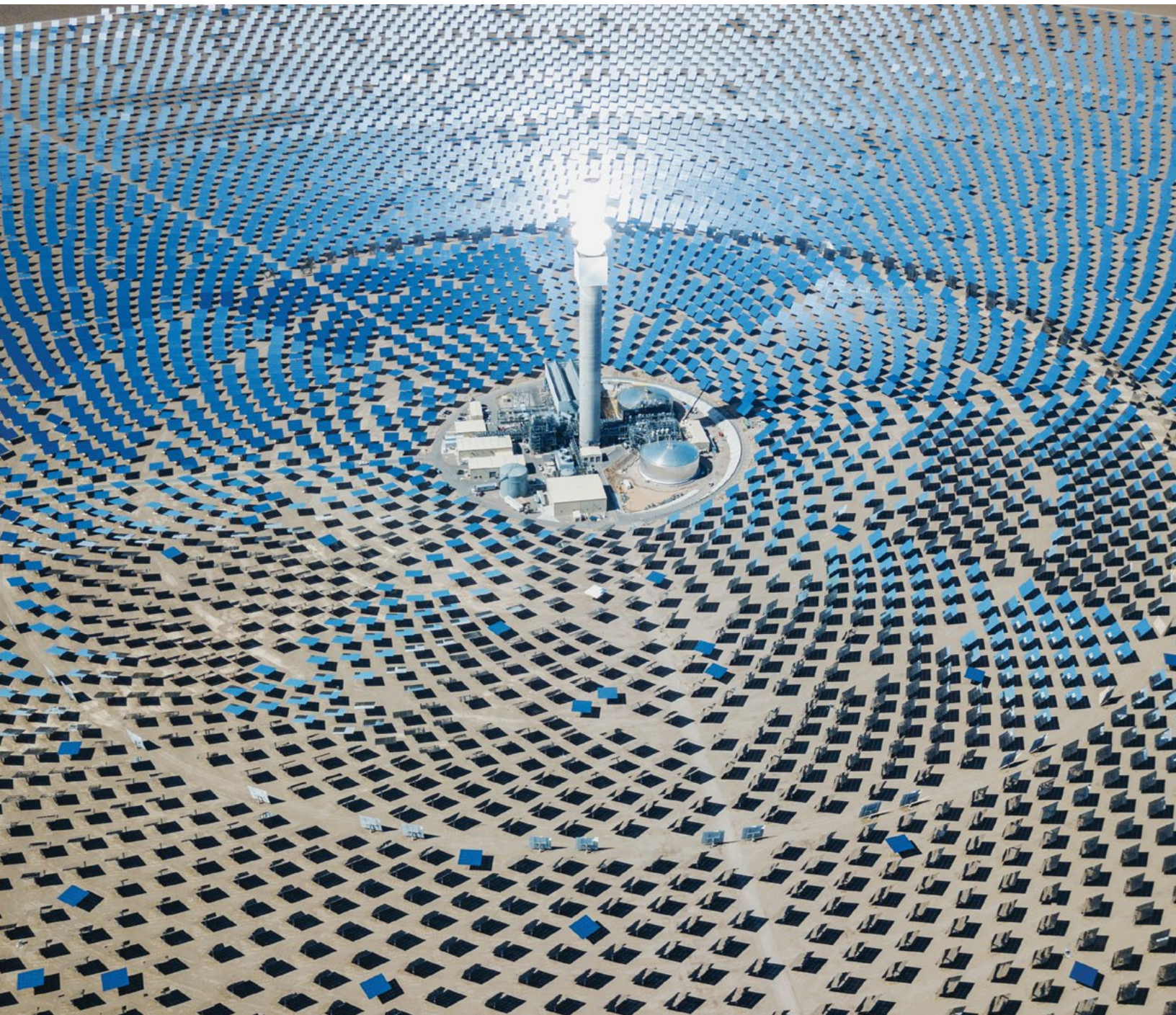


FULFILLING AMERICA'S PLEDGE

How States, Cities, and
Businesses Are Leading
the United States to
a Low-Carbon Future



Executive Summary

**For the full report, see:
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About America's Pledge

When President Donald Trump announced his intention to withdraw the United States from the Paris Agreement in June 2017, the response from across the country was swift and significant. An unprecedented coalition of U.S. states, cities, businesses, universities, and other organizations spoke out in continued support for America's climate pledge to the world.

Coalitions backing the Paris Agreement, including the notable "We Are Still In" network, have since doubled in size, with over 3,000 signatories. States, cities, and businesses all over the United States are continuing to lead by adopting greenhouse gas (GHG) emissions reduction targets and other policies to deliver emissions reductions.

In July 2017, former New York City Mayor and United Nations Secretary-General's Special Envoy for Climate Action Michael R. Bloomberg and California Governor Edmund G. Brown, Jr., launched an initiative, known as America's Pledge, to analyze, catalyze, and showcase climate action leadership by U.S. governors, mayors, business leaders, and others. Five months later, at the 23rd Conference of the Parties to the United Nations

Framework Convention on Climate Change (COP-23), Michael Bloomberg and Governor Brown published a comprehensive survey of U.S. climate action led by such real economy actors. This first report estimated that real economy actors representing more than half the U.S. economy—whose economic activity is equivalent to that of the third-largest country in the world—were actively engaged in fulfilling the Paris Agreement and had demonstrated their potential to drive decarbonization swiftly and effectively.

This report, *Fulfilling America's Pledge*, builds on our 2017 report and provides the most comprehensive assessment to date of how U.S. states, cities, businesses, and others (often referenced within this report as "real economy actors") are embracing new economic opportunities and technologies

to implement climate targets and deliver emissions reductions within their own jurisdictions and operations under their own authority. This report includes an assessment of the impact of their existing commitments on the overall U.S. emissions trajectory, and provides a concise roadmap of 10 broad opportunities for action that together can lay the groundwork for even deeper emissions reductions from the real economy. This report also provides an internationally applicable toolkit to help policymakers and other stakeholders understand how real economy actors can drive more ambitious climate outcomes and serve as implementing partners in the context of other national governments' nationally determined contributions (NDCs) under the Paris Agreement.

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Executive Summary

KEY POINTS IN THIS REPORT

1. Implementing the vision of the Paris Agreement calls for broad, rapid, and significant engagement across all parts of society in order to reap the benefits of a low-carbon, climate-resilient future fueled by clean jobs and economic growth. In the United States, cities, states, and businesses, and other real economy actors have embraced this future—helping drive better outcomes for their own citizens and business operations. Although their efforts are driven in part by necessity, in light of the lack of national-level leadership on climate change, these real economy actors have embraced action for the benefit of their own constituents and stakeholders while helping bend the emissions curve downward.
2. Today, we are almost halfway to the original U.S. target under the Paris Agreement of 26-28 percent below 2005 levels by 2025. Across the country, real economy actors have established policies and commitments which, as they are implemented, will drive continued substantial progress towards the Paris pledge.
3. Current federal and real economy commitments, combined with market forces, will drive U.S. emissions to 17 percent below 2005 levels by 2025, roughly two-thirds of the way to the original U.S. target.
4. This report presents a roadmap for 10 *Climate Action Strategies* that are high-impact, near-term, and readily available for implementation by cities, states, businesses, and other actors. This analysis estimates that fully implementing these measures could drive emissions down further, to 21 percent below 2005 levels by 2025.
5. But “readily available” cannot be our limit. Broader engagement and mobilization of motivated cities, states, and businesses can both serve their immediate short-term priorities and enable continued American leadership on climate. It is vital for real economy actors to identify and drive climate reforms that benefit their constituents and stakeholders.
6. Broader engagement of this real economy coalition, within realistic legal and political limits, has the potential to reduce emissions by more than 24 percent below 2005 levels by 2025. This would be within striking distance of the Paris pledge, making the 26 percent threshold achievable shortly thereafter.
7. As we move onward from the Paris pledge, this momentum in turn sets the stage for more rapid decarbonization in the 2025-2030 period. This analysis demonstrates that essential deep decarbonization (80 percent or more by 2050) can be led by the bottom-up efforts of real economy actors—but only with deep collaboration and engagement.

