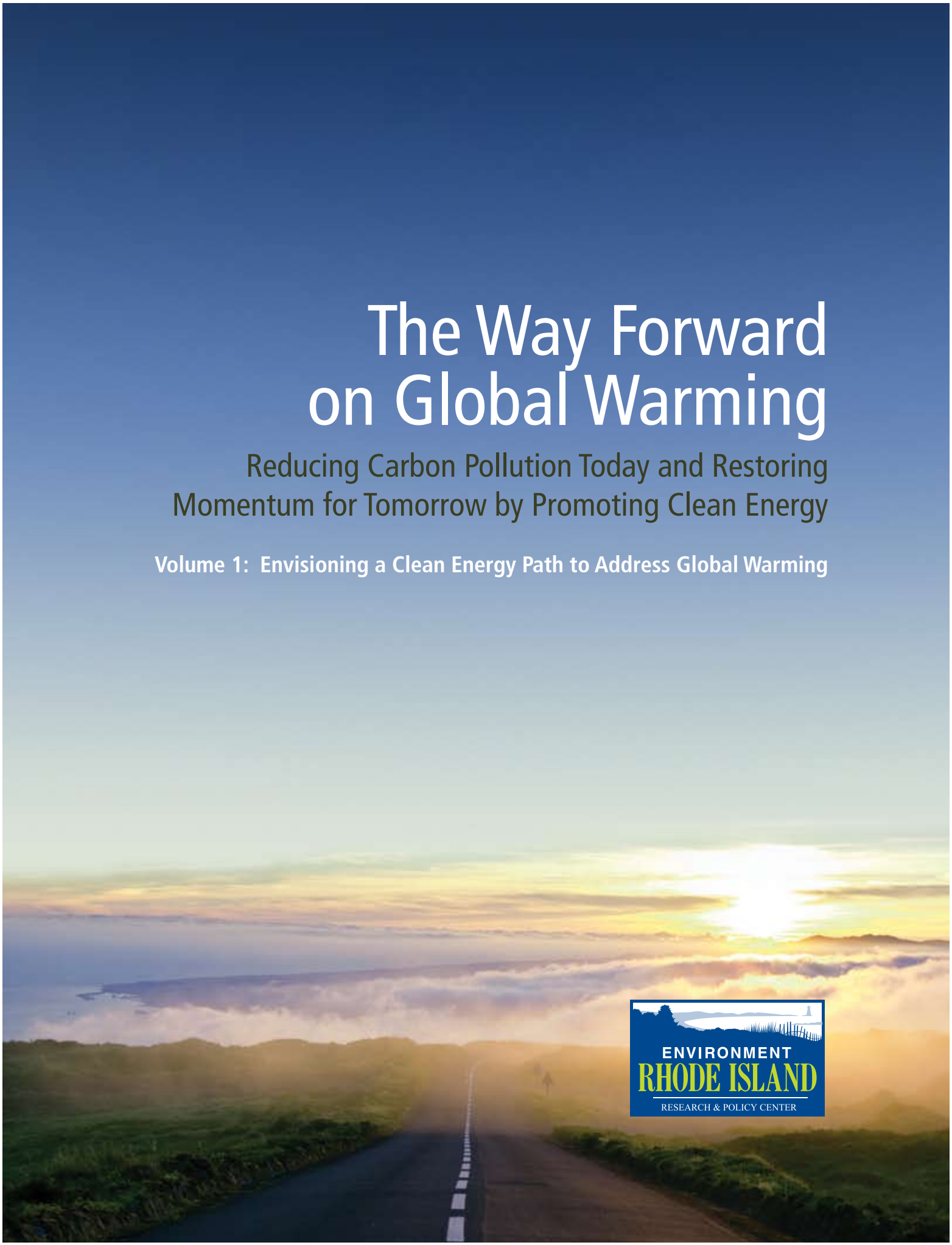

The Way Forward on Global Warming

Reducing Carbon Pollution Today and Restoring Momentum for Tomorrow by Promoting Clean Energy

Volume 1: Envisioning a Clean Energy Path to Address Global Warming

ENVIRONMENT RHODE ISLAND
RESEARCH & POLICY CENTER

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Summer 2011

Acknowledgments

Environment Rhode Island Research & Policy Center thanks the following individuals who provided information, perspective or review for this document: David Hawkins, Dale Bryk, David Goldstein and Nathanael Greene of the Natural Resources Defense Council; Katrina Pielli of the U.S. Department of Energy; Peter Iwanowicz; Christina Simeone of the Alliance for Climate Protection; Steven Nadel of the American Council for an Energy Efficient Economy; Alan Nogee and Jim Kliesch of the Union of Concerned Scientists; Kathryn Zyla of the Georgetown Climate Center; and Tom Peterson of the Center for Climate Strategies. The views expressed in this report are those of the authors and not necessarily the views of those who provided information or review.

The authors wish to thank Margie Alt, executive director of Environment America Research & Policy Center, for her vision in conceptualizing this project, as well as Nathan Willcox, Dan Gatti and Sean Garren for their contributions. Susan Rakov, Benjamin Davis and Jordan Schneider of Frontier Group and Rich Hannigan of Public Interest GRFX provided valuable editorial support.

The authors bear responsibility for any factual errors. The recommendations are those of Environment Rhode Island Research & Policy Center.

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Cover photo: Mlenny Photography, istockphoto.com
Design and layout: Harriet Eckstein Graphic Design

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Executive Summary

Humanity is running out of time to stop the most dangerous impacts of global warming. Signs of global warming are appearing around the world—including in the United States—and the latest science suggests that future impacts are likely to occur sooner and be more severe than previously thought.

The failure of the international community to take strong action to limit global warming pollution and the death of comprehensive energy and climate legislation in the U.S. Congress in 2010 have been major setbacks in the battle to prevent the worst impacts of global warming. But there is still hope—there are plenty of opportunities to reduce emissions of global warming pollution in the United States, while restoring momentum in the fight against global warming.

By adopting a suite of clean energy policies at the local, state and federal levels, the United States could curb emissions of carbon dioxide from energy use by as much as 20 percent by 2020 and 34 percent by 2030 (compared with 2005 levels). These savings represent a significant down payment on the emission reductions America must achieve to prevent the worst impacts of global warming, and put the nation on a path to achieve further emission reductions in the years ahead.

Over the past decade, clean energy policies at the local, state and federal levels have yielded large reductions in global warming pollution and put the nation on a path to a cleaner energy future.

Table ES-1. Estimated Energy-Related Carbon Dioxide Emission Reductions Under the "Way Forward" Policy Scenario

Emission reductions	2015	2020	2025	2030
vs. business as usual	10%	18%	27%	36%
vs. 2008 emissions	11%	17%	25%	32%
estimated reductions vs. 2005 emissions	13%	20%	27%	34%

- Thanks in large part to clean energy policies, America now produces five times as much wind power and eight times as much solar power as we did just seven years ago. Light-duty cars and trucks sold in 2009 were the most fuel efficient and least polluting in history, while the amount of new energy savings delivered by utility energy efficiency programs has nearly tripled since 2004.

- These efforts have helped change the trajectory of carbon dioxide emissions in the United States—generating emission reductions well beyond those triggered by the recent economic downturn. In 2004, the U.S. Department of Energy forecast that, by 2009, America would be emitting 6,453 million metric tons of carbon dioxide from energy use. In actuality, the United States emitted only 5,405 metric tons, 16 percent less than projected.

- State and federal clean energy policies will yield even more emission reductions in the years to come. By 2020, those policies are projected to cut carbon dioxide emissions by 535.9 million metric tons—an amount equivalent to 7 percent of U.S. global warming pollution in 2007.

America can build on the success of current clean energy policies in curbing global warming pollution. If done right, a focused strategy to adopt clean energy policies can also restore political momentum in the fight against global warming. Such a strategy should:

- Seek out opportunities to cut emissions wherever they may be found—including at the local, state and federal levels—with a special focus on pollution-reduction strategies that deliver tangible benefits to the environment, the economy and public health.

- Focus on efforts that unite the environmental community and bring in new partners.

- Unite disparate local and state campaigns into a cohesive national effort.

- Erode the power of the fossil fuel industry over public policy.

- Engage the public with efforts to reduce global warming pollution at a variety of levels.

- Use clean energy campaigns to educate the public about global warming.

- Push the envelope with bold, innovative policy ideas wherever possible.

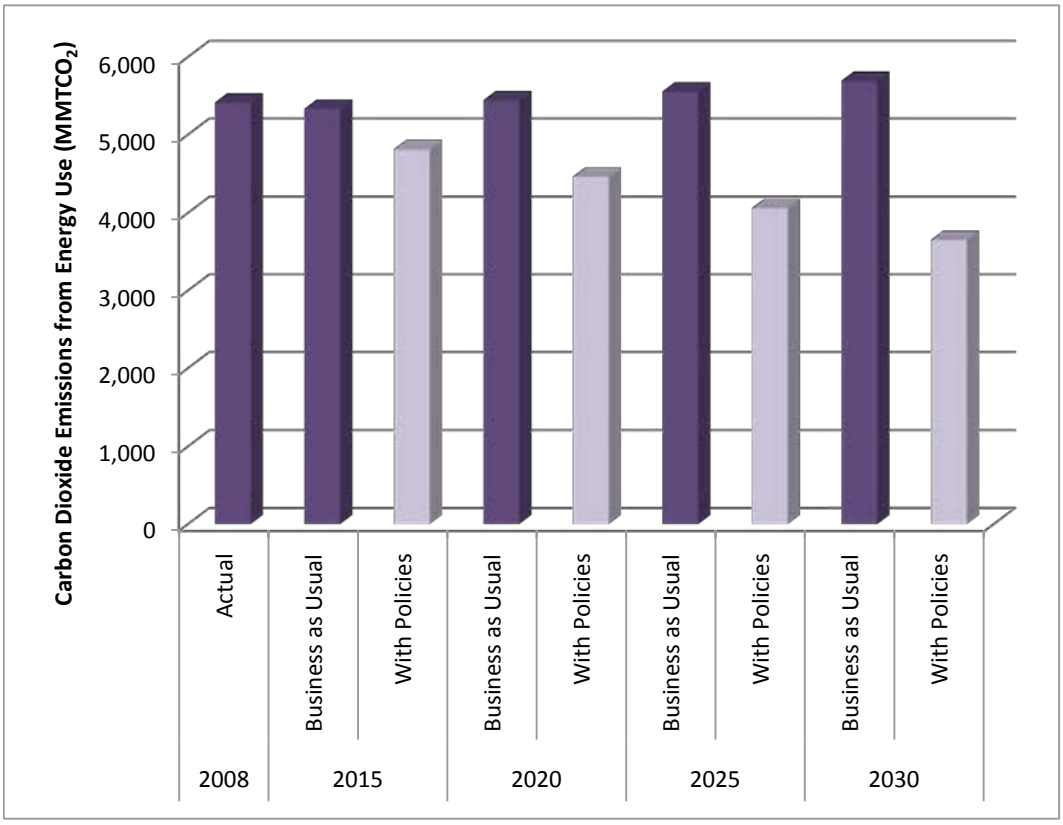
There are many opportunities for the United States to reduce global warming pollution at the local, state and federal level through clean energy policies. State and local action is not a "second-best" solution to the climate crisis—indeed, state and local efforts have often set the stage for the adoption of ambitious policies at the federal level.

