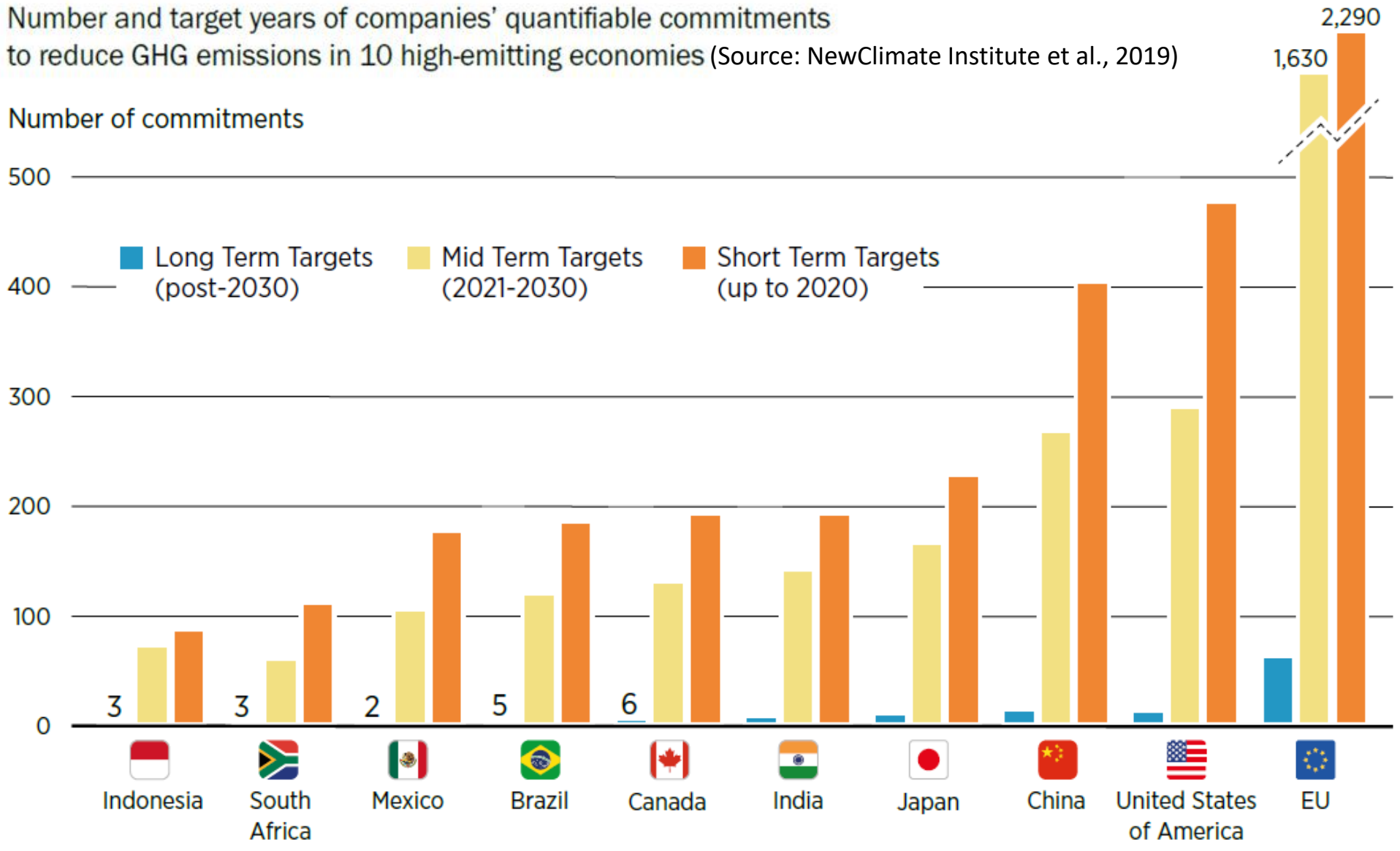
Cities, regions, and businesses are engaged in climate mitigation



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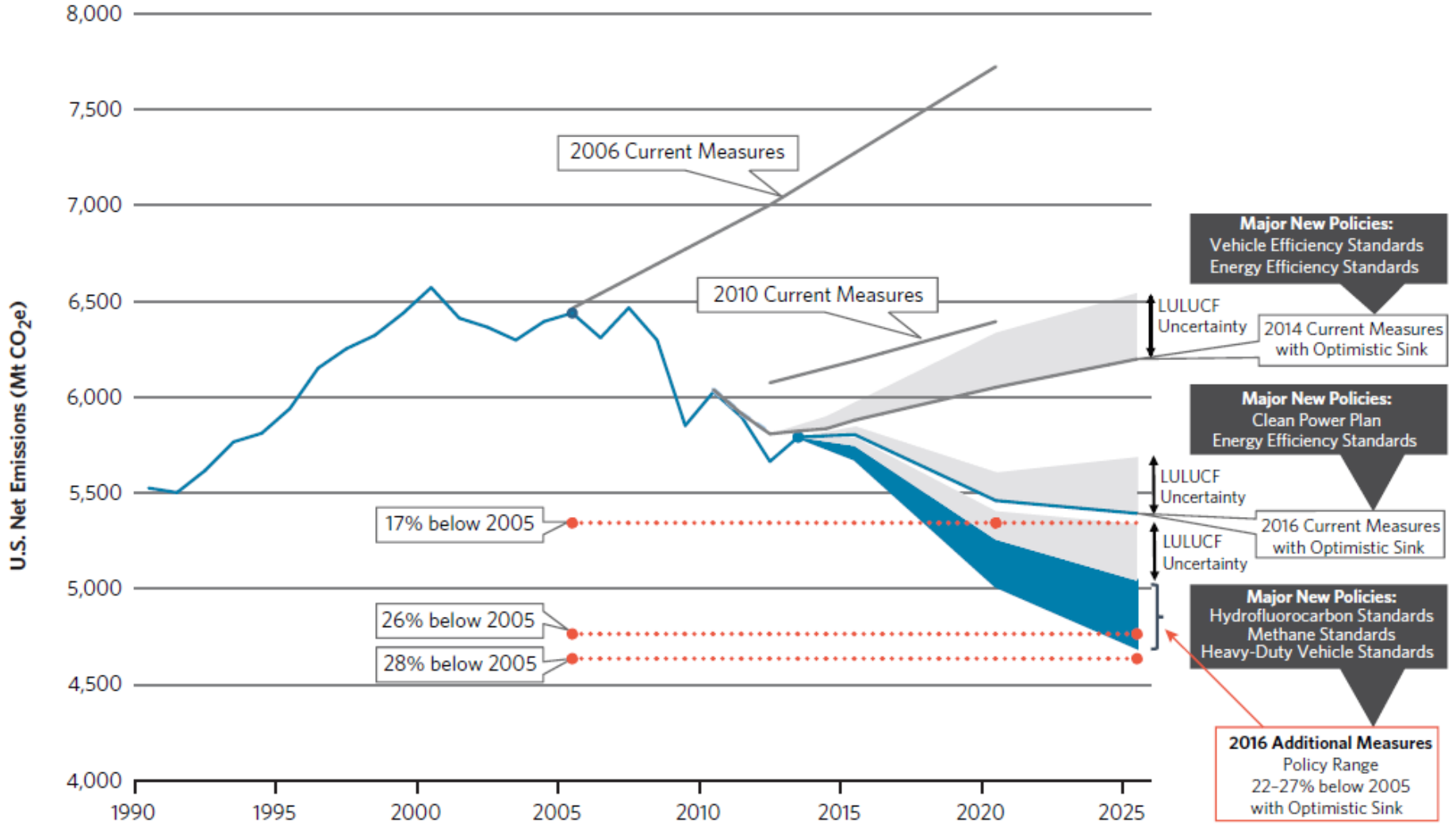
The U.S. NDC targeted 26-28% reductions by 2025



Source: U.S. Biennial Report (2016)