In 2015, the world came together in Paris to forge the first truly global climate agreement: a robust, long-term framework designed to reduce GHG pollution in order to hold global temperature increases to well below 2 degrees Celsius and prevent “dangerous anthropogenic interference with the climate system.”¹

The Paris Agreement entered into force in record time, and with one notable exception, the United States, national leaders in all countries of the world have continued to support the Paris Agreement’s goals and approach. The reasons are clear: the risks of climate change to human health and ecosystems are too great, and the benefits of embracing clean energy innovations for well-being, jobs, and economic growth are many. Such action demands full partnership and deep collaboration between national governments and the full range of stakeholders and entities that they represent on the international stage: states, cities, businesses, universities, and communities. It is these *real economy actors* whose decisions shape greenhouse gas (GHG) emissions, drive innovation, and determine the speed of the global energy transition. And nowhere is this kind of decentralized climate leadership currently more important than in the United States.

This report refers to the many U.S. entities taking action on climate change outside the federal government as **real economy actors**.

This term covers a diverse set of such actors, including cities, states, businesses, investors, counties, regional associations, faith institutions, and universities. The term ‘real economy actor’ is derived from economic governance literature.³

Though the meaning can shift in different contexts, it is utilized in this report to differentiate their actions from the current actions of the federal government. In other reports and in the context of the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC), such groups are sometimes called “non-state actors,” “sub-national actors,” or “non-Party stakeholders.”



Three scenarios in this report build out this ladder of ambition:

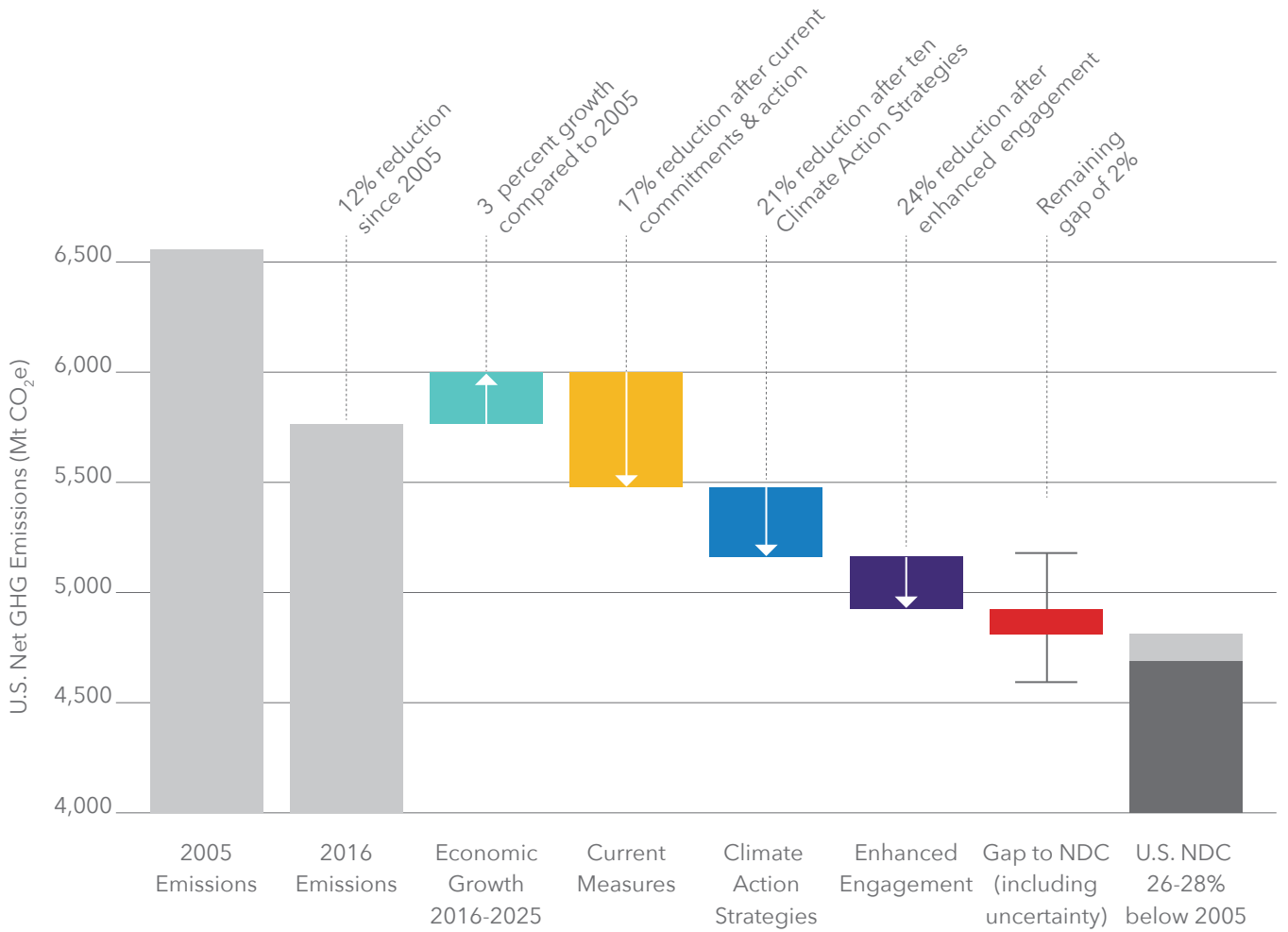
- First, the *Current Measures* scenario estimates the extent to which existing state, city, and business commitments and policies are likely to reduce emissions;
- Second, an extensive consultation and analysis process identified a discrete set of 10 high-impact, near-term, and readily available opportunities, and estimated their potential to reduce emissions via the *Climate Action Strategies* scenario; and
- Third, the *Enhanced Engagement* scenario models what might be possible if an even broader set of ambitious undertakings by states, cities, and businesses were implemented across the economy.

Importantly, even the most ambitious scenario modeled here focuses on what can plausibly be achieved through state, city, and business actions, prior to federal reengagement, taking into consideration limitations, including legal barriers to scaling specific policies and the political unwillingness of local government in certain regions of the United States to take up climate policies.