Through the adoption of 30 clean energy policies or measures nationwide (see "The Way Forward," page 4), the United States could reduce its emissions of carbon dioxide from energy use by as much as 20 percent below 2005 levels by 2020 and 34 percent below 2005 levels by 2030, while paving the way for further emission reductions in the years to come.

Among those policies are many that simultaneously address America's most pressing challenges, including:

- **Fossil fuel dependence** – Stronger fuel economy standards for cars and

Figure ES-1. Potential Energy-Related Carbon Dioxide Emission Reductions Under the "Way Forward" Policy Scenario (see page 4 for a list of included policy scenarios)



trucks, tighter building energy codes for new residential and commercial buildings, improvements in the energy efficiency of homes and commercial buildings, and other strategies can reduce America's depenence on fossil fuels—protecting the environment, stabilizing our economy, and enhancing our national security.

- **Job creation and economic prosperity** – Renewable electricity standards, energy efficiency resource standards, and policies to encourage solar power can help to create vibrant green industries that employ American workers and give the United States a leg up in the global clean energy economy.
- **Public health and the environment** – Efforts to shift away from burning fossil fuels to meet our energy and transportation needs will reduce air and water pollution from the extraction of fossil fuels, protecting the health of millions of Americans while safeguarding our environment.

Local, state and federal governments should consider adoption of these policies to reduce global warming pollution and fossil fuel dependence. At the same time, public officials at all levels should resist pressure to roll back existing laws that protect our environment, move America toward a clean energy future, and set limits on global warming pollution.

The Way Forward:
A Clean Energy Strategy to Address Global Warming

- Retrofit three-quarters of America's homes and businesses for improved energy efficiency.
- Implement strong building energy codes to dramatically reduce fossil fuel consumption in new homes and businesses.
- Set strong energy efficiency standards for household appliances and commercial equipment.
- Promote the use of energy-efficient boilers and process heat systems in industrial facilities.
- Encourage the use of energy-saving combined heat-and-power systems in industry.
- Install more than 200 gigawatts of solar panels and other forms of distributed renewable energy at residential, commercial and industrial buildings over the next two decades.
- Adopt strong energy efficiency resource standards that require utilities to deliver energy efficiency improvements in homes, business and industry.
- Require new light-duty vehicles to achieve improved fuel economy consistent with a 62 miles per gallon standard by 2025.
- Facilitate the deployment of millions of plug-in vehicles that operate partly or solely on electricity.
- Require the sale of energy-efficient replacement tires.
- Ensure that the majority of new residential and commercial development in metropolitan areas takes place in compact, walkable communities with access to a range of transportation options.
- Transition to pay-as-you-drive automobile insurance, which reduces vehicle travel and accident risk.

The Way Forward (cont'd)

- Adopt clean fuel standards that require a reduction in the carbon intensity of transportation fuels.
- Expand public transportation service to double ridership by 2030, encourage further ridership increases through better transit service, and reduce per-mile global warming pollution from transit vehicles.
- Encourage bicycle travel through efforts to improve the safety and convenience of bicycling.
- Build high-speed rail lines in 11 high-priority corridors by 2030.
- Adopt strong fuel economy standards for heavy-duty trucks.
- Encourage energy efficiency improvements in airplanes and trains.
- Bar the construction of new conventional coal-fired power plants—either through moratoria or the adoption of carbon dioxide performance standards for new power plants.
- Adopt renewable electricity standards that call for 25 percent of America's electricity to come from clean, renewable sources by 2025 and 33 percent by 2030.
- Enforce proposed federal standards on emissions of smog-forming pollutants, soot and mercury from coal-fired power plants.
- Adopt strong federal standards for global warming pollution from power plants and industrial facilities.
- Strengthen the Regional Greenhouse Gas Initiative, which limits global warming pollution from power plants in 10 northeastern states.
- Carry out President Obama's Executive Order 13514, which requires large reductions in global warming pollution from federal agencies.
- Enforce existing state limits on global warming pollution.

Introduction

Traveler, there is no path.
The path is made by walking.
By walking you make a path.
And turning, you look back.
At a way you will never tread again.

– Antonio Machado, Spanish poet[1]

Decades after scientists issued the first urgent warnings that human activities threatened irreversible changes to the Earth's climate, there remains no clear path to preventing the worst impacts of global warming.

The leaders of the United States and the world—along with the political institutions we have created—have thus far proven unwilling to take the actions needed to address the threat, despite clear evidence of the urgent need for action and an outpouring of public concern spanning the globe.

At the same time, global warming pollution has continued to increase, while continued scientific study has revealed that global warming will result in more severe impacts to ecosystems and human civilization—and will do so sooner and at lower levels of emissions—than previously believed.

The situation is clear. The scientific imperative to reduce global warming emissions dramatically and immediately is unyielding. So, too, it seems, is the political resistance to a comprehensive solution to the climate crisis.

There may be no clear path to preventing the worst impacts of global warming, but we know the direction in which we need to head—toward an economy that operates largely on clean sources of energy and away from old habits and practices that waste fossil fuels.

We know that there are many steps that can move us toward that goal—thousands of potential actions that can be taken through public policy (and countless more through individual and collective action) that can move America and the world toward a clean energy future with diminished impact on the climate.

And we know that there are millions of people in America and around the world who are hungry for a new energy system that protects our environment, reduces our crippling dependence on fossil fuels,

and provides a sustainable platform for future economic prosperity.

We also have the benefit of experience following a decade of unprecedented public policy progress—largely at the state level—toward a cleaner energy future. We can now turn and look back at the results of those efforts: a dramatic increase in renewable energy production, significant increases in the energy efficiency of our buildings, appliances and vehicles, and the unleashing of creative energy and innovation in the pursuit of new clean energy technologies.

There may be no clear roadmap to preventing the worst impacts of global warming. But there is a way forward.

In this report, we propose a strategy for rebuilding momentum for solutions to the climate crisis that begins with the adoption of strong—and often broadly popular—clean energy policies at the local, state and federal levels. Winning these policies can make an immediate dent in global warming pollution, and lay the groundwork for the emergence of a clean energy economy in the years ahead, while the act of campaigning for them can help build the strength of the broader movement to address global warming.

But the work cannot stop there, for there is no ultimate solution to global warming that does not involve *comprehensive* action—specifically, the adoption of enforceable limits on global warming pollution and a price on carbon. Today's work for clean energy must not only be an end in and of itself, but it must also be used as a *means* of changing the political calculus to make bolder action on global warming possible in the years to come.

This report comes in two volumes. In this document—Volume 1—we survey the scientific and political landscape, describe how a clean energy strategy can curb global warming pollution and change the political landscape, and provide an estimate of the emission reductions that could result from the adoption of a package of 30 specific clean energy policies, measures and initiatives, many of which can be implemented at the local or state level, not just in Washington, D.C.

In Volume 2 (available at www.environmentamerica.org), we provide an in-depth review of the 30 policy strategies that describes the changes they will bring about in America's energy system and the impact they will have on global warming pollution over the next two decades.

The Challenge: Preventing Dangerous Global Warming

Global warming poses a dual challenge to the United States and the world. The first and overriding challenge is reducing emissions of global warming pollutants quickly enough to prevent catastrophic changes to the global climate. The second challenge is a challenge to our political institutions: How can the nations of the world—including the United States—build the political will to address global warming?

A successful strategy to address global warming must address both challenges.

The Climate Challenge

Humanity is running out of time to prevent the worst impacts of global warming.

In 2007, the Intergovernmental Panel on Climate Change (IPCC)—the world's foremost scientific authority on the subject—concluded that "warming of the climate system is unequivocal" and that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic [greenhouse gas] concentrations."[2]

Since then, the evidence that humans are warming the globe has only gotten stronger. In the words of a recent report published by the U.S. National Academy of Sciences: "Some scientific conclusions or theories have been so thoroughly examined and tested, and supported by so many independent observations and results, that their *likelihood of subsequently being found to be wrong is vanishingly small*. … This is the case for the conclusion that the Earth system is warming and that much of this warming is very likely due to human activities.[3] (emphasis added)

Clear signs of global warming have already begun to emerge:

- Global average sea and air temperatures in 2010 were tied for the hottest on record, according to the National Oceanic and Atmospheric Administration (NOAA).[4] The decade of 2001 to 2010 was the hottest 10-year period on record, with average temperatures estimated to be 0.83°F hotter than the 1961-1990 normal.[5] 2010 was also the wettest

year on record based on global average precipitation.[6]

- Scientists have tracked the progression of global warming across a range of indicators, including increases in sea surface temperatures, increased humidity, rising sea level, and shrinking of Arctic sea ice, glaciers, and snow cover in the Northern Hemisphere.[7]

- The extent of Arctic sea ice in September 2010 was the third-lowest on record, trailing only 2007 and 2008.[8] Ice loss has accelerated in Greenland, with 2010 posting the largest area of glacier ice loss ever recorded. [9]

Several events in 2010 provided a foreshadowing of the types of disruption global warming may cause in the years ahead. Rising sea temperatures led to widespread damage to the world's coral reefs.[10] The Amazon experienced its third major drought in the last 12 years,[11] a devastating and unprecedented heat wave saw temperatures in Moscow exceed 100˚F for the first time in recorded history,[12] and massive floods in Pakistan affected millions of people, caused by the worst monsoon rains in 80 years.[13] The United States experienced the "Snowmageddon" series of moisture-driven, record-breaking snowstorms in the Mid-Atlantic states, a "500-year" flood in southern New England in March, and a "1,000-year" flood in Tennessee in May.[14]

Meanwhile, science now suggests that the impacts of global warming are likely to be more severe—and to inflict greater damage at smaller temperature changes—

The impacts of global warming are beginning to be felt in the United States and around the world. The United States has experienced an increase in extreme precipitation events, triggering massive floods such as this flood in Davenport, Iowa, in 2008. Photo: Kurt Ockelmann

than previously thought. Recent research, for example, suggests that sea-level rise resulting from global warming will be greater than estimated by the IPCC in 2007, with estimated rise of 30 to 75 inches (75 to 190 centimeters) between 1990 and 2100.[15]

A study by Stanford University researchers found that, even under a scenario under which the increase in global average temperatures is limited to 2°C above pre-industrial levels (the target set by world leaders at the Copenhagen summit in 2009 to prevent "dangerous climate change"), the United States will still be subject to increasingly intense and frequent heat waves in the coming decades.[16]

In addition, new research suggests that the IPCC's projections of global warming—rather than being "alarmist," as some opponents of action on global warming claim—have been overly optimistic. Indeed, some scientists suggest that global warming resulting from emissions already produced may generate dangerous climate change by the end of this century and that the global climate is less resilient than previously believed.[17]

What the World Must Do

The most important priority for the world is to reduce emissions of global warming pollutants quickly and dramatically. For the world, emissions will need to peak roughly five years from now and decline by more than half by 2050 to have a chance at preventing the worst impacts of climate change.[18] For the United States and other developed countries, emission reductions must occur more quickly and more steeply, with reductions of at least 25 to 40 percent below 1990 levels by 2020 and 80 to 95 percent by 2050.[19]

Achieving the large emission reductions needed to prevent the worst impacts of global warming will be a challenge, requiring broad-scale transformations in the way we produce and use energy. While the United States and the world should take all actions necessary to achieve these emission reduction targets, *any* emission reductions—regardless of whether they are sufficient to achieve a particular numerical target—are likely to reduce the impact of global warming now and for generations to come.