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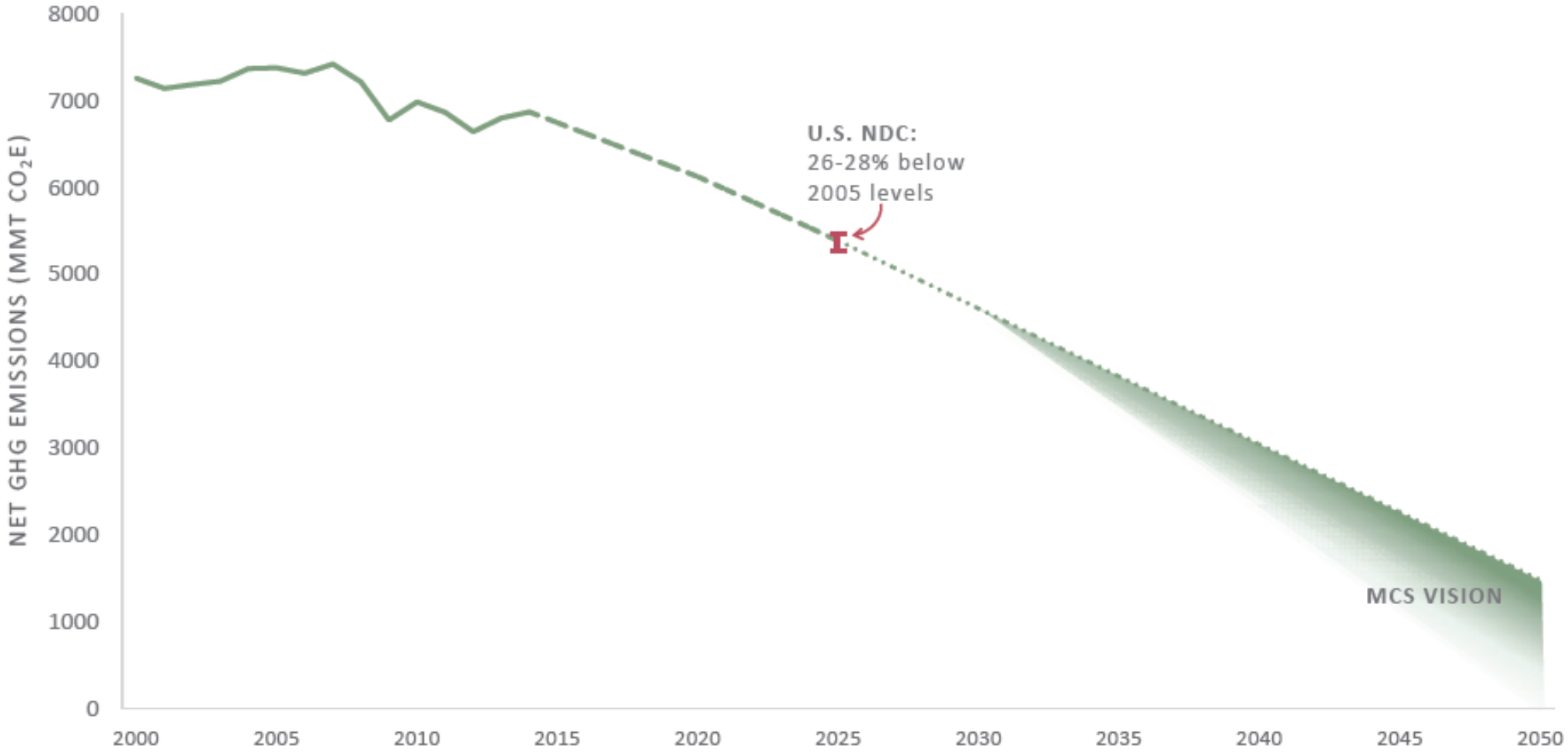
The U.S. Mid-Century Strategy targeted 80% or more reductions by 2050



Source: U.S. Mid-Century Strategy (2016)

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Today the United States began the process to withdraw from the Paris Agreement. Per the terms of the Agreement, the United States submitted formal notification of its withdrawal to the United Nations. The withdrawal will take effect one year from delivery of the notification.

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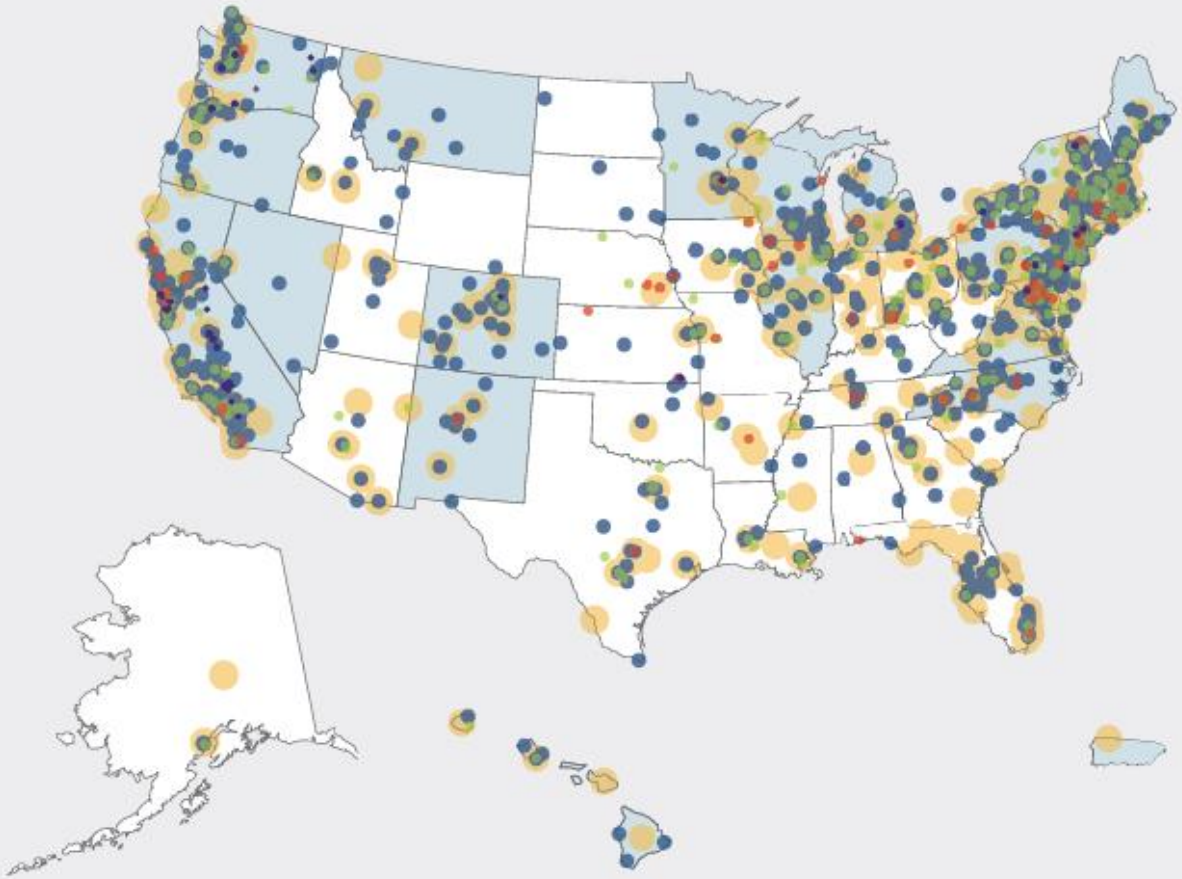
As noted in **his June 1, 2017 remarks**, President Trump made the decision to withdraw from the Paris Agreement because of the unfair economic burden imposed on American workers, businesses, and taxpayers by U.S. pledges made under the Agreement. The United States has reduced all types of emissions, even as we grow our economy and ensure our citizens' access to affordable energy. Our results speak for themselves: U.S. emissions of criteria air pollutants that impact human health and the environment declined by 74% between 1970 and 2018. U.S. net greenhouse gas emissions dropped 13% from 2005-2017, even as our economy grew over 19 percent.

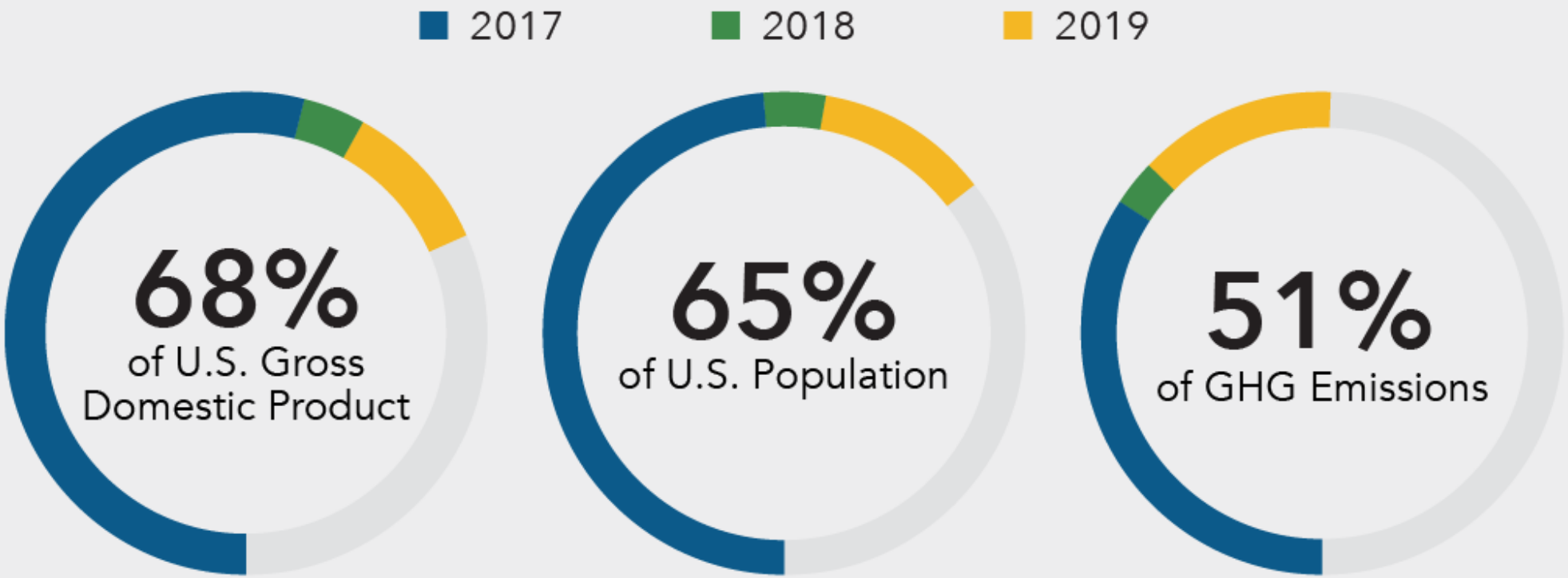
2019 U.S. coalition of climate actors



- States (25)
- Cities, Counties and Tribes (534)
- Businesses and Investors (2,008)
- Faith-Based and Cultural Organizations (981)
- Universities (400)
- Healthcare Organizations (38)