The basis for this analysis is an innovative modeling approach developed specifically for the America's Pledge initiative. It integrates a well-established top-down, economy-wide integrated assessment model (the Global Change Assessment Model for the United States of America, or GCAM-USA) with a new, bottom-up aggregation tool developed specifically for this effort to fully and accurately account for the GHG abatement impact of state, city, and business climate action (the Aggregation Tool for modeling Historic and Enhanced Non-Federal Actions, or ATHENA). GCAM-USA is the same economy-wide modeling tool employed by the U.S. federal government in projecting emissions for its Mid-Century Strategy (MCS) report to the UNFCCC.

Figure ES-1: State, City, and Business Actions can Significantly Cut U.S. Emissions in 2025 and Accelerate Momentum for Long-term Decarbonization



Climate Action Strategies:

- #1: Double down on renewable energy targets
- #2: Accelerate the retirement of coal power
- #3: Encourage residential and commercial building efficiency retrofits
- #4: Electrify building energy use
- #5: Accelerate electric vehicle (EV) adoption
- #6: Phase down super-polluting hydrofluorocarbons (HFCs)
- #7: Stop methane leaks at the wellhead
- #8: Reduce methane leaks in cities
- #9: Develop regional strategies for carbon sequestration on natural and working lands
- #10: Form state coalitions for carbon pricing

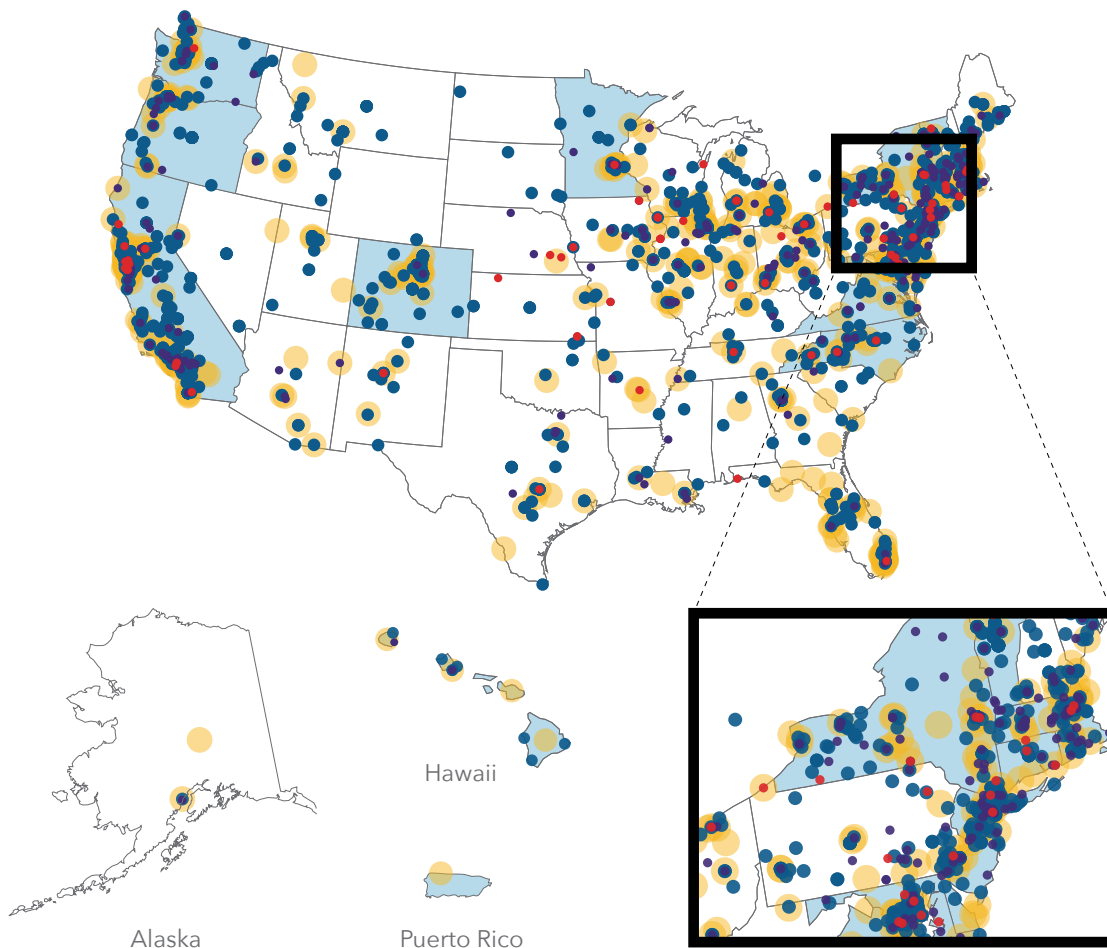
Source: Historical emissions data is from the U.S. EPA "Inventory of GHG Emissions and Sinks: 1990-2016"; projected emissions based on modeling from the America's Pledge research team

Current Efforts by States, Cities, and Businesses Are Yielding Significant Results

In the year since the Trump Administration announced its intent to withdraw from the Paris Agreement, over 3,000 real economy actors have pledged their support for the Paris Agreement and commitment to continued action on climate change by joining the “We Are Still In”

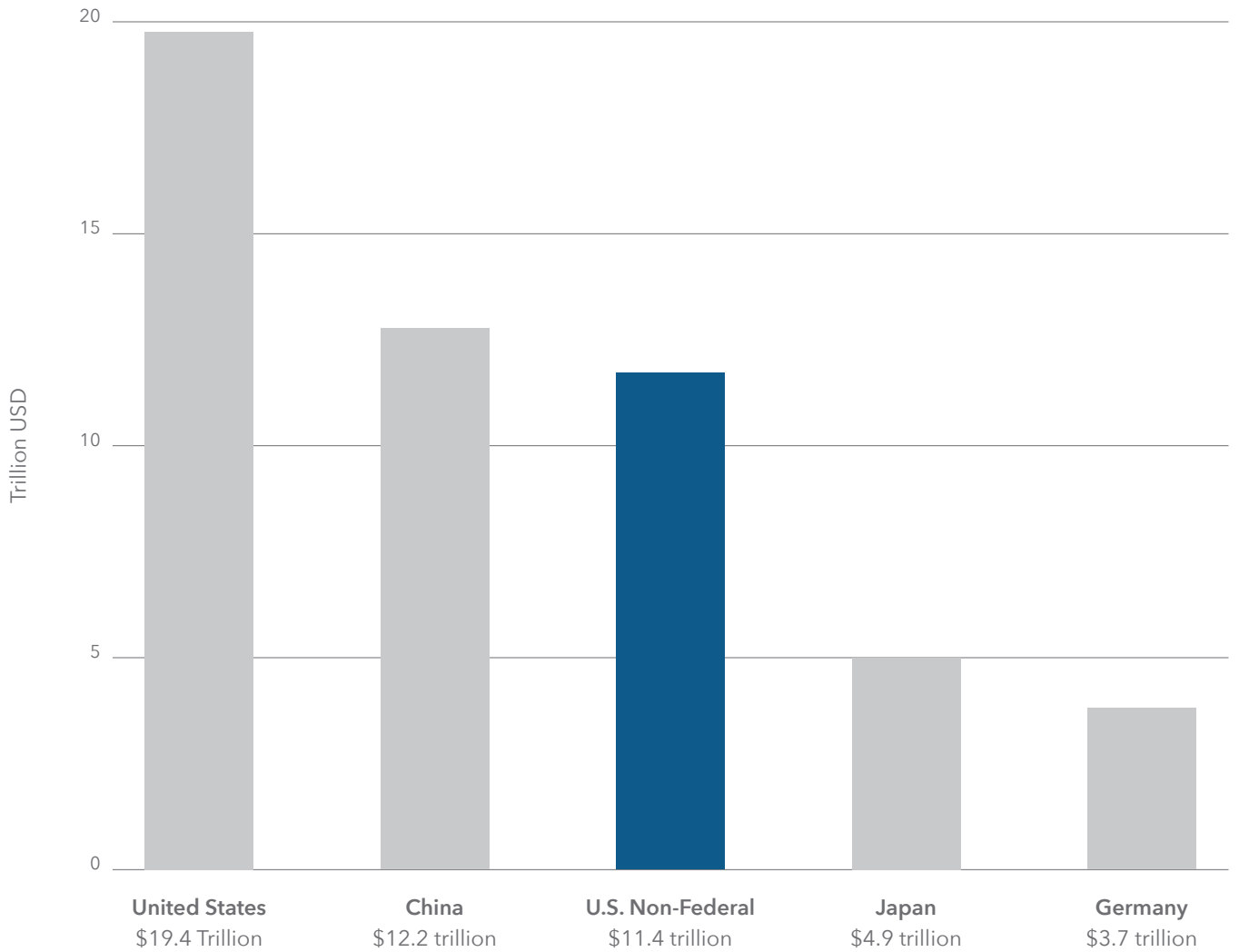
declaration and participating in other networks such as the U.S. Climate Alliance and the Climate Mayors. The economic activity of this “coalition of the willing” is significant, equivalent to that of the third-largest country in the world (Figure ES-2). Specifically, the U.S. states, cities, businesses, and