The Political Challenge

Preventing the worst impacts of global warming would be difficult enough even with a society and political system fully dedicated to the task. Yet, as the slow progress of international negotiations on climate and demise of comprehensive energy and climate legislation in the 111th Congress demonstrate, there are significant political roadblocks that are keeping America and the world from rising to the challenge posed by global warming.

Those roadblocks include, but are not limited to:

- **The vulnerability of comprehensive agreements or policies to address global warming to the effective "veto" of nations, regions or states that benefit economically from the fossil fuel status quo.** Two nations—the United States and China—produced 43 percent of the world's energy-related carbon dioxide emissions in 2009.[20] As a result, no international agreement that fails to include both of those countries can expect to achieve the emission reductions needed to prevent the worst impacts of global warming. Similarly, in the United States Congress, large coal-producing and coal-consuming states hold sufficient sway to influence the outcome of any comprehensive energy or global warming bill.

- **The entrenched economic and political power of incumbent fossil fuel interests**. In the 2010 U.S. federal election campaigns, for example, oil and gas interests spent more than $27 million on campaign contributions.[21] That is in addition to the more than $320 million spent on lobbying by oil and gas interests during 2009 and 2010 as Congress considered comprehensive energy and climate legislation.[22] It is also in addition to the countless millions more spent by fossil fuel industries to endow think tanks and bankroll global warming "skeptics" in an effort to create uncertainty about the broad scientific consensus on the issue.[23]

- **The polarization of political discourse in the United States**—especially at the national level—which politicizes even basic scientific facts and prevents the emergence of coalitions that span ideological fault lines in pursuit of policies that benefit the public good. In 1998, for example, equal percentages of Democrats and Republicans believed that the effects of global warming had already begun to appear. By 2008, however, 76 percent of Democrats believed that the effects of global warming had begun, compared to only 41 percent of Republicans.[24]

The scientific challenge posed by global warming—the desperate need to begin reducing emissions as quickly and dramatically as possible—cannot by addressed without simultaneously acknowledging, and working either to surmount or to circumvent, the political obstacles to change. A strategy that purports to address the scientific challenge of global warming but does not simultaneously address the political challenges is not a strategy—it is a vain hope. And a strategy that seeks to work within existing political constructs that does not acknowledge the reality of the science and the scale of the actions required to protect the planet is also not a strategy—it is a delusion.

What Will it Take to Succeed?

The tension between the limits of the climate system and the limits of the political system is the great tension at the heart of the environmental movement at the dawn of the 21st century.

Some interpret the current—and very real—political limitations as an inevitable and unyielding constraint on the scope of climate action. The imperative to do something—*anything*—to forestall planetary catastrophe opens the door to "compromises" that would be unacceptable in any other context: giveaways to incumbent fossil fuel interests, or the embrace of technologies or fuels with significant environmental and public health impacts. To some, the political limitations on climate action are so strict that they believe little can be done in the near term except to place bets on the hope that a technological "breakthrough" will come along to save the day.

On the other hand, there are some for whom the scientific imperative of achieving massive emission reductions in a very short period of time trumps even the acknowledgment of real political limitations. A climate policy that fails to deliver *all* of what is needed to put the United States and the world on track for dramatic reductions in emissions is deemed not worth taking seriously, even if winning such a policy would defy all notions of political gravity, and compromise is seen as an unacceptable sell-out of principle.

The tragedy of this situation is that both camps are correct—we face both a stern and unyielding challenge from the climate system and major institutional and political barriers to change.

But the situation is not hopeless.

The way forward out of America's current dilemma lies with building support for a policy agenda that can *address both challenges at once*—producing real, meaningful reductions in global warming pollution, while at the same time expanding the realm of what is possible within the political system.

As with all other strategies to address global warming, there is no guarantee of success. But there is reason to believe, based on the recent experience with clean energy policies in the United States, that such a strategy can work. And there are plenty of opportunities to put it to the test.

What might such a strategy look like? To follow are seven principles that could guide it.

1. Seek Out Opportunities to Reduce Emissions Wherever They Can Be Found

Over the past several years, vast resources have been devoted to winning comprehensive energy and climate legislation at the federal level, and for good reason—comprehensive federal legislation will be necessary to produce the emission reductions needed to put America and the world on track to prevent the worst impacts of global warming.

There are, however, countless additional opportunities to reduce emissions using existing federal statutes as well as the opportunities presented by action at state and local levels of government.

In this report, we estimate the potential impacts of 30 public policies, measures and initiatives to reduce global warming pollution, most of which can be adopted at the state level. With 50 states, that makes more than 1,000 potential opportunities to reduce global warming pollution.

State and local action on global warming is not a "second-best" solution to the climate crisis. Indeed, time and again, ambitious public policy action at the local or state level has created a *precedent* for strong action at the federal level. Moreover, as described below, state and local campaigns can involve and engage citizens in ways that federal legislative campaigns cannot. Under the right conditions, these policies can not only deliver concrete emission reductions, but they can also spur changes in infrastructure and transform economic conditions in ways that will make the goals of an eventual national program easier to meet.

2. Unite the Environmental Community and Bring in New Partners

A successful strategy to address global warming will emphasize policies with the greatest potential to unite the environmental community and build coalitions with people who may not describe themselves as environmentalists and whose primary concern may not be global warming.

In practice, that means focusing on campaigns for *clean energy* and the development of sustainable communities and economies for the long run. There is little room in this strategy for policies that cause or acquiesce to severe environmental harm—whether it is in the form of mountaintop removal coal mining, poorly regulated hydraulic fracturing for natural gas, or dangerous nuclear power, the waste from which remains hazardous for thousands of years. Renewable energy, energy efficiency and sustainable communities are visions that have the potential to unite, rather than divide, the environmental base. And a united base is critical for the even-more-difficult efforts ahead as the nation makes deeper reductions in global warming pollution.

Many of these same strategies have the potential to bring new constituencies to the fight against global warming, from farmers to "cleantech" entrepreneurs to labor interests to the low-income community—even to thoughtful conservatives.

3. Make One Campaign Out of Many

A strategy that relies on dozens of campaigns at the local, state and federal levels could easily devolve into incoherence—with each separate campaign seen as having little connection to the overarching goal of addressing global warming pollution. A successful

strategy will require coordination among groups working on clean energy policies, as well as "scorekeeping" to keep track of how local and state-level victories are likely to contribute to the achievement of America's emission reduction goals.

Even campaigns that win significant reductions in global warming emissions in a particular state will represent just a drop in the bucket of the emission reductions needed to put the world on a sustainable path. Advocates for these policies need the analytical and communications tools to explain how actions at the state and local level can—when combined with actions in other jurisdictions and in other areas of public policy—lead to meaningful change.

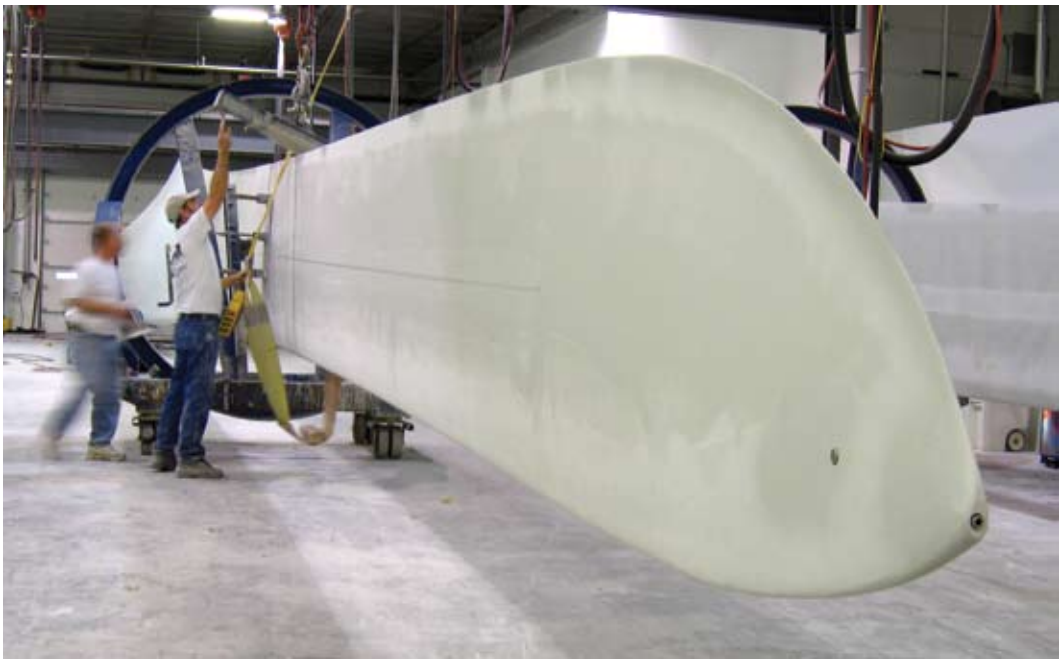
In addition, there must be effective "drive trains" for ideas to ensure that campaigns for clean energy reforms and global warming emission reductions in one jurisdiction can benefit from the wisdom of previous efforts in other states.

4. Curb the Power of Incumbent Polluting Interests

The entrenched power of fossil fuel producers and fossil fuel consuming industries is among the leading impediments to effective action on global warming at the federal level. There are many ways, however, in which advocacy for clean energy policies at the local, state and federal levels can begin to change the political playing field in ways that make the achievement of comprehensive reforms more likely. There are several ways to do this:

- First, incumbent interests can be converted from opposition to support of clean energy policies. This has already occurred with some electric utilities.