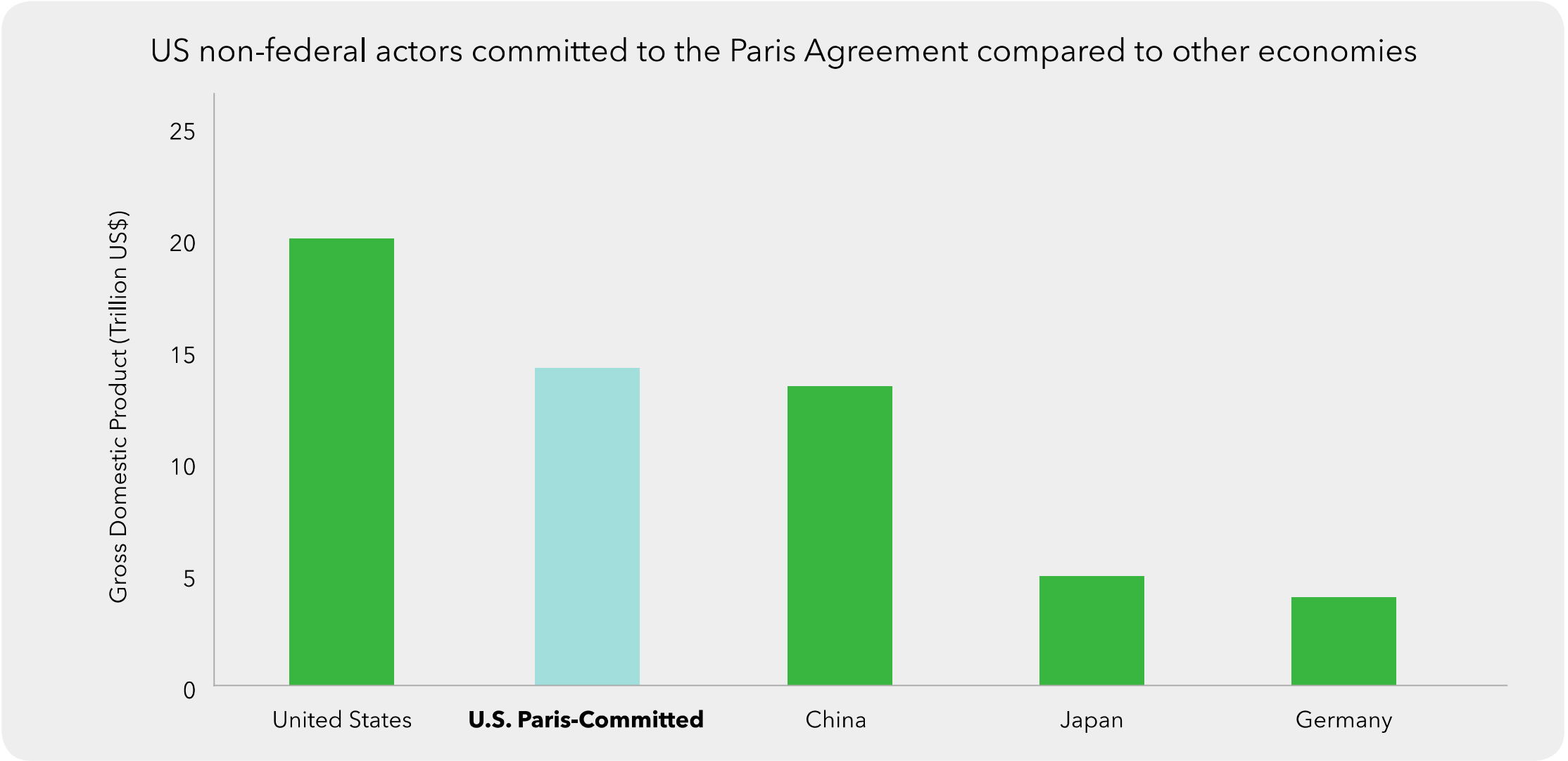
AMERICA'S PLEDGE

U.S. coalitions committed to climate action to meet the Paris Agreement goals now represent nearly 70% of U.S. GDP, nearly two-thirds of the U.S. population, and over half of U.S. greenhouse gas emissions.



AMERICA'S PLEDGE

U.S. coalitions would be the world's second largest economy—second only to the entire United States itself



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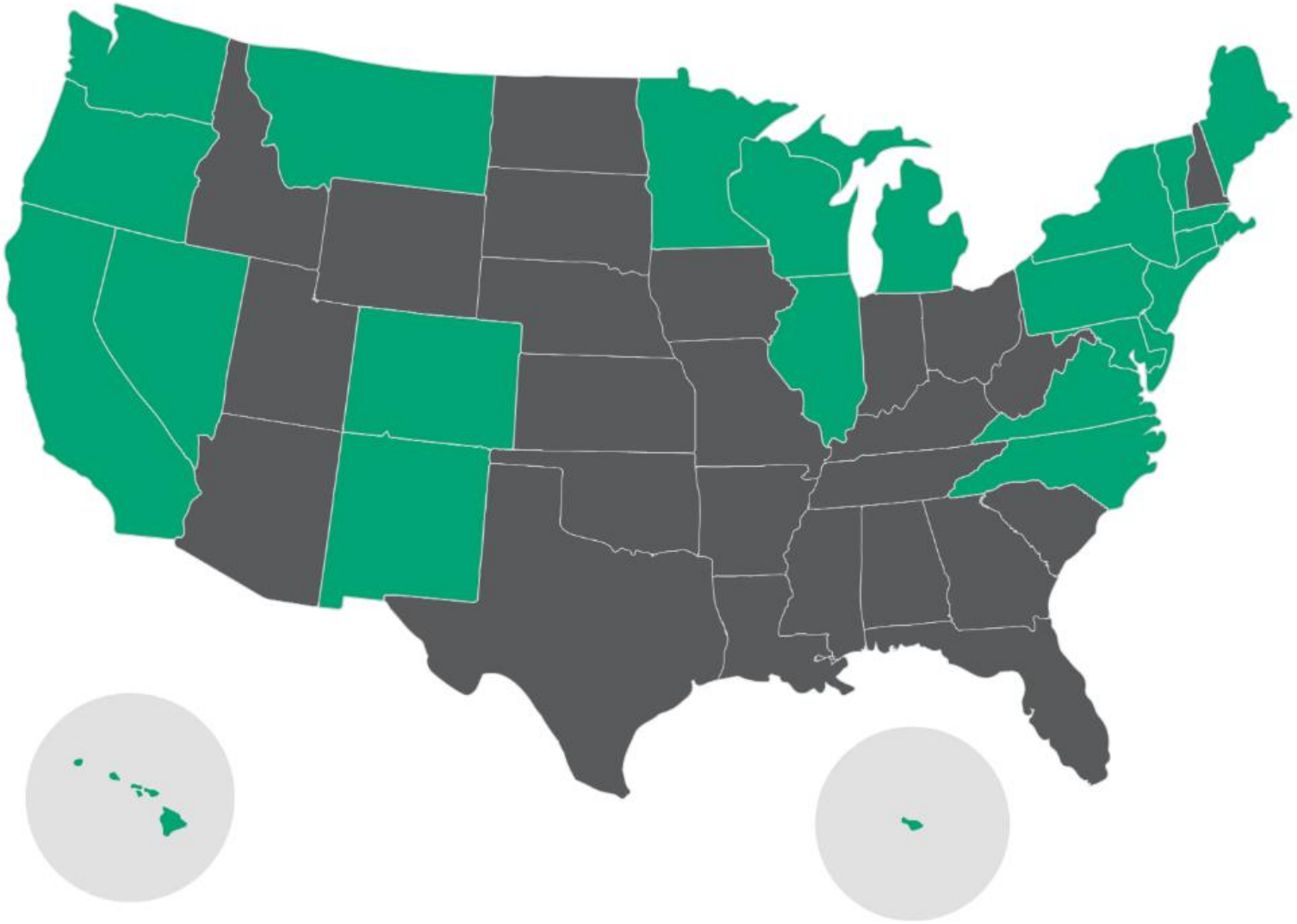
United States Climate Alliance States



The United States Climate Alliance is a bipartisan coalition of 24 governors committed to reducing greenhouse gas emissions consistent with the goals of the Paris Agreement.

http://www.usclimatealliance.org/

Example Coalitions

WE ARE STILL IN

Broad-Based Coalition of All Actor Types

AMERICA'S PLEDGE

Initiative to Aggregate, Analyze, And Showcase Climate Leadership by States, Cities and Businesses