other leaders of the real economy that remain committed to the Paris Agreement represent over half of the U.S. population (173 million people), over half of the American economy (\$11.4 trillion), and over 35 percent of nationwide GHG emissions.



- States (17)
- Cities, Counties and Tribes (540)
- Businesses and Investors (1,914)
- Faith-Based and Cultural Organizations (253)
- Higher Education (343)

Figure ES-2: U.S. States, Cities, and Businesses Supporting the Paris Agreement Make Up a Large and Growing Footprint



Population (2018)
173 Million
 53% of all Americans



Gross Domestic Product (2018)
\$11.4 Trillion
 58% of total U.S. GDP



GHG Emissions (2018)
2.4 GT
 37% of U.S. GHG Emissions

Note: Coalitions represented in the map include: We Are Still In, U.S. Climate Alliance, and Climate Mayors. Information presented on the map was based on available data as of August 2018. The coalitions represented are dynamic and the data will change over time.

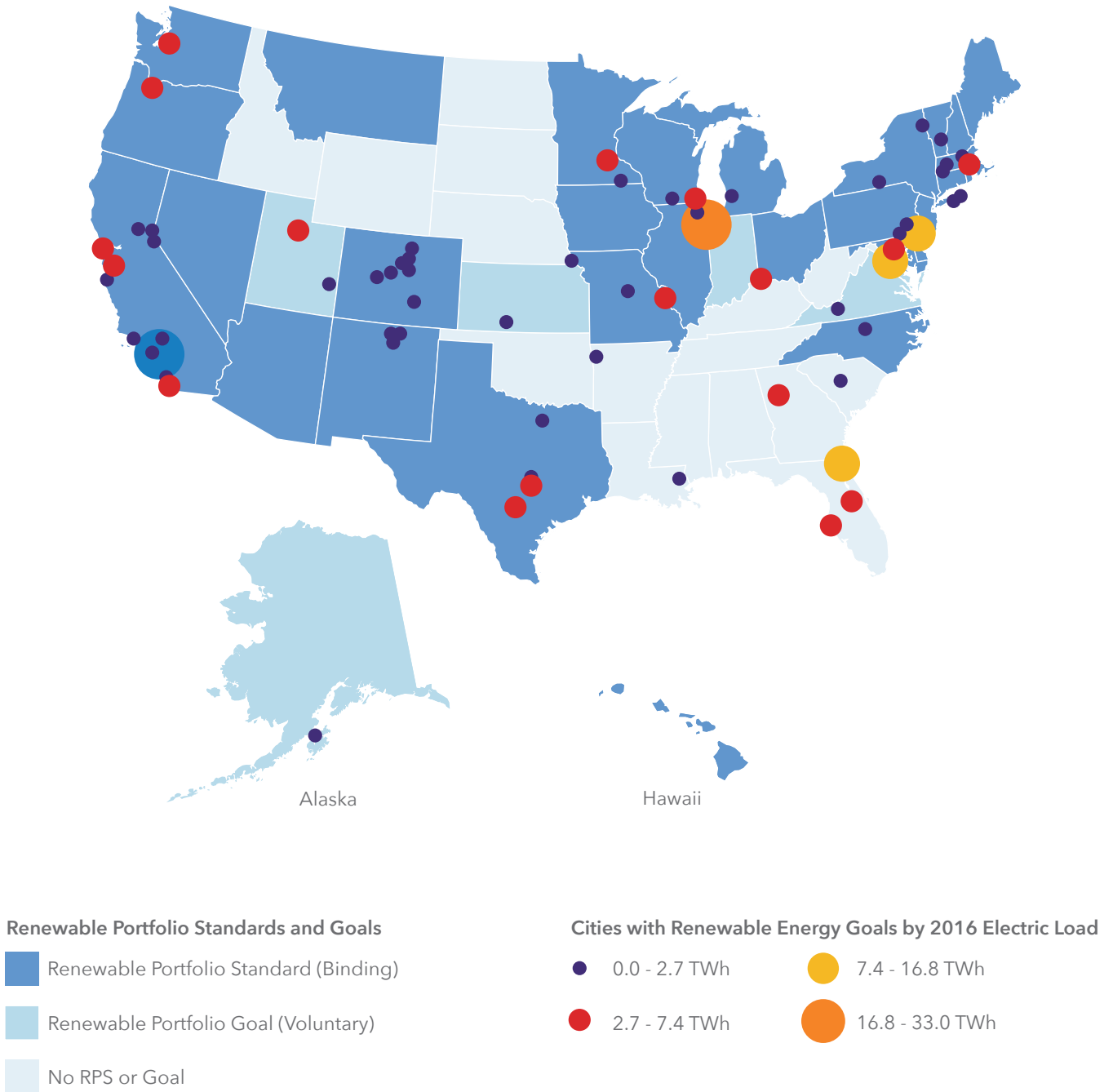
U.S. real economy actors are already cutting emissions and scaling clean energy, not just to address climate change but to help create economic opportunities and jobs, and to deliver immediate benefits to public health. This report provides an updated survey of sector-specific actions across all 50 states, the largest 285 cities (with populations above 100,000), and a wide number of businesses in order to assess the impact of climate actions. Among the key findings:

- States, cities, and counties with GHG emissions reduction targets already on the books could cut annual emissions by 500 million metric tons of carbon dioxide equivalent (Mt CO₂e) from business-as-usual levels by 2025 if they are fully implemented;
- State, city, and business clean energy procurement policies (e.g. renewable portfolio standards) should increase demand for non-hydroelectric renewable generation to 500 terawatt-hours (TWh) by 2025 - enough to power 56 million homes for a year (Figure ES-3);
- Energy efficiency policies enacted by states, cities, and utilities could result in annual energy savings of over 200 TWh per year by 2025;
- Implementation of zero-emissions vehicles (ZEVs) mandates would lead to having 4 million new ZEVs on the road by 2025;
- State and city commitments to sustainable transportation networks could cut annual vehicle miles traveled by 36 billion miles, compared with business-as-usual projections by 2025;
- State, city, and business initiatives to cut hydrofluorocarbon (HFC) emissions could reduce these emissions by 6 percent from 2015 levels by 2025; and
- Policies and corporate actions designed to address fugitive methane leaks from oil and gas operations could cut national emissions by 17 percent by 2025, relative to 2005 levels.