- Second, clean energy victories can erect competing economic interests to counterbalance the influence of



Clean energy policies create new economic opportunities for the United States, such as at this wind turbine blade factory in North Dakota. Workers and employers in these industries can be vested partners in creating a cleaner energy system with less impact on the global climate. Photo: Flickr user Tuey

polluting industries—for example, by spurring the creation of renewable energy or "cleantech" businesses in a particular city or state.

- Third, the successful implementation of clean energy policies can undercut the argument of incumbent interests that reducing global warming pollution will harm the economy, eroding the credibility of those interests in the halls of power.

An effective strategy for addressing global warming will emphasize campaigns that provide the chance to create alliances of convenience with existing industries and the opportunity to build vibrant new industries.

5. Engage the Public on Multiple Levels

A successful strategy against global warming will engage the public on many levels. Asking citizens to "write their congressman" in support of strong global warming legislation is important—but it also fails to take advantage of the intense desire of millions of citizens to engage in meaningful action for a better world.

By engaging in policy work at the local, state and federal levels, citizens will have the opportunity to participate in a variety of campaigns in a variety of ways.

Efforts to improve the energy efficiency of buildings are prime examples. Citizens can work together in voluntary programs to identify opportunities to reduce energy waste in their homes. In the process, those citizens may become more aware of the market barriers and other obstacles to improving energy efficiency, and thereby connect with local or statewide campaigns to enact energy efficiency policies.

A focus on well-designed, well-implemented clean energy policies can also ensure that the public has a positive experience with policies to address global warming. If the majority of citizens experience the effects of climate policy as solely an increase in their energy bills, their support will be more difficult to obtain and sustain than if they experience those policies as providing a more comfortable home, more transportation options, cleaner air, lower bills for heating and gasoline, and the dissemination of new green technologies in the neighborhoods in which they live. The public must *see* change happen in order to fully understand it and embrace it—a sound global warming strategy will ensure that they do.

6. Educate the Public About Global Warming

The politically polarized atmosphere surrounding the debate around global warming leads many advocates to avoid highlighting climate change in their public messaging as they advocate for clean energy policies, focusing instead on other benefits of those policies such as reduced dependence on fossil fuels, the creation of local jobs, and cleaner air.

In the short run, this approach often makes sense—expanding the potential to build bipartisan coalitions and enabling advocates to communicate with the public about the issues that truly concern them.

In the long run, however, the public must come to understand the dire and urgent threat posed by global warming if the nation is to be prepared to take the necessary steps to address the problem.

In many places, "green jobs," "clean air" or "getting off foreign oil" may be the most persuasive messages, but these efforts will do little to build a long-term movement to address global warming un-

less advocates take advantage of the opportunities presented by these campaigns to raise awareness among the public about the dangers posed by global warming and the need for immediate action.

7. Push the Envelope

The strategy described in this report relies mainly on specific, tangible policies to reduce global warming pollution in the near term. But advocates should also seek out opportunities to push the envelope of what is politically possible. California's landmark global warming emission standards for light-duty vehicles, for example, were considered a longshot for passage when proposed by a then-obscure, first-term state legislator (current state Senator Fran Pavley) in 2002. Yet, those standards came to redefine the debate around global warming pollution from vehicles and will yield dramatic reductions in global warming pollution in the years to come.

Indeed, in the leading states, clean energy advocacy has followed a predictable pattern, with initial victories on policies such as renewable electricity standards laying the groundwork for the ratcheting-up of renewable energy goals over time and, in some cases, the adoption of statewide carbon caps. In each of these states, advocates did not rest on their laurels, but constantly challenged the limits of what is politically possible—thereby setting an example for other states to follow.

Can such a strategy achieve meaningful reductions in global warming pollution quickly—and, in so doing, build the political consensus for further, more ambitious action? The next section describes the historical rationale for believing that it can work by looking at the recent history of clean energy advocacy in the United States.

A Precedent for Success: Climate and Energy Victories in the Last Decade

A climate action strategy that builds momentum by winning clean energy victories at the local and state level is not a new idea. In fact, it is the strategy that is most responsible for the dramatic leap forward in America's clean energy economy over the past decade—a leap forward that has achieved measurable reductions in global warming pollution and begun to build new constituencies for stronger action.

A Time of Change

Over the past decade—even as comprehensive action on energy and climate has been stymied on Capitol Hill—America has made tremendous progress toward shifting to cleaner sources of energy with less impact on the climate.

Since 2004, for example:

- The number of states with renewable electricity standards (RESs) has increased from 13 to 28, and many states that had originally adopted RESs have increased their targets for renewable electricity generation.[25] America now has five times as much wind power and eight times as much solar photovoltaic power as we did in 2004.[26] New technologies have also gotten a crucial jump-start: new solar thermal plants are under construction that will provide enough electricity to power 3 million homes, and America's first offshore wind farm is now nearing construction.[27]

- California and 13 other states adopted standards for tailpipe emissions of global warming pollution from cars, which led to the adoption of similar federal standards in 2010. The new standards call for light-duty vehicles to achieve average fuel economy of 34 mpg by 2016. After more than two decades of stagnation in vehicle fuel economy, light-duty vehicles sold in 2009 were the most energy-efficient and least polluting of any model year in U.S. history.[28]

- More than half of all states have adopted updated building energy codes

The United States has eight times as much solar photovoltaic electricity capacity and five times as much wind energy capacity as the nation did in 2004. Photo: Envision Solar

for new residential and commercial construction.[29] In 2010, building code officials adopted a new national model building energy code, for implementation beginning in 2012,that will reduce energy consumption in new buildings by 30 percent relative to buildings constructed according to existing standards.[30]

- Ten northeastern states implemented the nation's first cap-and-trade program for carbon dioxide emissions from power plants. The program has capped carbon emissions from the region's power plants while promoting the region's transition to a cleaner energy system.

- Seven states have adopted enforceable caps on global warming pollution from their state economies. In California, the state cap was affirmed by voters in 2010 with more than 60 percent of the vote.

- The amount of new energy efficiency savings delivered by utility ratepayer-funded energy efficiency programs has nearly tripled, with the growth in these programs largely spurred by state legislation to encourage energy efficiency.[31]

- Thanks to a combination of state and regional policies and programs to limit carbon dioxide emissions from new power plants—as well as strong grassroots activism—America's coal-fired electricity generating capacity is marginally lower than it was in 2002. The "coal rush" that analysts predicted to occur in the mid-2000s, which would have resulted in dramatic increases in carbon dioxide pollution, never materialized.

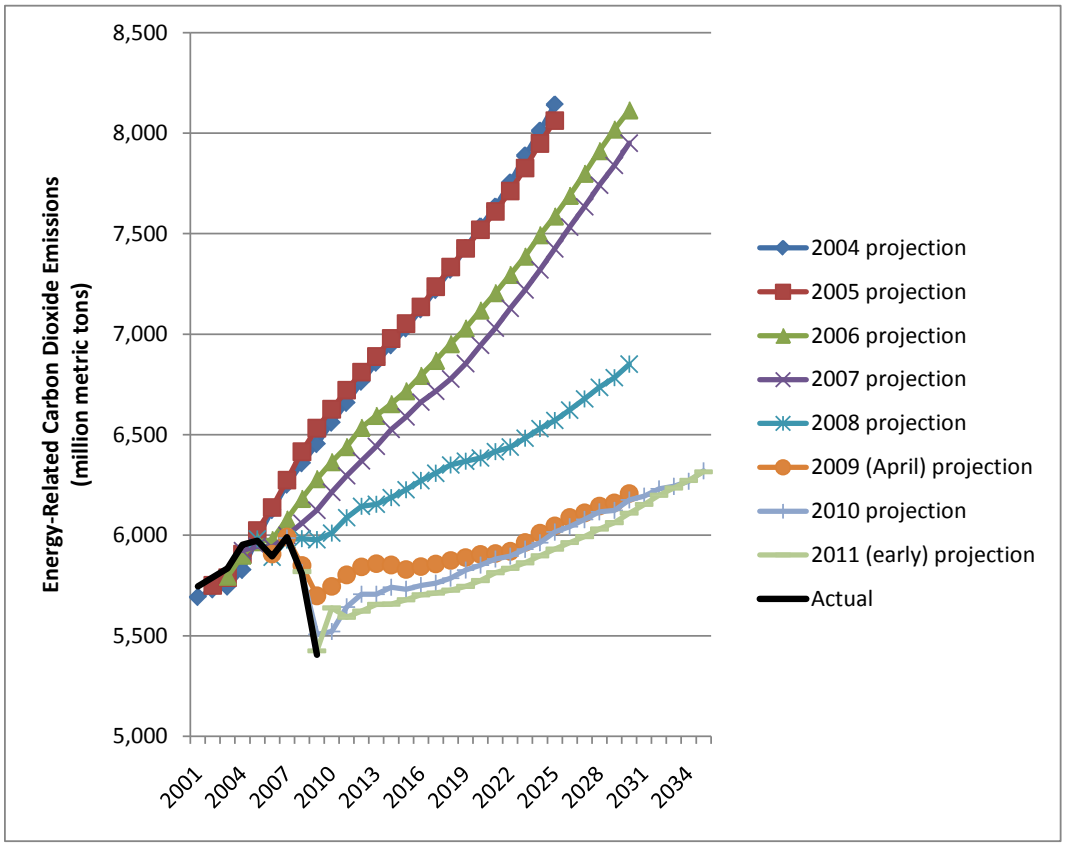
- Americans now drive fewer miles each year than they did in 2007, following decades of consistent increases in driving. The number of trips taken via transit nationally has increased by more than 10 percent since 2004.[32] New transportation services such as car-sharing and bike-sharing are increasingly available in American cities, and consumer preferences for new housing have shifted toward compact, walkable living arrangements that dramatically reduce the need to drive.[33]

Clean Energy Policies Have Reduced Global Warming Pollution

These and other clean energy victories over the last decade have had a marked impact on global warming pollution—an impact that will only increase in the years to come.

Seven years ago, the U.S. Energy Information Administration (EIA)—the independent analysis and forecasting arm of

Figure 1. U.S. Department of Energy Projected Emissions of Carbon Dioxide by Year in Which Projection Was Made[35]



the Department of Energy—issued a bleak forecast for America's future emissions of global warming pollution. In its *Annual Energy Outlook*, the EIA forecast that, by 2010—last year—energy-related emissions of carbon dioxide would top 6,500 million metric tons, a 14 percent increase over 2001 levels. By 2025, emissions were projected to exceed 8,100 million metric tons—a level of emissions that, if realized, would unquestionably have doomed efforts to reverse the trajectory of global warming pollution.[34] (See Figure 1.)

There was every reason to believe in 2004 that these dire predictions would come to pass. Since 1950, U.S. emissions of carbon dioxide had increased by an annual average of 1.8 percent per year.[36] Carbon dioxide emissions had increased in 40 of the previous 54 years, and in all but one year since 1992. America's economy was growing. Energy experts predicted a "coal rush" that would result in a massive expansion of America's coal-fired generating capacity.