USCA
States United for Climate Action

Coalition of State Governors

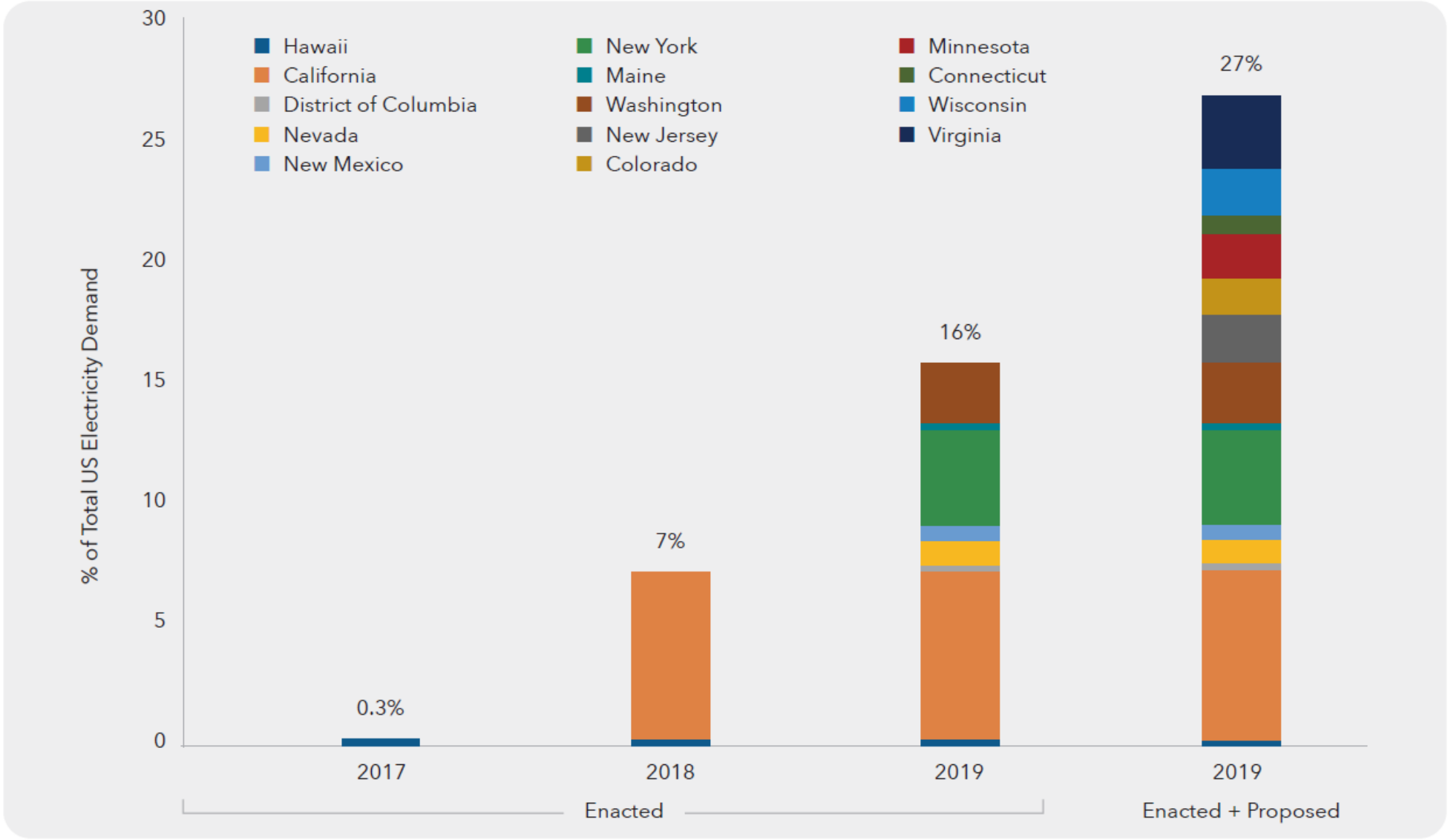
CLIMATE MAYORS

Coalition of City Mayors

WE MEAN BUSINESS

Coalition of Businesses

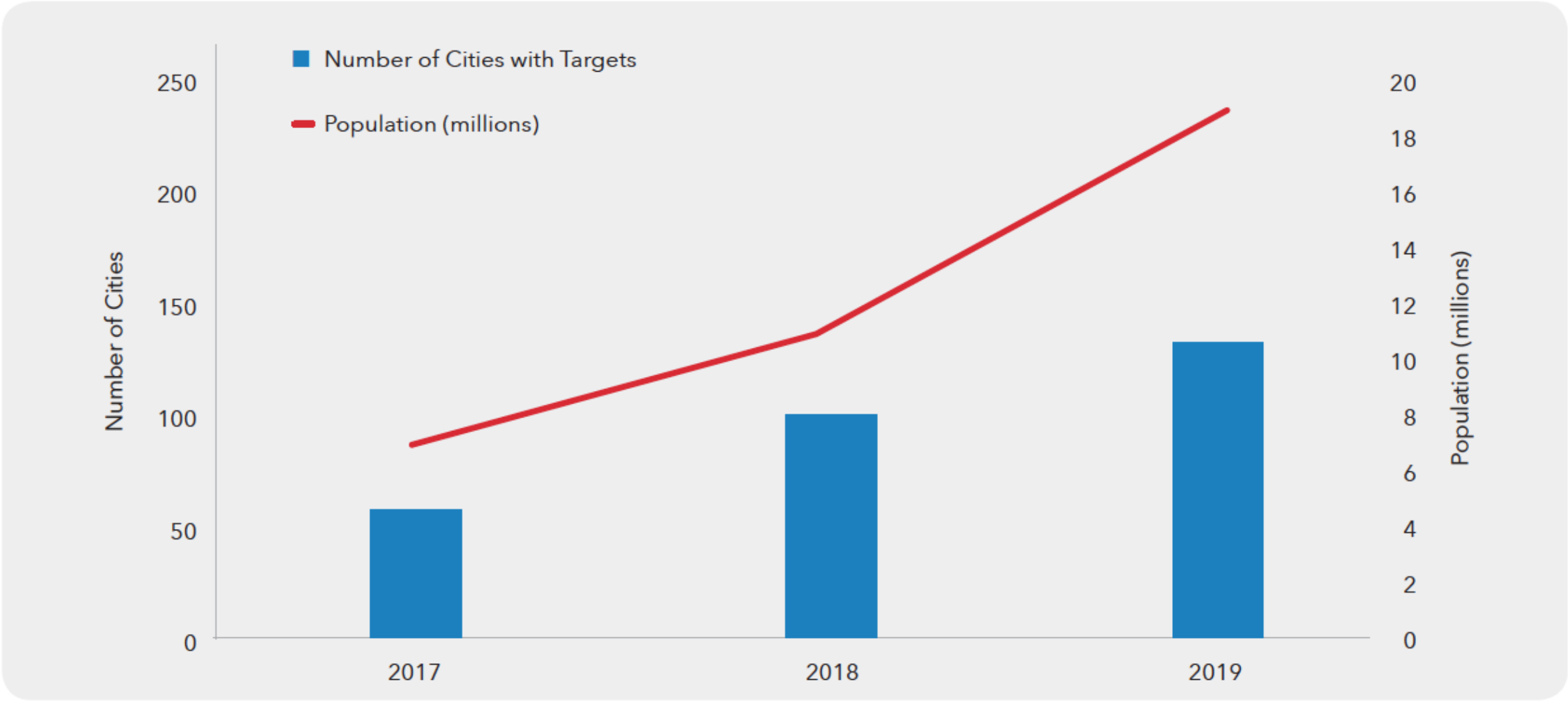
In 2019 states that have enacted 100% clean electricity goals into legislation account for 16% of the U.S. electricity demand.



If executive orders and governor's proposals supporting 100% clean electricity in other states are all enacted into law, these goals will reach 27% of the electricity demand.

AMERICA'S PLEDGE

In 2019, 133 American cities had 100% clean energy or clean electricity targets, with a population of 19 million.



AMERICA'S PLEDGE

Bloomberg Philanthropies

Accelerating America's Pledge assesses opportunities for U.S. reductions in 2030

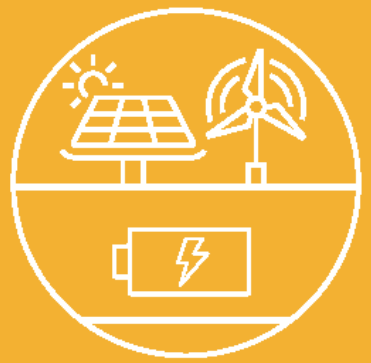
1. **Current Measures Scenario** – highlighting that progress is already underway based on the projected impact of commitments "on the books"
2. **Bottom-up Scenario** - What happens when successful state, local, and business policies and actions are applied broadly?
   - Tier 1: First-movers – adopt most ambitious policies on the books
   - Tier 2: Fast-followers – adopt moderately ambitious policies
   - Tier 3: Slow-followers – little or no action
3. **All-in Scenario** - What happens when ambitious new federal policies are layered on Bottom-up scenario?