Photo by Robert Beadle

Figure ES-3: States and Cities From Across the U.S. Have Adopted Clean Energy Targets and Goals



Source: American Council for an Energy-Efficient Economy; Lawrence Berkeley National Laboratory; World Resources Institute

This kind of decentralized, bottom-up climate action is already delivering results. In 2017, U.S. energy-related carbon dioxide emissions fell to their lowest levels in 25 years. Despite the Trump Administration’s stated pro-coal policies, announced coal

plant retirements are occurring at a faster rate than ever before. Since June 1, 2017, the United States has added enough renewable energy to power more than 3 million homes for a year. States accounting for 35 percent of the U.S. economy are expected

to have a price on GHG pollution by the end of this year. And more than 70 U.S. companies have announced emissions reduction targets in line with the Paris Agreement.

A Bottom-Up Opportunity Agenda for the Real Economy

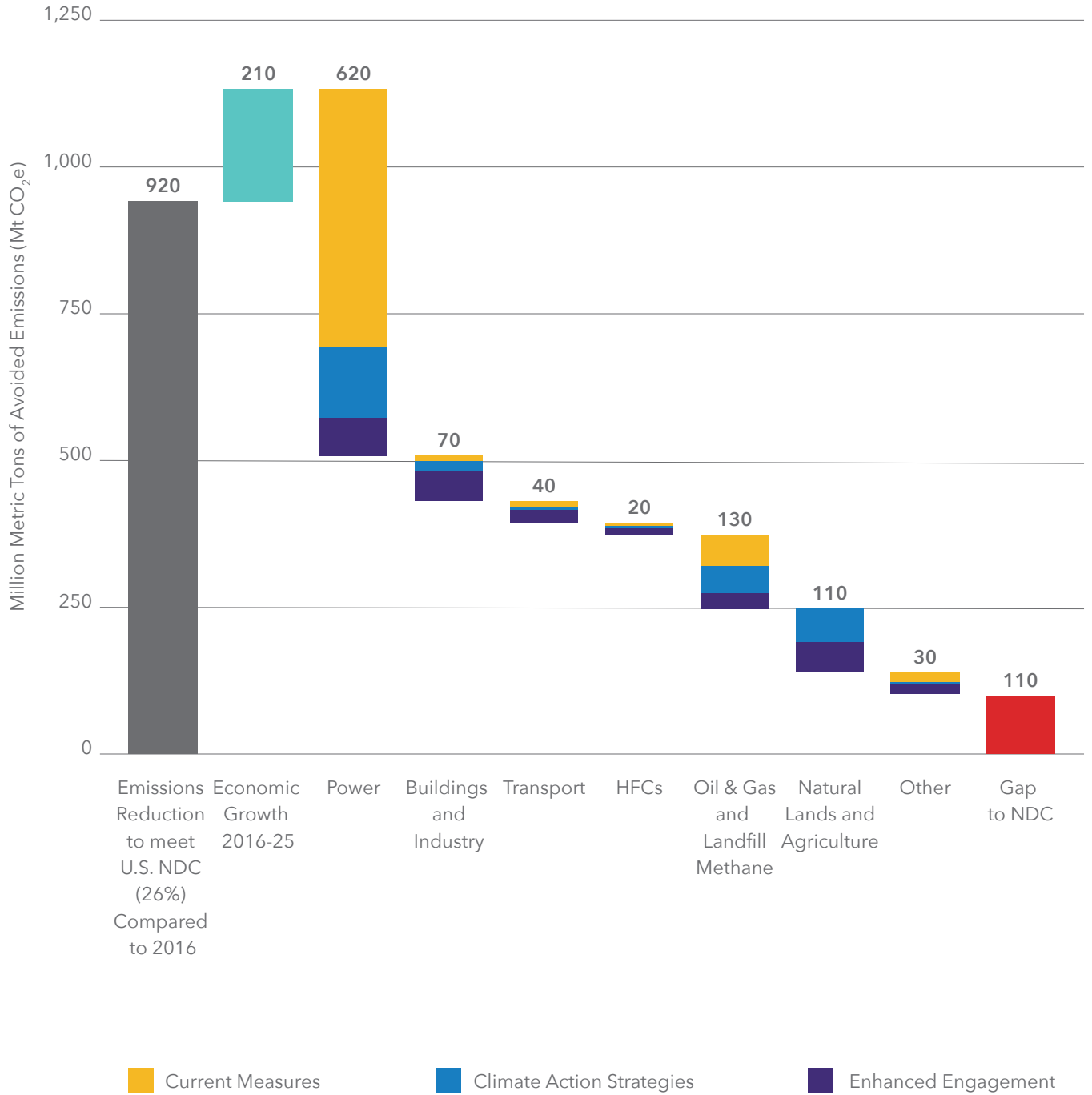
Looking forward, we project that current policies and existing pledges from real economy actors, along with market forces and technology change (our *Current Measures* scenario), will deliver economy-wide emissions reductions of 17 percent below 2005 levels by 2025, even accounting for economic and population growth—taking the nation two-thirds of the way to its Paris pledge. This report goes on to build out a detailed picture of potential future actions that could go well beyond decarbonization commitments currently on the books. Such actions include a broad suite of emissions reduction opportunities spanning most major economic sectors and greenhouse gases—including electricity, transportation, buildings, oil and gas methane, natural and working lands, and hydrofluorocarbons (see Figure ES-4). We present potential sectoral impacts as a range of real-world outcomes with the 10 *Climate Action Strategies* at the accessible end and the full *Enhanced Engagement* potential at the more ambitious end. The 10 strategies were selected because they each represent significant opportunities to achieve impact by 2025 through collaborative action that can most easily begin by 2020 (see details of the 10 *Climate Action Strategies* on page 25). Moving from the low to the high end potential requires both recruiting new cities, states, and businesses to undertake commitments defined in the *Climate Action Strategies*, and expanding the range of actions by already committed real economy actors using the levers of change described in this report.



Broader engagement of this real economy coalition, within realistic legal and political limits, has the potential to reduce U.S. emissions by more than 490 additional Mt CO₂e to 24 percent below 2005 levels by 2025 (with a range of uncertainty of 20 to 30





percent). This would be within striking distance of the Paris pledge, making the 26 percent threshold achievable shortly thereafter. Moreover, such action would drive an even faster rate of economy-wide decarbonization between 2025 and 2030.