But beneath the radar, a clean energy revolution was brewing. States were starting to take aggressive actions to bolster production of renewable energy, curb global warming pollution from transportation, and improve the energy efficiency of their economies. Over time, similar clean energy policies began to be implemented at the federal level—including improvements in vehicle fuel economy standards, energy efficiency standards for appliances,

and tax incentives for renewable energy development—both through legislation and through the use of the president's executive powers.

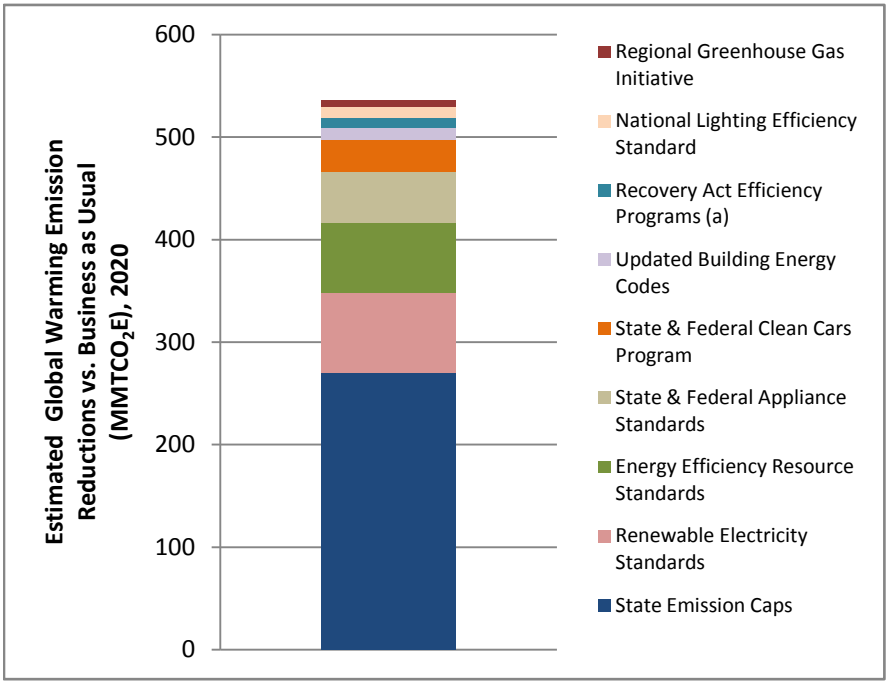
Today, America stands at a much different place than we did seven years ago. In 2009, the United States emitted 5,405 million metric tons of carbon dioxide pollution from energy use—16 percent less than the EIA had forecast we would emit just five years prior.[37]

To be sure, America's economic downturn had a great deal to do with the drop, as have changes in the energy marketplace, most notably the fall in natural gas prices. But clean energy policies have also played an important role in moving America toward a cleaner future.

The EIA, in analyzing the record drop in U.S. carbon dioxide emissions in 2009, found that only about one-third of the decline could be directly attributed to the faltering economy. A decline in the carbon intensity of energy use (driven by a large-scale shift from coal to natural gas and renewables) and a decline in the energy intensity of the economy (led by a shift to more fuel-efficient vehicles and a reduction in driving) were each responsible for an additional one-third of the decline.[38]

Environment America Research & Policy Center's 2009 report, *America on the Move*, projected that a series of state and federal clean energy policies adopted over the past decade will cut global warming pollution by 535.9 million metric tons by 2020, an amount equivalent to 7 percent of U.S. global warming pollution in 2007.[39] (See Figure 2.) In part because of these measures, the EIA now projects that U.S. carbon dioxide emissions in 2020 will total 5,774 million metric tons—4 percent less than emissions in the peak year of 2007 and 23 percent below the emissions level the EIA projected as recently as 2004.[40]

Figure 2. Projected Emission Reductions in 2020 from State and Federal Clean Energy Policies[41]



(a) Includes only those programs in which funding had been allocated as of December 2009. Chart excludes emission reductions from overlapping policies.

Clean Energy Campaigns Have Changed the Political Playing Field

Clean energy victories have also changed the playing field on which public policy is set in the United States.

First, clean energy victories have created new industries with a stake in continued progress. In California, for example, the campaign to defend California's landmark global warming emission cap drew strong support from "cleantech" companies and investors, who saw direct economic self-interest in the state's continued pursuit of clean energy.[42] Just as importantly, the involvement of these companies also legitimized the argument that clean technology can be a sound foundation for the state's economic future.

In other states, the seeds of a clean energy economy—once planted—have proven difficult to uproot. In Ohio, newly elected Republican Governor John Kasich has signaled that he does not oppose the state's renewable electricity standard and will not seek to repeal it, likely because of the recent boom in clean energy industries in the state.[43] In the Northeast, Republican governors such as New Jersey's Chris Christie have yet (as of this writing) to determine their position on the Regional Greenhouse Gas Initiative, which is bringing important revenue to those states during trying economic times. In Texas, Gov. Rick Perry has expressed support for the boom in wind power in that state—a boom initially triggered by a renewable electricity standard signed by former Gov. George W. Bush.

At the same time, clean energy victories have forged new coalitions and brought new supporters to the table. In Colorado and other states, agricultural interests have played a key role in supporting the expansion of renewable energy policies. Also in Colorado, the state's major utility—Xcel Energy—shifted from opposing the state's renewable electricity standard when it was adopted by ballot in 2004 to supporting legislation in 2010 that increased the state's renewable electricity target to 30 percent. Utilities were also key players in the drive to preserve California's global warming law, and some were strong advocates of comprehensive energy and climate legislation at the federal level.

These changes in the political playing field have not created enough momentum—yet—to bring about comprehensive energy and climate legislation in Congress. Even there, however, there have been signs of movement. In 2009, the U.S. House of Representatives—for the first time ever—voted in favor of legislation to cap global warming emissions and put a price on carbon. That bill, while far from perfect, contained emission reduction targets far more ambitious than anything under consideration earlier in the decade, along with a group of ambitious clean energy policies, some of them modeled after pioneering efforts in the states.

None of this is intended to minimize the challenges standing in the way of global warming and clean energy policy in the United States, or to ignore countervailing forces—such as the politicization of the debate around climate science—that make the playing field more challenging in some ways than it was in the past decade.

However, there is clearly recent historical precedent for the idea that a strategy of pursuing opportunistic campaigns to forward clean energy solutions across the economy can make a dent in global warming pollution and change the political calculus for the better.

The Way Forward on Global Warming: America's Potential for Emission Reductions Through Clean Energy Policies

America has tremendous opportunities to cut emissions of global warming pollution, using clean energy policies pursued at a variety of levels and across many sectors of the economy.

To illustrate the potential for emission reductions, we conducted an analysis of the potential emission reductions that could result from adoption of a suite of 30 of local, state and federal clean energy policies. (See "About the 'Way Forward' Project," opposite page.)

Emission Reduction Policies

In this report, we review 30 scenarios of policies, measures or initiatives that are capable of reducing global warming pollution. We sought out policies that have been adopted or seriously proposed in one or more jurisdictions. We also sought out opportunities to "push the envelope" through the adoption of stronger, yet still realistic, targets for clean energy development than have yet been adopted. Details on the policies and our rationale for including them in this analysis can be found in the accompanying Volume 2 of this report.

The following sections describe both the specific policy scenarios evaluated in each sector of the economy, as well as an overall vision for where the adoption of such policies might lead us in the decades to come.

Transportation

Under this scenario, by 2030, the cars and trucks Americans drive will incorporate a full range of existing technologies—from turbocharging to hybrid-electric drive—to maximize fuel economy. Plug-in vehicles—both fully electric cars and plug-in hybrids—will command a significant and growing share of the automobile marketplace. An increasing share of the nation's transportation fuels will come from low-carbon options such as clean electricity and advanced biofuels. Heavy-duty trucks, airplanes, buses and trains will also experience improved fuel economy and increasingly use cleaner alternative fuels. New American urban neighborhoods will be built so that driving is an option, not a requirement, with compact, mixed-use neighborhoods

About the "Way Forward" Project

Over the past decade, a great deal of energy and resources have been devoted to analyzing the potential impact of clean energy policies at the federal and state levels, with work conducted by non-profit, academic and government analysts. There have been fewer efforts, however, to examine the *cumulative* emission reduction impact of state or local clean energy policies adopted by multiple jurisdictions.

It is impossible for policy-makers, advocates or the general public to understand how local and state policies can contribute to national emission reduction goals if there is no one "keeping score." Important work to fill this gap in knowledge has been done by the Center for Climate Strategies, the World Resources Institute and others.[44] These analyses have typically used the results of state greenhouse gas reduction plans and/or state-adopted emission reduction targets to estimate the contribution state policies can make toward achieving the nation's emission reduction needs. However, these efforts (along with our 2009 report, *America on the Move*), while illuminating, have often relied on data produced from various analyses conducted by various entities at various points in time, or on non-binding pledges of action by state officials.

To obtain a clearer picture of the role that local, state and non-legislative federal policies can play in curbing global warming pollution, this report presents an analysis of the emission reduction potential of clean energy policies across all 50 U.S. states. We used a uniform approach, estimating the emission reductions that could result under 30 individual policy scenarios and one combined policy scenario in all 50 states against a consistent emissions baseline.

It is important for readers to understand that this analysis is not a projection of what *will* happen if these policies are adopted, but rather a presentation of scenarios of what *might* happen if anticipated trends in energy availability and prices become reality, if the policies discussed here are implemented properly and on the designated timeline, and if potential barriers to the implementation of these policies (e.g., a lack of transmission capacity to access renewable energy resources) are surmounted. In short, this analysis is intended to help readers grasp the potential impact of the various policies and develop priorities among them, and is not a "crystal ball."

Volume 2 of this report (available on-line at www.environmentamerica.org) describes our methodology for this analysis in detail. As with all such efforts, the estimates in this report are subject to limitations and are only as accurate as the assumptions on which they are based. We invite others to build on our efforts in order to create a greater understanding of the role that state and local efforts can play in addressing global warming.

Building walkable communities with better public transportation choices can simultaneously curb global warming pollution while helping the United States to break its dependence on oil. Photo: istockphoto.com, Cosmonaut Creative Media

and a variety of transportation options. Residents of existing American communities will have more transportation choices, including improved transit systems and improved infrastructure for bicycling. Energy-efficient passenger rail will play an important role in the nation's intercity transportation system, with increasingly frequent and fast service curbing air and highway travel on an increasing number of corridors nationwide.

Specific policies to advance this vision include:

- Federal adoption of standards for vehicle fuel economy and global warming emissions that achieve light-duty average fleet fuel economy of 62 miles per gallon by 2025.
- Adoption of policies to encourage the deployment of millions of electric vehicles in the next two decades.
- Adoption of strong federal fuel economy standards for heavy-duty trucks.
- Implementation of policies to improve the fuel efficiency of trains and airplanes.