Three Principles of Climate Action

PRINCIPLE 1

ACCELERATE TOWARD 100% CLEAN ELECTRICITY

Decarbonize electricity and other energy supplies



PRINCIPLE 2

DECARBONIZE END-USES

Decarbonize energy end-uses in our transportation, buildings, and industry, primarily through electrification and efficiency

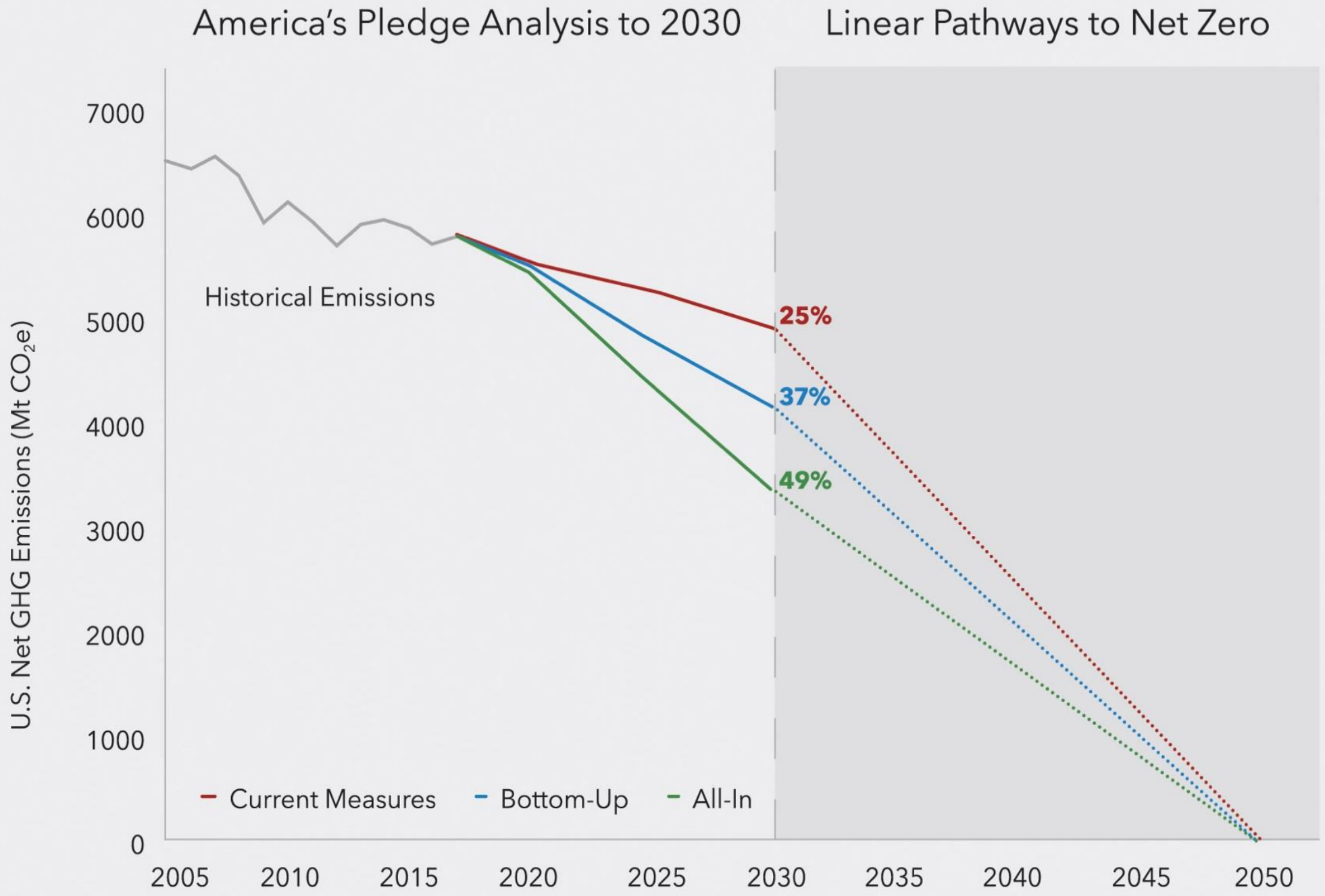
PRINCIPLE 3

ENHANCE ECOSYSTEMS

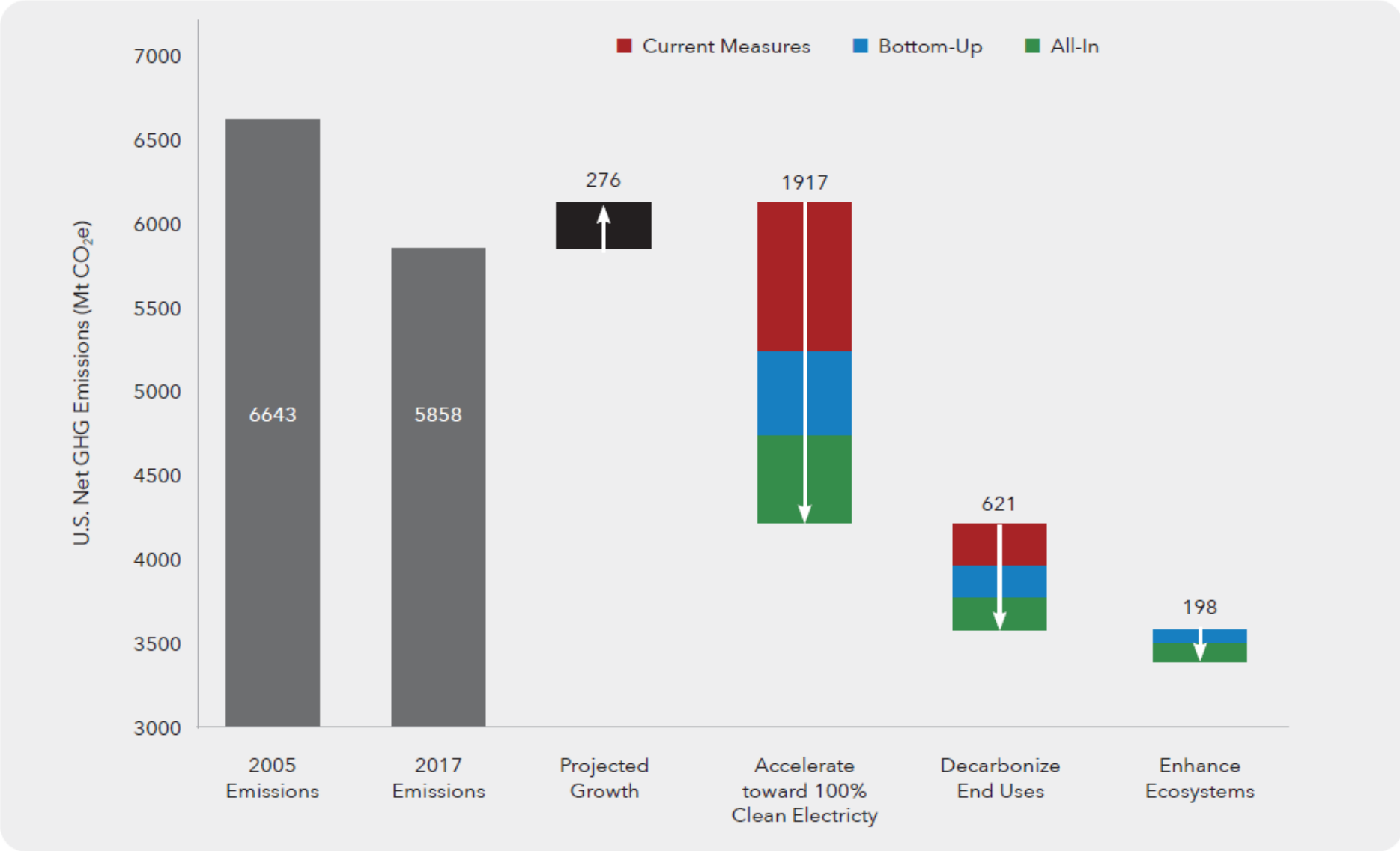
Enhance the carbon storage potential of our forests, farms, and coastal wetlands

The Bottom-Up Scenario: 2030 Strategy Platform

Accelerate toward 100% Clean Electricity	Decarbonize Buildings, Transportation & Industry	Enhance Ecosystem Carbon Storage
Leading States: • 60% renewable electricity • No more coal plants • Peak and then reduce reliance on gas • Reduced methane emissions **Fast Follower States** incorporate more modest renewable standard and slow gas builds Market trends and advocacy constrain coal and gas across the country, including in remaining states	**Leading States:** • New buildings 100% electric • Appliances replaced by electric at end-of-life • 2% EE improvement annually • EVs = 2/3 new car sales • ICE performance increased 4% annually • Energy management, electrification, CCUS in industry • HFCs phased down per Kigali Amendment **Fast Follower States** go roughly half as far. Remaining states make little progress.	**Leading States** incentivize low-cost natural climate solutions, such as: • Natural forest management • Optimal nutrient application • Use of cover crops Land carbon sink improved 11% compared to today


America's Pledge Analysis to 2030
Linear Pathways to Net Zero
U.S. Net GHG Emissions (Mt CO_2e)
7000
6000
5000
4000
3000
2000
1000
0
2005
2010
2015
2020
2025
2030
2035
2040
2045
2050
Historical Emissions
25%
37%
49%
Current Measures
Bottom-Up
All-In