Figure ES-4: Achieving Full Potential Entails Actions Across All Major Economic Sectors and GHG Gases (Mt CO₂e in 2025)






Source: America's Pledge modeling results

Table ES-1: Key Climate Action Levers and Associated Potential

Sector	2005 Emissions (MtCO ₂ e) ¹	Change in Sector Emissions in 2016 relative 2005 (MtCO ₂ e) ²	Percent Change in Sectoral Emissions 2016 Compared to 2005 ³	Scenario	Change in Sector Emissions in 2025 by Scenario(Mt CO ₂ e) ⁴	Total Feasible In-Sector Emissions Reductions 2005-25 as % of 2005 ⁵
 Power	2,439	-593	-24%	Current	-440	-50%
				Strategies	-120	
				Enhanced	-60	
				Total	-620	
 Buildings	1,696	-160	-9%	Current	-10	-14%
				Strategies	-10	
				Enhanced	-50	
				Total	-70	
 Transportation	1,904	-99	-5%	Current	-10	-7%
				Strategies	-10	
				Enhanced	-20	
				Total	-40	
 HFCs	103	+56	+54%	Current	-5	+35%
				Strategies	-5	
				Enhanced	-10	
				Total	-20	

For additional details on all sector assumptions and associated values for modeled emissions reductions in 2025, please see the Technical Appendix.

 <p>Oil & Gas and Landfill Methane⁷</p>	469	-20	-4%	Current	-50	-32%
				Strategies	-50	
				Enhanced	-30	
				Total	-130	
 <p>Natural & Working Lands and Agricultural Emissions⁸</p>	-211	+57	+26%	Current	0	-25%
				Strategies	-60	
				Enhanced	-50	
				Total	-110	
 <p>Total Net GHG Emissions⁹</p>	6,589	-795	-12%	Current	-530	-24%
				Strategies	-250	
				Enhanced	-240	
				Economic Growth ⁹	+210	
				Total	-810	

Notes:

1. Sector emissions based on 2016 U.S. EPA GHG inventory estimates. Some small sectors are omitted and therefore sum does not add to total net GHG emissions. As some sectors are estimated and calculated, values may differ slightly from EPA GHG inventory.
2. Change in sector emissions between 2005 and 2016 calculated based on 2016 U.S. EPA GHG inventory estimates.
3. Percent sectoral emissions reductions between 2005 and 2016 as % of 2005 sectoral emissions (based on 2016 U.S. EPA GHG inventory)
4. Total sector emissions reductions across three scenarios modeled by America's Pledge relative to a 2025 reference scenario.
5. Total feasible in-sector emissions reductions quantified as the total emissions reductions between 2005 and 2016 (based on U.S. EPA GHG inventory) and modeled emissions reduction between 2017 and 2025 (based on America's Pledge analysis), compared to the 2005 baseline.
6. Direct emissions from residential, commercial and industrial sectors. Does not include indirect emissions associated with electricity consumption which is included in power sector. Does not include industrial-related methane and HFCs included in other sectors.
7. GCAM assumes significant growth in methane emissions between 2005 and 2025. While total emissions grow, actions taken by real economy actors has the potential to cut emissions by over 30% against below 2005 levels. Agricultural methane included in Natural and Working Lands
8. Net change in emissions inclusive of land-sector sink and agricultural emissions. Both land-sector sink diminished in magnitude and agricultural emissions increased between 2005 and 2016, resulting in net increase in emissions of 26%.
9. Total GHG emission increases by 210 Mt CO₂e in the GCAM reference scenario from 2016 to 2025. Emission reductions are measured relative to this scenario.



The Ten Climate Action Strategies



#1: DOUBLE DOWN ON RENEWABLE ENERGY TARGETS

Ratcheting up renewable energy targets at a time of plummeting solar and wind costs and rapid evolution of business model solutions could achieve a major portion of the overall potential within the electricity sector. State, city, and business renewable energy commitments embodied in this strategy could readily lead to the deployment of an additional 130 TWh of total renewable energy beyond current policies and commitments by 2025—taking the U.S. to 990 TWh of renewable energy annually, up from 600 TWh in 2016.



#2: ACCELERATE THE RETIREMENT OF COAL POWER

States, cities, and businesses can accelerate the transition from fossil fuels to clean energy and shape the evolution of the electricity grid by insisting on the retirement of coal plants that are no longer competitive, fail to meet public health standards, or violate community clean energy goals. Working together, states, cities, businesses, advocates, and other stakeholders can speed this transition and ensure that 94 gigawatts (almost 30 percent) of the 2005 U.S. coal fleet has retired by 2025.



#3: ENCOURAGE RESIDENTIAL AND COMMERCIAL BUILDING EFFICIENCY RETROFITS

Cities can collaborate with the real estate industry, utilities, and state regulators to develop and implement ambitious building energy efficiency programs and policies. Cities can accelerate building retrofits by implementing a tested suite of approaches, including energy disclosure ordinances, requirements for building upgrades at key trigger points, and scaling retrofit incentive programs. Doubling the number of cities with energy efficiency targets and associated implementation mechanisms would result in an additional savings of 13 TWh per year by 2025 compared with what is modeled under our *Current Measures* scenario, enough electricity to power 1.5 million homes for a year.



#4: ELECTRIFY BUILDING ENERGY USE

States, cities, and utilities can collaborate to electrify building energy use. This would begin the transition away from the 500 million tons of carbon dioxide pollution that comes from burning fossil fuels inside U.S. homes and businesses each year. Targeting collaborative action by states, cities, utilities, and industry organizations in the Northeast and Midwest regions, where electrification retrofits are most cost-effective today, could deliver a 2025 impact of over 800 tera Btu of total savings (enough energy to power 25 million homes for a year) and a significant start in the transition away from fossil fuels.



#5: ACCELERATE ELECTRIC VEHICLE (EV) ADOPTION

States, cities, corporate fleet owners, utilities, vehicle manufacturers, transportation network companies, and other private-sector innovators have the power to substantially increase the rate of EV deployment, particularly when they work together. Collaborative action can lift uptake of EVs in the United States such that an estimated 8.4 million EVs will be on the road by 2025, more than doubling the 4 million EVs anticipated to be sold under current policies and conditions.



#6: PHASE DOWN SUPER-POLLUTING HYDROFLUOROCARBONS (HFCs)

Expanding the California Significant New Alternatives Policy (SNAP) program to include HFC aerosols, replicating this program in a broader subset of states that includes all 16 current members (and Puerto Rico) of the U.S. Climate Alliance, and broadening EPA's GreenChill program could reduce HFC emissions by an additional 5 percent beyond current policies by 2025.



#7: STOP METHANE LEAKS AT THE WELLHEAD

States, supported by industry and environmental groups, can put in place important regulations and/or permitting programs to manage methane emissions from oil and gas facilities. Setting standards and implementing innovative detection technologies in seven states considering new or updated actions to address methane emissions could reduce national emissions from this source as much as 23 percent below 2005 levels by 2025.