- Adoption of clean fuel standards that require a reduction in the carbon intensity of transportation fuels.

- Implementation of local and state policies that direct the majority of new residential development in metropolitan areas into compact, transit-oriented neighborhoods.

- Doubling of transit ridership generated by increases in transit service, coupled with increased ridership due to service improvements, and increased energy efficiency in transit vehicles.

- Shifting of automobile insurance payments from flat annual fees to charges based in part on the number of miles driven.

- Launching of commute-trip reduction programs and strategies that reduce single-passenger commuting to worksites.

- Investment and policy changes to double bicycle commuting in U.S. cities.

- Construction of a high-speed rail network consistent with the national high-speed rail vision by 2030.

Homes and Businesses

Under this scenario, by 2030 all new buildings will be constructed to high levels of energy efficiency. Most new homes will be "zero net energy"—generating as much energy from renewable sources as they use over the course of a year. The nation's pre-existing building stock will have been overhauled to prevent energy waste. New appliances and commercial equipment will take full advantage of technologies to improve efficiency. Electric utilities in each state will be partners—not road blocks—in helping

Retrofitting existing homes and businesses for greater energy efficiency is one of the fastest and most cost-effective ways to reduce global warming pollution in the United States. Photo: istockphoto.com, cjp

residents and businesses to make their buildings more energy efficient. Renewable energy technologies will become inexpensive enough, and barriers to their implementation lowered enough, so that solar panels, small-scale wind turbines and other renewable energy technologies become common sights on residential and commercial buildings. Meanwhile, intense research and development efforts will yield new technologies—such as solar thermal space heating and extremely energy-efficient homes—that can poise the nation for greater emission reductions in the years to come.

Specific policies to advance this vision include:

- An aggressive program of energy efficiency retrofits sufficient to reduce energy consumption by 30 percent in households and 50 percent in commercial facilities by 2030.
- Adoption of strong building energy codes targeting reductions in energy use versus today's average homes and commercial buildings of 50 percent by 2020 and 75 percent by 2030.
- Adoption of strong energy efficiency standards for household appliances and commercial equipment.
- Adoption of strategies to drive the expansion of distributed renewable energy production in homes, businesses and industry.

Industry

American industry will become more competitive through improvements in the efficiency with which manufacturers use energy. Older, inefficient motor systems and boilers will be increasingly replaced with dramatically more efficient models, while commercial and industrial facilities will increasingly produce renewable energy through solar electric and water heating systems. Through energy analysis, the instal-

Global Warming Pollutants Other than Carbon Dioxide

This analysis only includes strategies to reduce carbon dioxide emissions from energy use, which account for 81 percent of America's total emissions of global warming pollution.[45] The omission of non-carbon dioxide gases from this analysis is not intended to suggest that they are unimportant. Rather, the fragmented nature of the data on state-by-state emissions of non-carbon dioxide global warming pollutants made their inclusion in this report impractical.

Some policies reviewed in this analysis—such as global warming emission standards for vehicles and clean fuel standards—directly address emissions of gases other than carbon dioxide and will yield reductions in these emissions as well. In other cases, reductions in fossil fuel consumption from strategies discussed above could be expected to lead to reductions in emissions of pollutants other than carbon dioxide—for example, methane emissions from coal mines, petroleum refineries and natural gas systems.

We encourage states and the federal government to investigate and adopt strategies to reduce emissions of non-carbon dioxide global warming pollutants.

lation of automated controls, and building retrofits, industrial facilities will identify sources of energy waste and address them. Combined heat-and-power—which uses the fossil fuels burned to provide heat for industrial processes to generate electricity as well—will become common on a broad scale. Finally, the nature of American industry will change, with traditional fossil fuel-based industries such as oil refining replaced with renewable energy manufacturing plants and high-tech facilities to produce energy efficient vehicles and products.

Specific policies to advance this vision include:

- Stronger energy efficiency standards for industrial boilers.
- Implementation of policies to encourage the use of combined heat-and-power in industrial facilities.
- Adoption of policies designed to reduce energy consumption in the production of industrial process heat.
- Reductions in emissions from refineries stemming from federal limits on pollution and reduced demand for oil.

Electricity Generation

The nation's current generation of coal-fired power plants will be well along in the process toward being cleaned up or phased out by 2030 and no new conventional coal plants will have been built. Solar, wind and other forms of renewable energy will become indispensible parts of America's energy mix—as important as nuclear power or natural gas power plants are today—with large-scale offshore wind farms and solar thermal plants complementing the widespread deployment of existing solar and wind power technology. Improvements to the grid will enable renewable energy to be smoothly integrated into the electricity system, while advances in energy storage (including increased deployment of plug-in vehicles) will allow for the potential integration of even more renewable energy in the future.

Specific policies to advance this vision include:

- Enforcement of strong emission control standards for mercury and conventional air pollutants at new and existing power plants.
- Adoption of limits on carbon dioxide pollution from power plants.
- Adoption of state generation performance standards that limit emissions from new power plants.
- Adoption of state (or federal) renewable electricity standards that set a target of 20 percent renewable energy by 2020 and 33 percent by 2030.
- Implementation of a moratorium on the construction of new conventional coal-fired power plants.

Cross-Sector Strategies

Public policies will be used to encourage energy efficiency, deployment of clean energy, and reductions in global warming pollution throughout the economy. Specific policies to advance this vision include:

- Implementation of President Obama's executive order requiring federal agencies to reduce their emissions of global warming pollution.
- Adoption of energy efficiency resource standards that require electric and natural gas utilities to meet specific benchmarks for energy efficiency improvements in homes, businesses and industry.
- Enforcement of existing state carbon caps and the Northeast's Regional Greenhouse Gas Initiative.

Clean Energy Policies Can Achieve Significant Emission Reductions

The "Way Forward" package of policy initiatives—if fully realized—would produce significant reductions in carbon dioxide emissions from energy use in the United States, keeping the nation within striking distance of achieving its emission reduction goals. (For a discussion of emissions of global warming pollutants other than carbon dioxide, see text box on page 26.)

Implementation of the 30 policies, measures and initiatives listed above—if achieved nationwide—would reduce U.S. energy-related carbon dioxide emissions by approximately 13 percent below 2005 levels by 2015, by 20 percent below 2005 levels by 2020, by 27 percent below 2005 levels by 2025, and by 34 percent below 2005 levels by 2030. (See Table 1 and Figure 3.)

By 2030, U.S. energy-related carbon dioxide emissions would be more than one-third below emissions expected under business-as-usual conditions. Significant reductions would occur across the economy, with the greatest reductions in the commercial sector—driven largely by improvements in the energy efficiency of buildings and a roughly 50 percent reduction in emissions from electricity generation. (See Table 2.)

These emission reductions are not—in and of themselves—sufficient to achieve the 25 to 40 percent reductions in emissions needed by 2020 to put the United States on a course to preventing the worst impacts of global warming. However, they do achieve a sizable share of those reductions and do so using existing policy tools and technologies.

Closing the remaining gap can occur in a number of ways:

1) Through the adoption of comprehensive climate and energy legislation—at either the state or federal level—that caps emissions of global warming pollution and/or puts a price on emissions.

2) Through the development of new technologies or new public policy tools not envisioned here.

3) Through the adoption of stronger policies or clean energy targets than envisioned here.

4) Through unforeseen changes resulting from the policies proposed here, including the crossing of "tipping points" in consumer acceptance or price of clean energy technologies and the potential for combinations of policies to produce greater emission reductions than the policies would deliver on their own.

Table 1. Energy-Related Carbon Dioxide Emissions Under the "Way Forward" Policy Scenario

Emission reductions	2015	2020	2025	2030
vs. business as usual	10%	18%	27%	36%
vs. 2008 emissions	11%	17%	25%	32%
estimated reductions vs. 2005 emissions	13%	20%	27%	34%

Figure 3. Energy-Related Carbon Dioxide Emissions Under Business-as-Usual Case and the "Way Forward" Policy Scenario

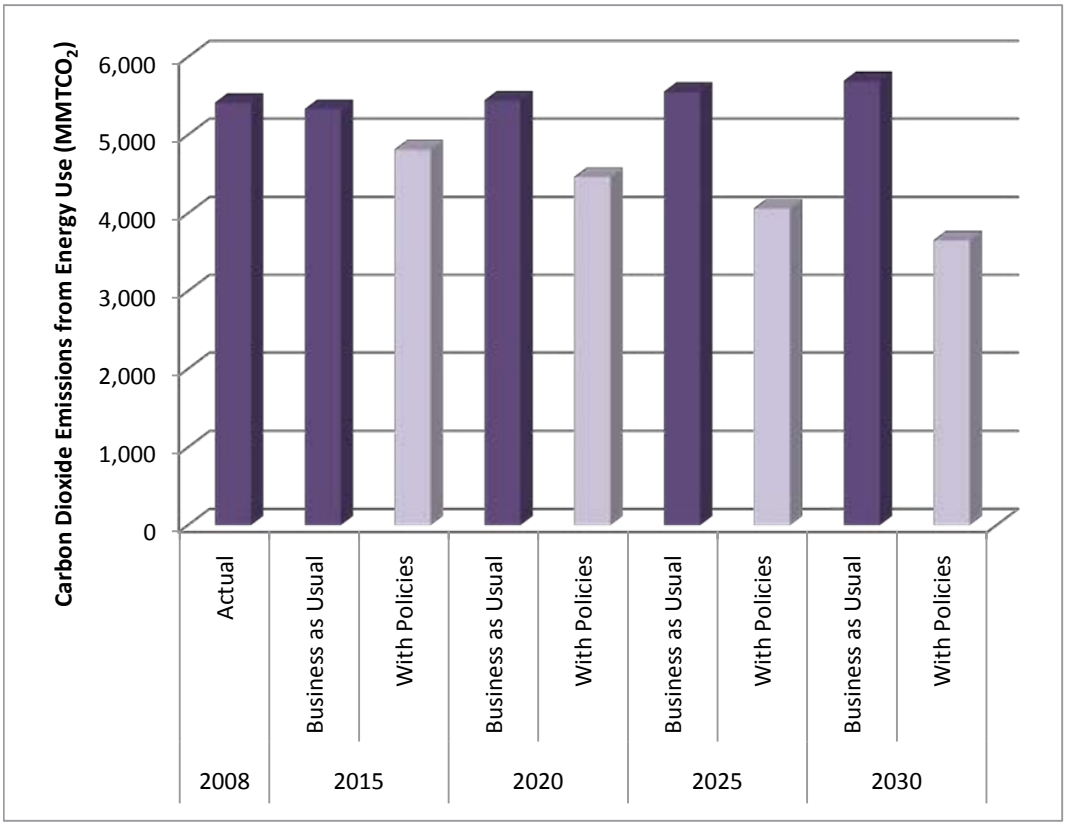


Table 2. Energy-Related Carbon Dioxide Emissions Under Business-as-Usual Case and "Way Forward" Policy Scenario

	2008	2015		2020		2025		2030		2008-2030
	Actual	Business as Usual	With Policies	Business as Usual	With Policies	Business as Usual	With Policies	Business as Usual	With Policies	Percentage Reduction
Transportation	1,836	1,858	1,813	1,818	1,644	1,811	1,510	1,850	1,396	24.0%
Commercial	1,006	1,004	825	1,072	751	1,144	663	1,212	593	41.1%
Industrial	1,392	1,358	1,199	1,399	1,134	1,400	1,023	1,393	888	36.2%
Residential	1,181	1,113	981	1,156	941	1,203	869	1,242	784	33.7%
Total*	**5,415**	**5,334**	**4,815**	**5,445**	**4,469**	**5,558**	**4,066**	**5,696**	**3,656**	**32.5%**

* Note: total does not equal sum of the sectors due to the impact of economy-wide state carbon caps.