Reductions are distributed across three Principles

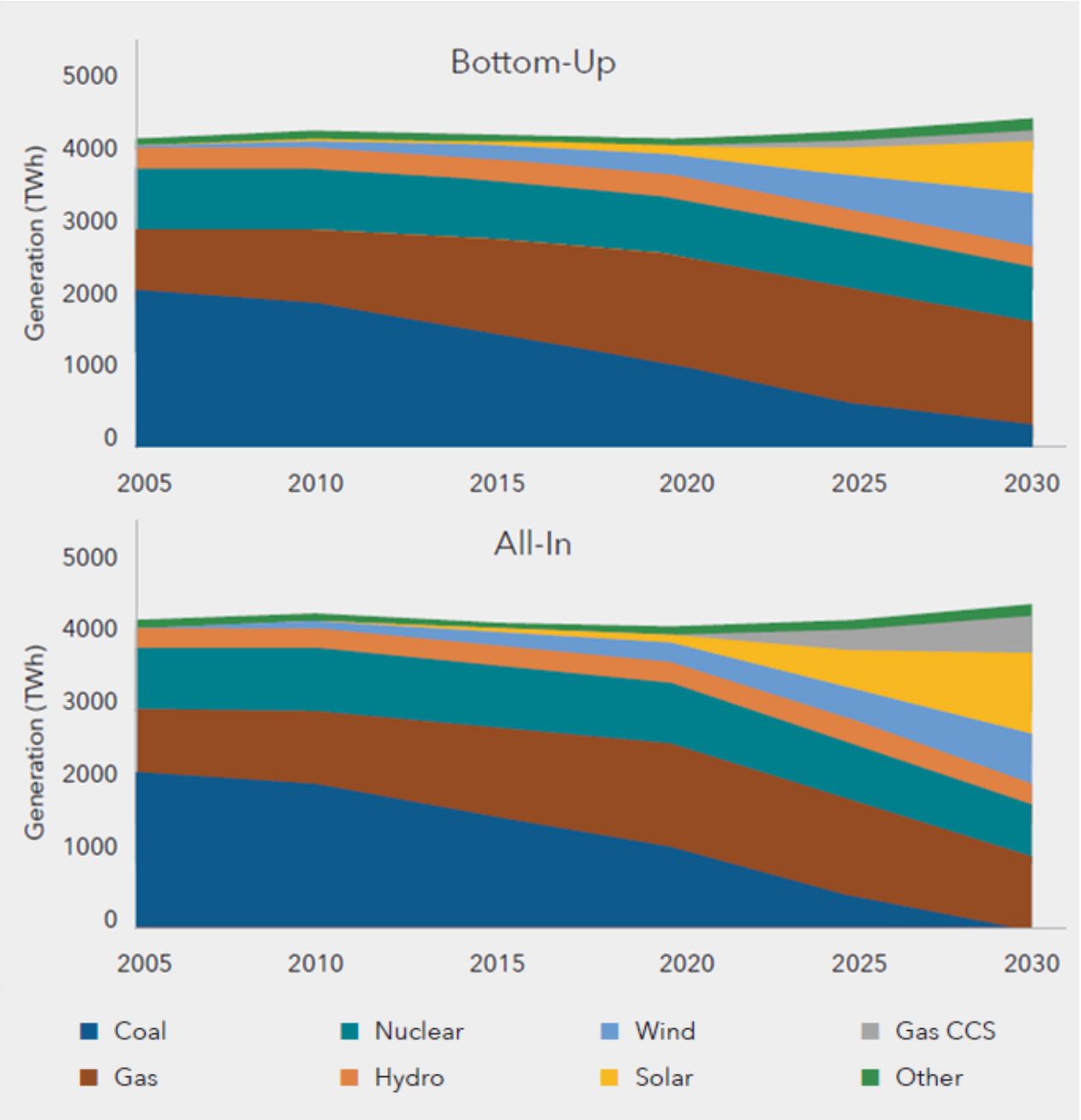


Electricity generation moves to clean sources.

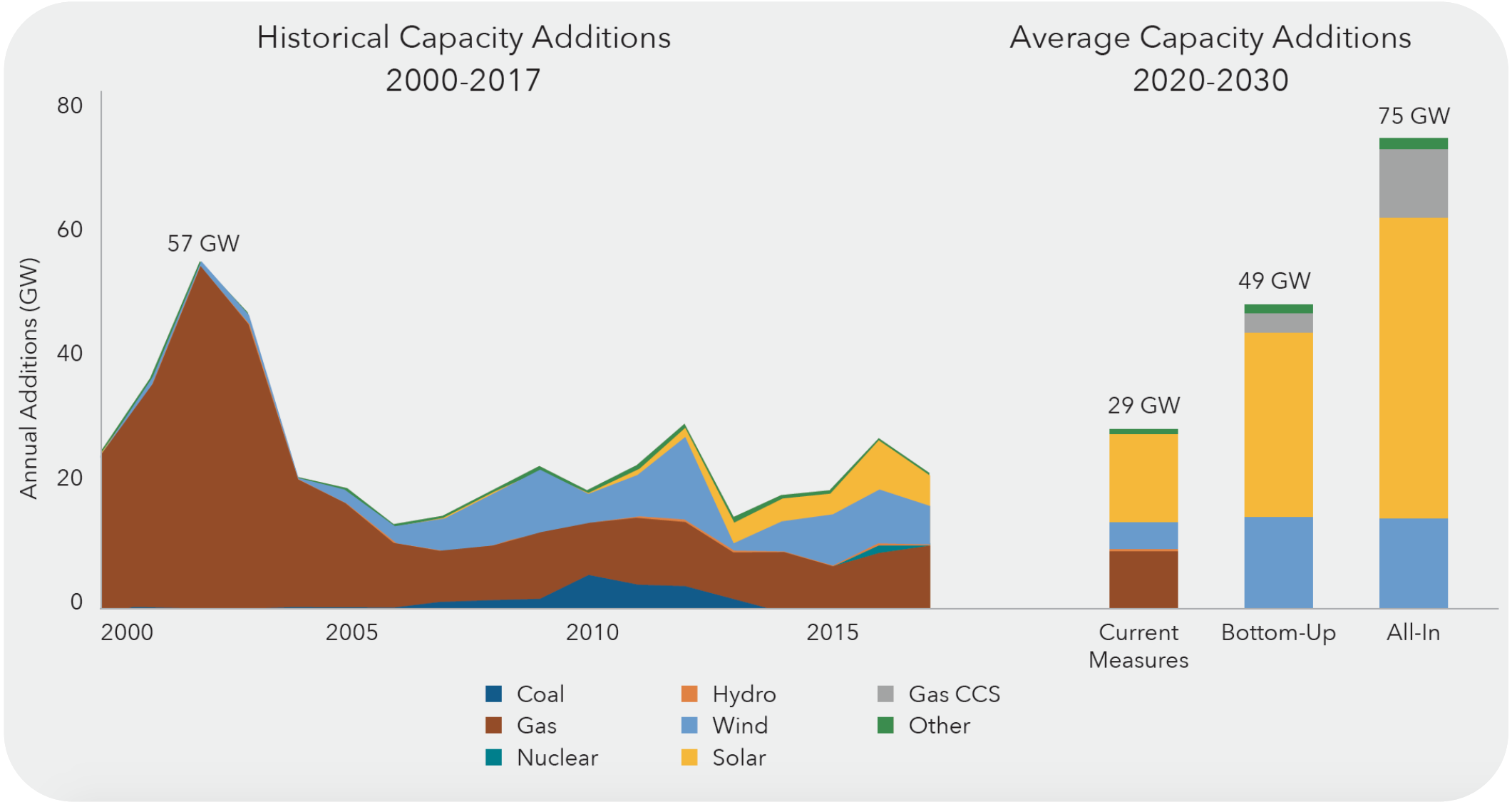
Compared to 17% today,

- **Bottom-up:**
  39% Renewable by 2030
- **All-In Scenario:**
  48% Renewable by 2030

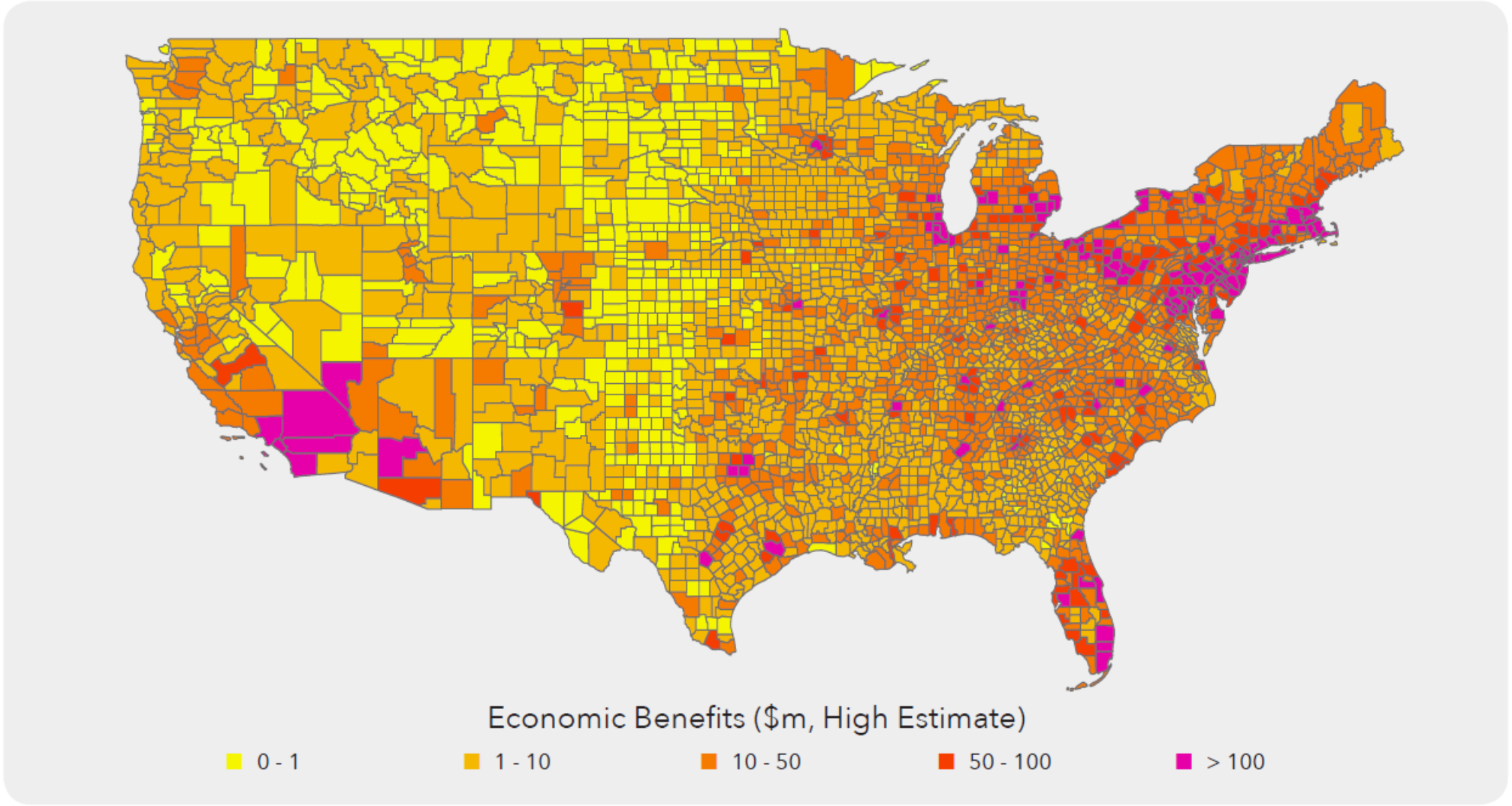
- Coal generation in 2030 is a fraction of what it is today