#8: REDUCE METHANE LEAKS IN CITIES

Cities, utilities, and commercial service providers can work with urban gas distribution utilities in key states to develop and implement plans to use advanced leak detection and data analytics to identify and abate the largest leaks from municipal natural gas distribution systems. Using innovative, data-driven approaches to identify and prioritize the repair of the top 20 percent of leaks in the eight states with the highest leakage, we estimate that coordinated action by states, cities, and businesses in a subset of U.S. states with leak-prone urban infrastructure could cut nationwide distribution system emissions by 30 percent by 2025.



#9: DEVELOP REGIONAL STRATEGIES FOR CARBON SEQUESTRATION ON NATURAL AND WORKING LANDS

States and businesses, nurtured with support from coalitions of philanthropies and NGOs, can spark regional initiatives for enhanced carbon sequestration on natural and working lands. Through collaborative action in U.S. Climate Alliance states and other states, real economy actors can reduce emissions by 60 Mt CO₂e by 2025.



#10: FORM STATE COALITIONS FOR CARBON PRICING

Real economy actors can establish economy-wide limits on carbon pollution in geographically diverse states, using emissions targets consistent with the near- and long-term reductions necessary to achieve the goals of the Paris Agreement. Today eight states have mandatory economy-wide GHG targets, and another eight states and the District of Columbia have aspirational GHG targets (e.g., set by executive order). If these states put into place a limit on carbon pollution consistent with U.S. targets under the Paris Agreement and implement appropriate sector-specific programs and policies, the United States could reduce energy-related CO₂ emissions economy-wide by more than 350 Mt CO₂e by 2025. Note that many of the sector-specific emission reductions identified in the first nine strategies are vital components in the ability of these states to meet their economy-wide targets.

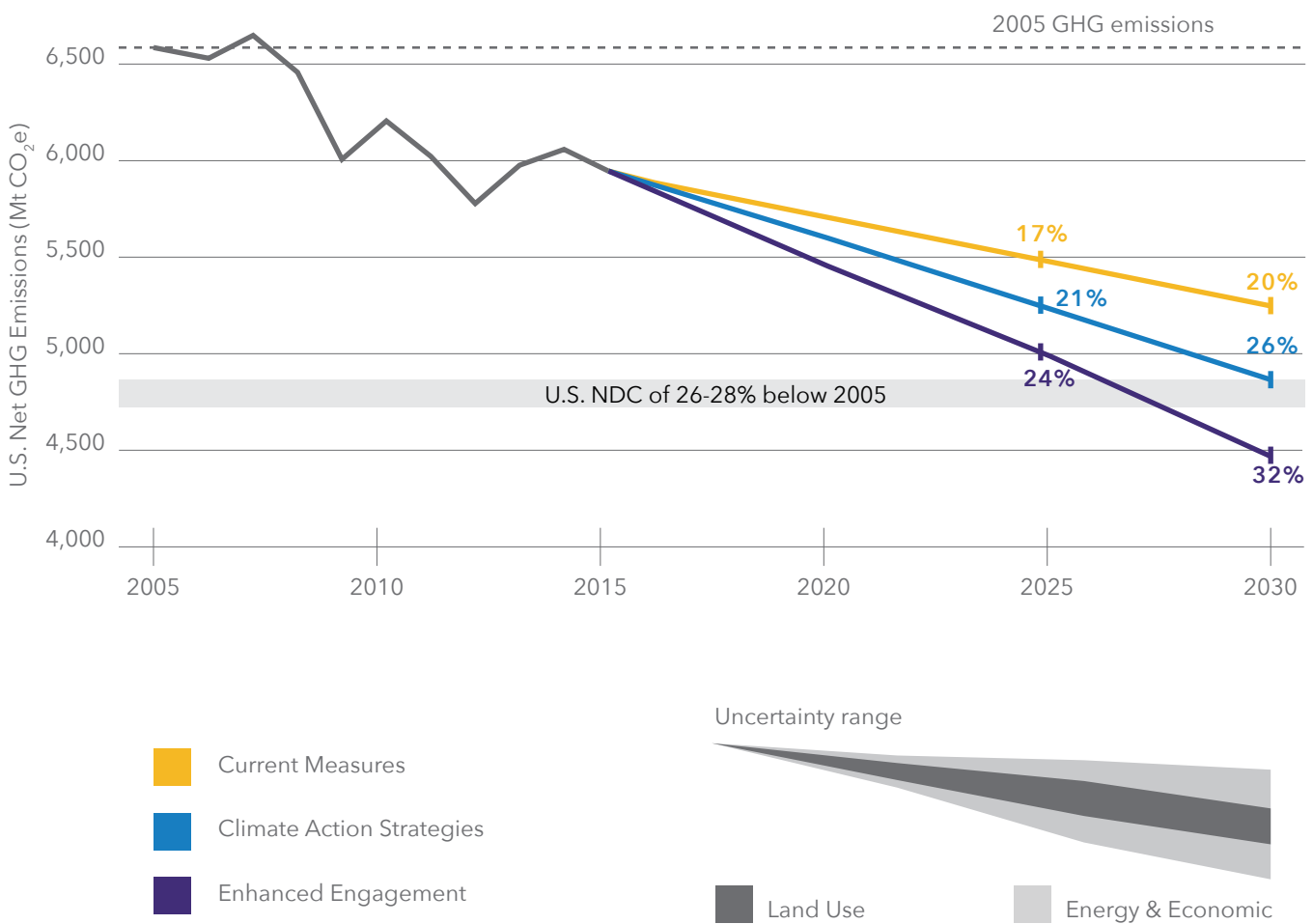
Pathways to America's Low-Carbon Future

Figure ES-5 shows the modeled evolution of U.S. emissions between 2005 and 2030, illustrating both the potential of real economy impact by 2025, and the even more significant