Identifying the Biggest Opportunities

The state-by-state analysis suggests that there are sufficient battlefields nationwide to achieve meaningful reductions in global warming pollution in the near term—in every sector of the economy and in every state.

The policies proposed in this report deliver different levels of emission reductions in different regions of the country—in part because of varying projected levels of population growth, and in part because of the differing emission profiles of each region. (See Table 3.)

- **Heavy hitters** – The biggest potential for *absolute* emission reductions is concentrated in a few large, heavy-emitting states. The top five states for potential emission reductions in this scenario—Texas, Florida, California, Ohio and Pennsylvania—account for nearly one third of the potential emission reductions nationally by 2030, suggesting that these states are crucial battlegrounds in any national effort to address global warming. (See Table 4.)

Table 4. Top 10 States for Absolute Carbon Dioxide Emission Reductions in 2030 versus Business as Usual Under the "Way Forward" Policy Scenario (million metric tons)

State	Absolute Carbon Dioxide Emission Reductions in 2030 (MMT)
Texas	241.6
Florida	132.8
California	126.3
Ohio	81.9
Pennsylvania	74.5
Illinois	71.6
Georgia	71.3
Indiana	65.7
Virginia	65.1
North Carolina	62.3

- **Regional opportunities** – The biggest potential for *relative* emission reductions (compared with business-as-usual) is in the southeastern United States, which has historically trailed

Table 3. Emission Reductions by Region Under the "Way Forward" Policy Scenario

	2008	2020			2030			2008-2030
	Actual	Business as Usual	With Policies	Pct. Reduction v. BAU	Business as Usual	With Policies	Pct. Reduction v. BAU	Percentage Reduction
New England	172	159	132	17.1%	155	95	39.0%	44.9%
Mid Atlantic	538	524	438	16.4%	514	332	35.5%	38.3%
E North Central	948	925	762	17.6%	938	613	34.7%	35.3%
W North Central	478	489	409	16.4%	521	351	32.5%	26.4%
South Atlantic	956	976	773	20.8%	1038	618	40.4%	35.3%
E South Central	425	420	325	22.5%	432	262	39.5%	38.4%
W South Central	905	980	813	17.1%	1037	680	34.4%	24.8%
Mountain	371	410	340	16.9%	461	306	33.7%	17.5%
Pacific	624	564	477	15.4%	600	399	33.4%	36.0%

in energy efficiency and renewable energy efforts and is heavily reliant on coal, followed by New England, a region with great opportunities to reduce emissions from its aging, often oil-heated building stock. There is, however, great potential for emission reductions in every region of the United States. (See Table 5.)

Table 5. Top 10 States for Percentage Reductions in Energy-Related Emissions of Carbon Dioxide in 2030 versus Business as Usual Under the "Way Forward" Policy Scenario (excluding District of Columbia)

State	Percentage reduction vs. business-as-usual 2030
Vermont	45.0%
Wisconsin	43.7%
South Carolina	42.8%
Georgia	42.0%
Florida	41.3%
Idaho	41.3%
Tennessee	41.2%
Virginia	41.0%
Massachusetts	39.4%
Kentucky	39.4%

- **Different emission reduction opportunities predominate in different states** – The most effective policies for reducing global warming pollution vary from state to state based on several factors: the existence of effective policies in those states included in our business-as-usual case, the state's specific mix of economic activity and energy sources, climate, the energy efficiency of existing buildings, and renewable energy potential. A detailed listing of the estimated state-by-state emission reductions from the policies analyzed here can be found in the Appendix.

Clean energy policies at the local, state and federal levels have the potential to achieve significant reductions in global warming pollution—helping America to do its part to prevent the worst impacts of global warming. At the same time, the effort to win those policies can restore momentum to the movement to address global warming and shift the balance of political power—making the achievement of comprehensive change that much more likely.

Additional Benefits of Clean Energy Policies

Addressing global warming is not the only reason to pursue the policies in the "Way Forward" scenario. Clean energy policies are smart policies for America's future that can address many of the nation's biggest challenges.

- **Fossil fuel depencence** – Stronger fuel economy standards for cars and trucks, tighter building energy codes for new residential and commercial buildings, improvements in the energy efficiency of homes and commercial buildings, and other strategies can reduce America's depenence on fossil fuels—protecting the environment, stabilizing our economy, and enhancing our national security.

- **Job creation and economic prosperity** – Renewable electricity standards, energy efficiency resource standards, and policies to encourage solar power can help to create vibrant green industries that employ American

workers and give the United States a leg up in the global clean energy economy.

- **Public health and the environment** – Efforts to clean up our nation's dirtiest power plants and curb our dependence on oil through smart transportation and land-use policies will reduce air and water pollution, protecting the health of millions of Americans while safeguarding the health of our environment.

Regardless of whether the overriding concern is preventing dangerous global warming or restoring America's environmental and economic health, clean energy strategies can help move the nation toward a better future.

Conclusion: The Time to Begin Is Now

Making progress on global warming over the next several years requires a clear vision of the potential opportunities and a willingness to fight for emission reductions wherever they can be won—whether at the local, state or federal level. By doing so, we can not only begin to achieve the short-term emission reductions that science tells us are necessary to avert catastrophic impacts from climate change, but also begin building a political force that is capable of achieving even greater victories in the future.

Realizing this promise, however, will require major shifts in how environmentalists and others concerned about the climate fight for the planet's future.

It will require a shift of organizing and advocacy resources from "inside the Beltway" to the cities and states across the country where the key battles over global warming will be fought—not just for the next two years, but over the long term.

It will require clean energy advocates to tell the stories of our victories in order to inspire hope for change—even as we acknowledge the difficulty of the path ahead and the perilous consequences of failure.

It will require a shift away from the search for "silver bullet" policies that can solve the entire climate crisis at once, and instead involve a search for smaller "silver buckshot" solutions that can cumulatively achieve meaningful reductions in global warming pollution. It will require a shift away from negotiating around political limitations and toward envisioning the political opportunities a clean energy strategy presents to tap into new constituencies and build a strong environmental base.

And it will require constant reevaluation and revision to ensure that no opportunity to reduce global warming pollution is lost.

There are countless opportunities—regardless of the political climate—to take concrete actions that can reduce global warming pollution, build the environmental base, bring in new coalition partners, engage the public, demonstrate the real benefits of clean energy to our communities and economy, and curb the power of entrenched polluting special interests.

The ultimate path to solving global warming may not be clear, but there are plenty of opportunities to move forward. The time to begin is now.

Appendix: State and Scenario-Specific Estimates of Carbon Dioxide Pollution Reductions

Transportation Policies

Total emission savings may not equal the sum of the individual policies due to rounding and overlaps among policies.

State	Fuel Economy	Electric Vehicles	Pay-as-You-Drive Insurance	Train and Airplane Efficiency	Transit Expansion/ Improvement	Commute Trip Reduction	Energy Efficient Tires	Compact Urban Growth	Heavy-Duty Fuel Economy	High-Speed Rail	All Transportation
AK	0.3	0.3	0.0	1.9	0.0	0.0	0.0	0.0	0.7	0.0	**3.2**
AL	2.5	2.2	0.3	0.3	0.0	0.2	0.0	0.1	2.0	0.1	**7.5**
AR	1.5	1.4	0.2	0.2	0.0	0.1	0.0	0.1	1.7	0.0	**5.1**
AZ	4.2	3.7	0.5	0.9	0.2	0.3	0.1	1.0	2.8	0.1	**13.1**
CA	16.4	15.2	2.1	8.5	0.6	1.0	0.3	2.2	8.4	0.7	**53.7**
CO	2.4	2.3	0.3	1.1	0.1	0.1	0.0	0.2	1.5	0.0	**7.8**
CT	1.3	1.3	0.2	0.2	0.1	0.1	0.0	0.0	0.7	0.0	**3.8**
DC	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.3**
DE	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.0	**1.1**
FL	11.2	10.1	1.4	3.8	0.3	0.7	0.2	2.8	5.6	0.4	**34.9**
GA	5.2	4.8	0.7	0.7	0.1	0.3	0.1	0.6	3.6	0.2	**15.7**
HI	0.4	0.4	0.1	0.8	0.0	0.0	0.0	0.0	0.3	0.0	**1.9**
IA	1.2	1.1	0.2	0.1	0.0	0.1	0.0	0.0	1.4	0.0	**4.0**
ID	0.8	0.7	0.1	0.1	0.0	0.0	0.0	0.1	0.7	0.0	**2.5**
IL	3.7	3.6	0.5	2.4	0.2	0.2	0.1	0.1	3.4	0.2	**14.1**
IN	2.4	2.1	0.3	0.7	0.0	0.1	0.0	0.1	3.0	0.1	**8.8**