Clean Energy Buildout through 2030

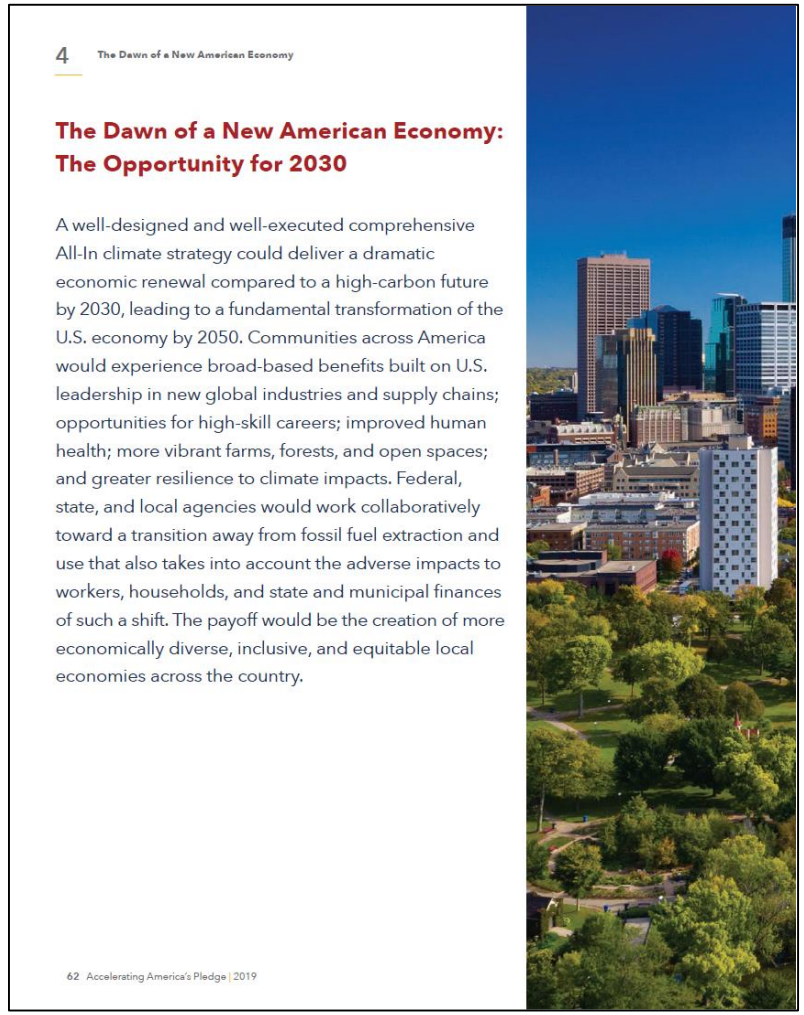


Incremental health benefits from reductions in fossil fuel generation under the All-In scenario reach $26-58 billion



The Dawn of a New American Economy: The Opportunity for 2030

A well-designed and well-executed comprehensive All-In climate strategy could deliver a dramatic economic renewal compared to a high-carbon future by 2030, leading to a fundamental transformation of the U.S. economy by 2050. Communities across America would experience broad-based benefits built on U.S. leadership in new global industries and supply chains; opportunities for high-skill careers; improved human health; more vibrant farms, forests, and open spaces; and greater resilience to climate impacts. Federal, state, and local agencies would work collaboratively toward a transition away from fossil fuel extraction and use that also takes into account the adverse impacts to workers, households, and state and municipal finances of such a shift. The payoff would be the creation of more economically diverse, inclusive, and equitable local economies across the country.



4 The Dawn of a New American Economy

The Dawn of a New American Economy: The Opportunity for 2030

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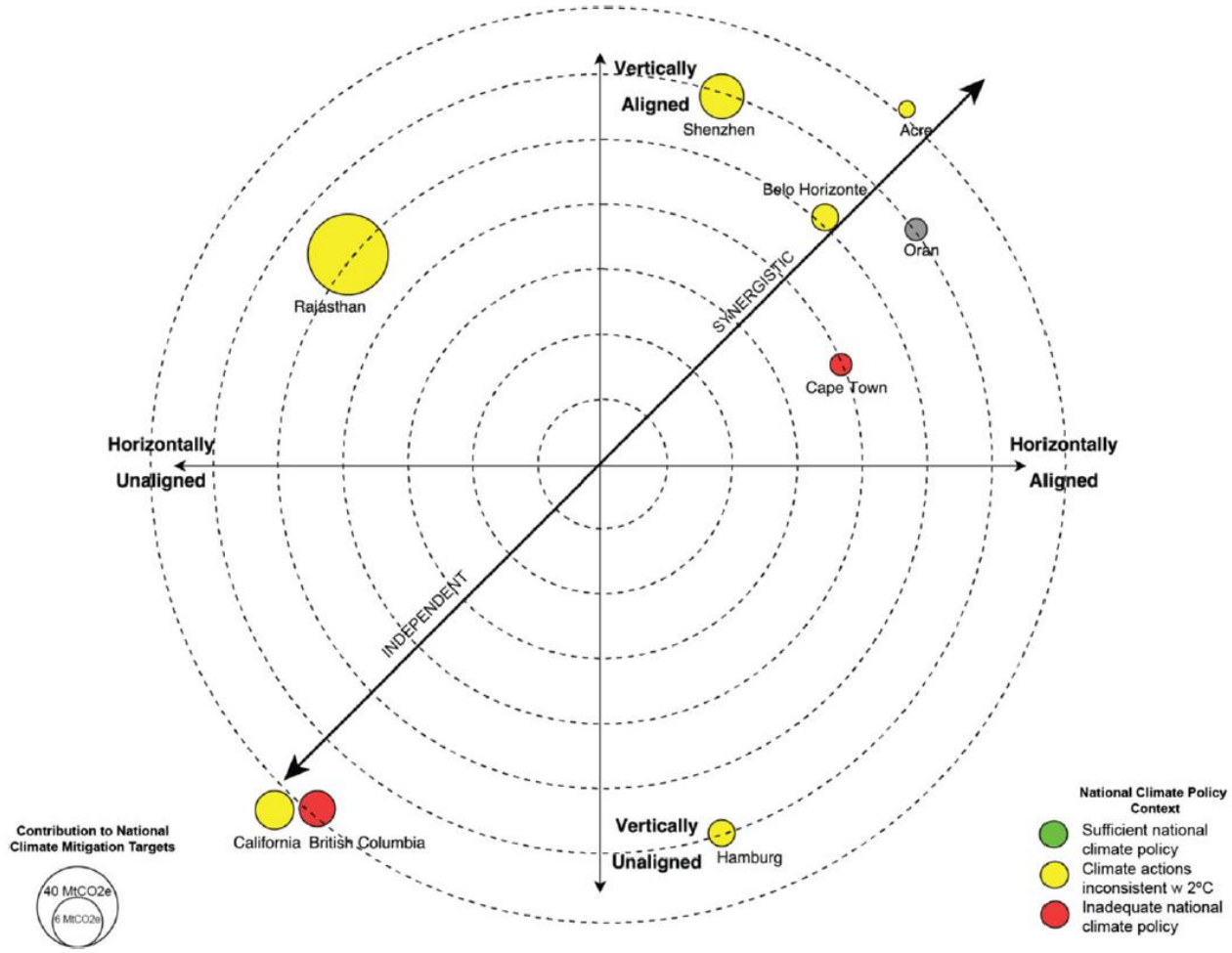
Coordination is important with more actors engaged in climate mitigation



Climatic Change (2017) 142:419–432
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Aligning subnational climate actions for the new post-Paris climate regime

Angel Hsu[1,2] · Amy J. Weinfurter[2] · Kaiyang Xu[2]

Received: 10 June 2016 / Accepted: 21 March 2017 / Published online: 3 April 2017

Abstract The Paris Agreement solidified the participation of subnational governments in global mitigation efforts, continuing the shift towards a polycentric landscape of climate action. Many scholars have suggested that the success of this emergent regime will depend, at least in part, on its ability to integrate climate action from non-state and subnational entities. Vertical alignment, the linking and coordination of policies between different levels of government, and horizontal alignment, the connection of peer cities and regions through networks of transnational climate governance, can help facilitate needed coherence. But, how do multiple actors link or interact at multiple scales and domains? In this article, we develop an analytical framework for examining different modes of vertical and horizontal alignment that subnational actors have employed to address climate change mitigation. We identify key elements in nine case studies of subnational climate action to examine the intersectionalities of alignment mechanisms that catalyze subnational climate actions. The paper concludes with a discussion about how vertical and horizontal alignment pathways overlap, intersect, and exhibit trade-offs.