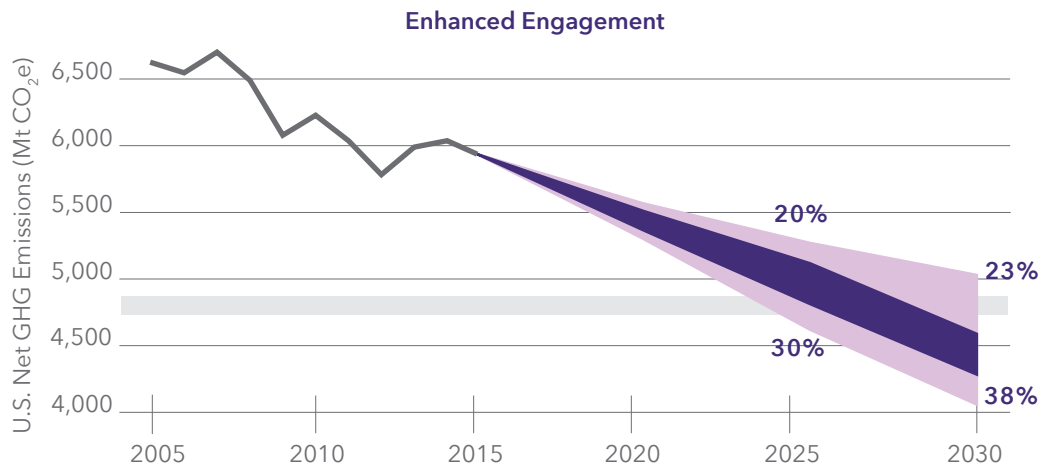
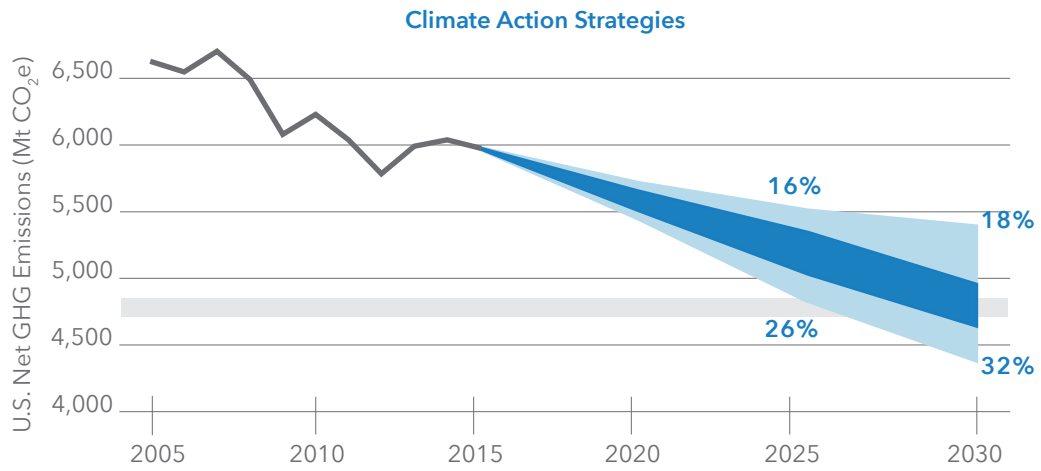
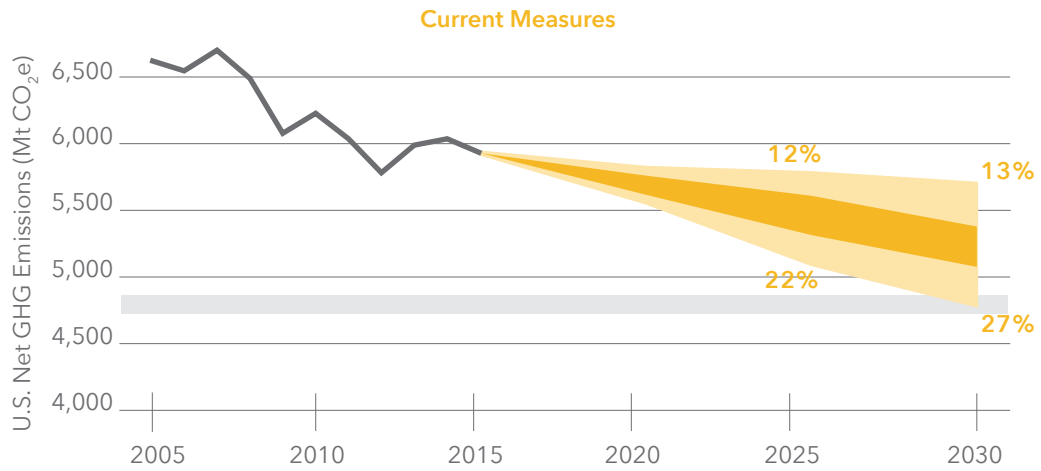
emissions reductions such action will trigger in the critical period between 2025 and 2030. This graph presents a central estimate as well as a range of potential outcomes flowing from

uncertainty in key variables, specifically economic growth, energy prices, and land use changes.

Figure ES-5: Progress Toward Near-and Long-term Climate Goals Varies Across the Three Scenarios (Mt CO₂e)



Source: America's Pledge modeling results



This result is compatible with the emissions projections presented by the Obama Administration to the global community in its 2016 Biennial Report to the UNFCCC. Those projections demonstrate that the U.S. target for 2025 is a stretch goal, but is achievable with concerted effort. However, whereas the Obama Administration's 2025 projections assumed continued, and indeed enhanced, federal engagement in the period from 2017 through 2025, our analysis demonstrates that during the current

hiatus in federal leadership, real economy actors are substantially maintaining, and can fully maintain, the momentum of the nation's decarbonization trajectory for 2025 and beyond.

The annual rate of decarbonization in the *Enhanced Engagement* scenario is 1.6 percent between 2016 and 2025, accelerating to 2.1 percent for 2025-30. This is substantially higher than the actual 1.1 percent rate for the period 2005-16. The post-2025 trajectory approaches the rate of decarbonization

needed to hit 80 percent below 2005 levels by 2050 (2.3 percent).² The acceleration we model after 2025 is attributed to the fact that several sectors of the economy—transportation and buildings, for example—have long lead times for capital turnover. Policies put in place between now and 2025 will deliver the bulk of their emissions reduction benefits only after 2025, and will continue to have an effect after 2030 as buildings, fleets, industrial processes, and other infrastructure are modernized.

Fulfilling America's Pledge

This analysis demonstrates for the first time that despite federal policy inaction, the United States can get on track to approach its Paris Agreement pledge for 2025 through the concerted effort of real economy actors. Moreover, implementing such actions today can support accelerated reductions beyond 2025, driving even steeper overall U.S. emissions reductions between 2025 and 2030. Federal reengagement undertaken as rapidly as possible will be essential in sustaining and accelerating the needed breadth and depth of emissions reductions across all sectors of the U.S. economy, both to close any remaining gap in 2025 and for long-term decarbonization.

The insights contained in this report about bottom-up climate action potential in the United States may also hold important lessons for the broader international community as policymakers and leaders across society consider how to accelerate and deepen implementation of the Paris Agreement. While national governments and policies were in the spotlight during the run-up to the Paris Agreement in 2015, the focus of international negotiations has now shifted to a more detailed examination of what it will take to formulate and implement increasingly ambitious national climate goals. The case of the United States demonstrates that real economy actors can lead ambitious and sustained

commitments to climate action from all levels of government and across the economy.

The results of this analysis are therefore a call to action for the global community as a whole. Achieving the goals of the Paris Agreement has always been recognized as demanding the full participation of and deep collaboration between national governments and their broader societies. This moment presents the opportunity to make that collaboration a reality.

Endnotes

- ¹ United Nations, "United Nations Framework Convention on Climate Change," Article 2, 1992, <https://unfccc.int/resource/docs/convkp/conveng.pdf>.
- ² Federico Neiburg and Jane I. Guyer, "The real in the real economy," *HAU: Journal of Ethnographic Theory* 7, no. 3 (Winter 2017): 261-279. <https://doi.org/10.14318/hau7.3.015>.
- ³ America's Pledge analysis. Simple rate of reduction based on U.S. emissions in 2016 compared to 2005 and an 80 percent reduction by 2050. Emissions data based on the U.S. Environmental Protection Agency, "Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016," April 2018, https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf.

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**Collaboration and deep engagement
by cities, states, and businesses – within
realistic legal and political constraints – can
drive down overall U.S. greenhouse emissions
to within range of America's pledge for
2025 under the Paris Agreement.**