Electronic supplementary material The online version of this article (doi:10.1007/s10584-017-1957-5) contains supplementary material, which is available to authorized users.

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Measurement becomes more challenging with more actors in climate mitigation

nature climate change

PERSPECTIVE

https://doi.org/10.1038/s41558-018-0338-z

A research roadmap for quantifying non-state and subnational climate mitigation action

Angel Hsu[1,2*], Niklas Höhne[3,4], Takeshi Kuramochi[4,5], Mark Roelfsema[6], Amy Weinfurter[7], Yihao Xie[7], Katharina Lütkehermöller[4], Sander Chan[8], Jan Corfee-Morlot[9], Philip Drost[10], Pedro Faria[11], Ann Gardiner[12], David J. Gordon[13], Thomas Hale[14], Nathan E Hultman[15], John Moorhead[16], Shirin Reuvers[11], Joana Setzer[17], Neelam Singh[18], Christopher Weber[19] and Oscar Widerberg[20]

Non-state and subnational climate actors have become central to global climate change governance. Quantitatively assessing climate mitigation undertaken by these entities is critical to understand the credibility of this trend. In this Perspective, we make recommendations regarding five main areas of research and methodological development related to evaluating non-state and subnational climate actions: defining clear boundaries and terminology; use of common methodologies to aggregate and assess non-state and subnational contributions; systematically dealing with issues of overlap; estimating the likelihood of implementation; and addressing data gaps.

As major international bodies such as the United Nations and the IPCC work to produce scientific assessments of the efforts needed to increase the likelihood of achieving 1.5 or 2 °C emissions pathways[1–3], the contributions from non-state (that is, business, investors and civil society organizations) and subnational (local (city, state) and regional government) actors remain uncertain. There have been several studies[4–9] assessing these actors' potential contributions to global climate change mitigation efforts, yet these assessments utilize differing assumptions, methodologies and data sources, which does not allow for accurate comparison or global aggregation[10].

Non-state and subnational actors can help national governments to reach existing climate policy goals and set higher targets[11–13]. While the literature suggests that non-state and subnational climate action are, on average, complementary to national policies[13,14], such actions can also help fill gaps. The 'We Are Still In' and America's Pledge campaigns emerged following President Trump's announcement of national climate policy rollbacks and so far include more than 3,500 mayors, governors, business leaders and higher learning institutions pledging to uphold the Paris Agreement[15]. This initiative, along with others such as the 2014 New York Climate Summit or the ongoing Marrakech Partnership for Global Climate Action, demonstrate subnational and non-state actors' roles as contributors to national and international climate, development and sustainability efforts.

As climate governance is evolving into what some scholars term polycentric[16,17], researchers are now conducting studies that seek to quantify the contributions of non-state and subnational climate actions to global climate mitigation in terms of tonnes of GHG emissions reductions (that is, aggregation analyses). These aggregation studies are critically important to the international climate governance regime for several reasons. Non-state and subnational actors are undertaking climate mitigation efforts (many of them independent of national policy) that are leading to measurable emissions reductions. These actors could also drive additional climate policy action in a number of ways. Non-state and subnational climate actions help identify, scale up and pilot innovative approaches to climate action for national governments[18]. Global analyses of these actors' efforts could demonstrate and communicate the collective capacity of non-state and subnational actors in periodic stocktakes for the Paris Agreement, and the results may inform periodic revisions of national climate action plans (Nationally Determined Contributions; NDCs)[19].

Existing global aggregation studies, however, are fragmented and incomplete. The field suffers from a lack of terminological consistency, varying methodological approaches and difficulty measuring whether non-state and subnational actions achieve their goals. It is vital for sound global climate governance to develop a clear and accurate accounting of non-state and subnational actors' climate efforts, without which it is impossible to estimate with any accuracy whether global emissions are in line with trajectories to avoid catastrophic warming.

While there are many aspects of non-state and subnational climate actions that could be evaluated, such as their political impact on national governments and intergovernmental processes[12,20,21], here we focus on non-state and subnational actors' actions to reduce GHG emissions. We draw on studies that seek to quantify and aggregate non-state and subnational actors' contributions to global climate mitigation as of September 2017 (see Supplementary Table 1). Applying a consistent framework of analysis to determine

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"We make recommendations regarding five main areas of research and methodological development related to evaluating non-state and subnational climate actions:

- defining clear boundaries and terminology;
- use of common methodologies to aggregate and assess non-state and subnational contributions;
- systematically dealing with issues of overlap;
- estimating the likelihood of implementation;
- addressing data gaps."

Source: Hsu et al., (2019)

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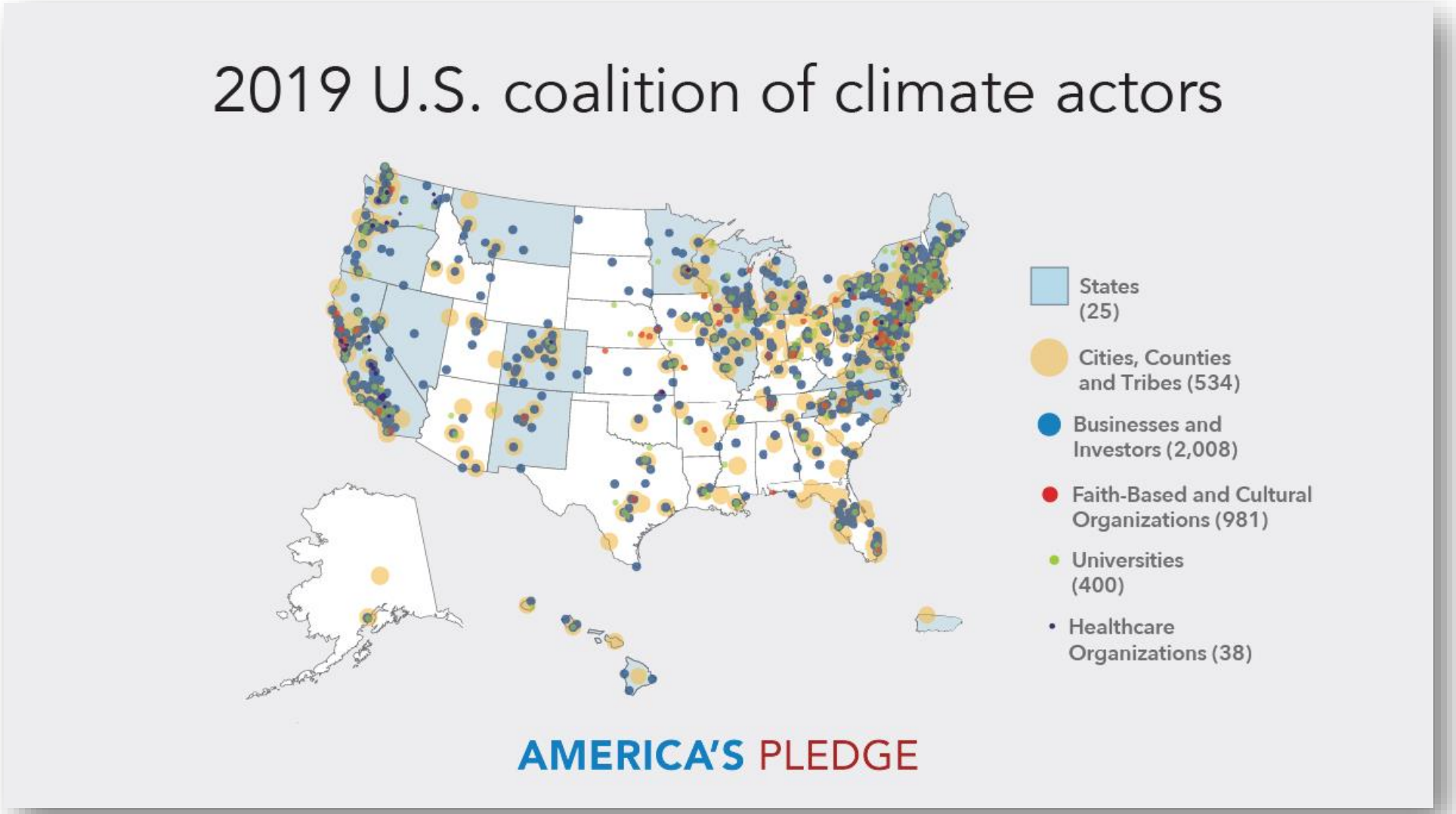
The Potential of a Multi-Actor Approach to Climate Mitigation



Thank You

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Citations

- The America's Pledge Initiative on Climate Change (2019) "Accelerating America's Pledge: Going All-In to Build a Prosperous, Low-Carbon Economy for the United States." By N. Hultman, C. Frisch, L. Clarke, K. Kennedy, P. Bodnar, P. Hansel, T. Cyrs, M. Manion, M. Edwards, J. Lund, C. Bowman, J. Jaeger, R. Cui, A. Clapper, A. Sen, D. Saha, M. Westphal, W. Jaglom, J.C. Altamirano, H. Hashimoto, M. Dennis, K. Hammoud, C. Henderson, G. Zwicker, M, Ryan, J. O'Neill, E. Goldfield. Published by Bloomberg Philanthropies with University of Maryland Center for Global Sustainability, Rocky Mountain Institute, and World Resources Institute. New York. Available at: americaspledge.com/reports
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