State	Fuel Economy	Electric Vehicles	Pay-as-You-Drive Insurance	Train and Airplane Efficiency	Transit Expansion/ Improvement	Commute Trip Reduction	Energy Efficient Tires	Compact Urban Growth	Heavy-Duty Fuel Economy	High-Speed Rail	All Transportation
KS	1.0	0.9	0.1	0.2	0.0	0.1	0.0	0.0	1.2	0.0	**3.5**
KY	1.8	1.6	0.2	0.7	0.0	0.1	0.0	0.0	2.2	0.1	**6.7**
LA	2.2	2.0	0.3	1.3	0.1	0.1	0.0	0.0	2.0	0.1	**7.9**
MA	2.5	2.5	0.3	1.0	0.2	0.2	0.0	0.1	1.1	0.1	**7.8**
MD	2.9	3.0	0.4	0.4	0.1	0.2	0.0	0.3	1.5	0.1	**8.6**
ME	0.6	0.5	0.1	0.2	0.0	0.0	0.0	0.0	0.4	0.0	**1.8**
MI	3.7	3.3	0.5	0.5	0.1	0.2	0.1	0.1	2.0	0.1	**10.4**
MN	2.3	2.1	0.3	0.8	0.1	0.1	0.0	0.2	3.1	0.1	**8.8**
MO	2.6	2.4	0.3	0.5	0.1	0.2	0.0	0.1	2.3	0.1	**8.5**
MS	1.5	1.3	0.2	0.3	0.0	0.1	0.0	0.0	1.5	0.0	**4.9**
MT	0.5	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.6	0.0	**1.7**
NC	5.5	4.9	0.7	0.6	0.1	0.3	0.1	0.8	2.8	0.7	**16.0**
ND	0.2	0.2	0.0	0.1	-0.1	0.0	0.0	0.0	0.5	0.0	**1.1**
NE	0.7	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.9	0.0	**2.4**
NH	0.8	0.7	0.1	0.0	0.0	0.0	0.0	0.1	0.3	0.0	**2.0**
NJ	4.0	3.7	0.5	2.7	0.3	0.2	0.1	0.3	2.3	0.1	**13.8**
NM	1.0	0.9	0.1	0.2	0.0	0.1	0.0	0.0	1.0	0.0	**3.2**
NV	1.8	1.6	0.2	0.9	0.1	0.1	0.0	0.5	1.2	0.1	**6.1**
NY	4.7	4.9	0.6	1.6	0.4	0.3	0.1	0.0	2.6	0.3	**15.0**
OH	3.8	3.4	0.5	1.6	0.1	0.2	0.1	0.0	3.5	0.1	**13.0**
OK	1.7	1.5	0.2	0.5	0.0	0.1	0.0	0.1	2.9	0.1	**7.1**
OR	1.6	1.5	0.2	0.6	0.1	0.1	0.0	0.2	1.6	0.1	**5.7**
PA	4.2	4.0	0.5	1.2	0.2	0.3	0.1	0.0	3.2	0.2	**13.6**
RI	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	**1.0**
SC	2.6	2.3	0.3	0.2	0.0	0.2	0.0	0.2	1.7	0.1	**7.4**
SD	0.3	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	**1.1**
TN	2.8	2.5	0.4	1.2	0.0	0.2	0.0	0.2	2.8	0.0	**10.1**
TX	14.8	13.4	1.9	6.3	0.2	0.9	0.2	2.5	13.9	0.6	**53.1**
UT	1.3	1.2	0.2	0.6	0.0	0.1	0.0	0.2	1.2	0.0	**4.8**
VA	4.4	4.0	0.6	1.4	0.2	0.3	0.1	0.5	2.9	0.1	**13.9**
VT	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.9
WA	2.9	2.6	0.4	1.8	0.1	0.2	0.0	0.5	2.5	0.1	10.7
WI	2.0	1.8	0.3	0.4	0.0	0.1	0.0	0.1	1.8	0.1	6.4
WV	0.6	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.6	0.0	2.0
WY	0.3	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.9	0.0	1.6

Residential, Commercial and Industrial Policies

Total emission savings may not equal the sum of the individual policies due to rounding and overlaps among policies.

State	Comm. Building Codes	Comm. Dist. Renewables	Comm. Retrofits	Comm. App. Stds.	EERS	Ind. Boilers	Ind. Comb. Heat/Power	Ind. Process Heat	Res. Building Codes	Res. Dist. Renewables	Res. Retrofits	Res. App. Stds.	Refinery Savings	All RCI
AK	0.4	0.1	0.9	0.0	3.0	0.7	4.9	0.6	0.2	0.0	0.3	0.1	0.5	**9.9**
AL	2.2	0.9	3.3	0.3	12.1	0.7	3.2	1.0	1.3	0.6	1.6	0.6	0.1	**23.8**
AR	1.3	0.4	2.1	0.2	6.5	0.6	2.7	0.5	0.7	0.3	1.1	0.3	0.1	**13.7**
AZ	6.9	2.4	4.6	0.7	1.7	0.3	1.2	0.5	3.8	1.6	1.7	1.0	0.0	**20.7**
CA	12.6	12.5	19.4	1.5	11.0	2.3	9.8	2.5	6.3	7.8	7.3	2.1	3.3	**66.8**
CO	2.6	1.7	3.8	0.4	8.9	0.6	3.0	0.7	1.2	1.2	1.5	0.5	0.1	**17.0**
CT	1.4	1.3	2.5	0.2	3.7	0.1	0.4	0.1	0.9	0.8	0.9	0.3	0.0	**8.1**
DC	0.1	0.4	1.4	0.1	1.2	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	**2.5**
DE	0.4	0.2	0.7	0.0	0.8	0.1	0.3	0.1	0.2	0.1	0.3	0.1	0.2	**3.0**
FL	15.5	7.3	12.5	1.4	26.2	0.7	2.5	0.5	10.4	4.1	4.9	2.3	0.0	**65.6**
GA	5.0	1.7	6.7	0.7	19.1	0.9	3.9	0.8	3.3	1.1	3.1	1.1	0.0	**39.6**
HI	0.3	1.0	0.6	0.0	0.0	0.0	0.1	0.0	0.1	0.6	0.1	0.0	0.2	**2.5**
IA	1.7	0.9	3.5	0.2	8.2	1.1	6.1	1.0	0.9	0.6	1.1	0.4	0.0	**19.3**
ID	0.9	0.3	1.0	0.1	3.8	0.2	0.7	0.3	0.5	0.2	0.5	0.2	0.0	**6.4**
IL	7.2	2.9	11.2	0.8	0.0	1.1	6.7	1.5	3.4	1.9	3.9	1.4	1.1	**42.4**
IN	4.3	1.3	6.3	0.5	5.4	1.6	9.5	1.8	2.2	0.9	2.1	0.9	0.5	**31.9**
KS	1.7	0.9	2.7	0.3	6.8	0.5	2.2	0.6	1.1	0.6	1.0	0.4	0.4	**14.3**
KY	2.8	1.0	4.0	0.3	12.9	0.5	3.4	0.9	1.4	0.7	1.7	0.6	0.2	**24.2**
LA	1.7	0.7	3.3	0.3	18.1	3.4	18.4	2.8	0.7	0.5	1.6	0.5	2.7	**50.4**
MA	2.7	2.5	4.4	0.3	6.7	0.2	0.8	0.3	1.7	1.7	1.4	0.5	0.0	**15.0**
MD	3.7	1.0	5.1	0.4	5.8	0.3	1.1	0.2	1.5	0.7	1.7	0.6	0.0	**17.8**
ME	0.5	0.2	1.1	0.0	1.2	0.2	0.6	0.1	0.3	0.1	0.3	0.1	0.0	**3.3**
MI	6.1	1.6	8.7	0.6	0.5	0.7	3.9	0.9	2.0	1.1	2.6	1.0	0.1	**28.9**
MN	4.0	1.4	5.2	0.4	4.2	0.8	4.4	1.0	2.2	0.9	1.6	0.6	0.5	**23.8**
MO	3.8	1.7	5.7	0.5	12.7	0.5	2.0	0.6	3.0	1.1	2.3	0.9	0.0	**25.5**
MS	1.2	0.6	2.0	0.2	7.4	0.4	1.9	0.6	1.0	0.4	0.9	0.4	0.4	**14.9**
MT	0.4	0.2	0.8	0.1	2.4	0.1	0.6	0.1	0.1	0.1	0.3	0.1	0.2	**4.1**
NC	5.9	1.8	7.1	0.7	18.2	0.7	2.9	0.6	3.8	1.2	2.9	1.1	0.0	**38.9**
ND	0.4	0.2	0.9	0.1	2.0	1.1	4.1	0.5	0.2	0.1	0.2	0.1	0.1	**8.1**
NE	1.1	0.4	2.0	0.1	5.2	0.3	1.9	0.4	0.6	0.3	0.6	0.2	0.0	**10.2**
NH	0.6	0.2	0.9	0.1	1.6	0.0	0.2	0.1	0.5	0.1	0.3	0.1	0.0	**3.1**
NJ	5.7	1.7	7.8	0.5	15.4	0.2	0.9	0.3	2.6	1.1	2.0	0.8	0.5	**30.7**
NM	0.7	0.5	1.6	0.1	1.6	0.3	1.6	0.3	0.2	0.3	0.5	0.2	0.1	**5.9**
NV	2.4	1.0	1.6	0.2	6.6	0.1	0.6	0.2	1.4	0.6	0.7	0.3	0.0	**12.1**
NY	7.7	2.0	16.0	0.8	8.7	0.4	1.6	0.5	3.2	1.3	3.9	1.2	0.0	**36.8**
OH	5.8	1.9	10.3	0.7	7.6	1.1	6.6	1.6	2.3	1.3	3.3	1.3	0.6	**36.5**
OK	1.8	0.8	3.4	0.3	8.9	1.2	5.6	0.9	0.8	0.5	1.8	0.5	0.5	**21.0**
OR	1.7	2.1	2.5	0.2	7.5	0.2	0.9	0.3	1.3	1.4	1.2	0.4	0.0	**14.1**
PA	4.8	1.5	9.2	0.6	20.9	0.9	4.3	1.4	3.0	1.0	3.2	1.2	0.6	**41.4**
RI	0.4	0.1	0.7	0.0	1.2	0.0	0.1	0.0	0.2	0.1	0.2	0.1	0.0	**2.1**
SC	1.8	0.8	3.2	0.3	9.8	0.5	2.1	0.5	1.2	0.5	1.5	0.5	0.0	**18.9**
SD	0.4	0.2	0.8	0.1	1.9	0.1	0.8	0.1	0.2	0.1	0.3	0.1	0.0	**3.8**
TN	4.0	1.4	4.7	0.5	15.2	0.8	3.2	0.9	2.7	1.0	2.2	0.9	0.2	**32.0**
TX	21.1	5.7	20.9	2.0	64.1	8.8	42.5	7.3	12.0	3.8	8.5	3.2	5.4	**157.6**
UT	1.7	1.7	1.9	0.1	5.4	0.5	1.5	0.5	0.9	0.3	0.7	0.2	0.2	**10.5**
VA	6.1	6.1	7.6	0.7	15.9	0.7	3.4	0.5	2.7	1.1	2.6	1.0	0.1	**34.8**
VT	0.2	0.2	0.4	0.0	0.7	0.0	0.1	0.0	0.2	0.1	0.2	0.0	0.0	**1.3**
WA	3.9	3.9	4.7	0.4	13.0	0.2	1.1	0.3	2.6	0.5	2.3	0.7	1.1	**22.8**
WI	4.1	4.1	5.7	0.4	13.0	0.6	4.1	0.8	1.7	0.9	1.7	0.6	0.0	**27.7**
WV	0.5	0.5	1.8	0.1	4.3	0.3	2.0	0.2	0.1	0.2	0.8	0.2	0.0	**7.9**
WY	0.3	0.3	0.7	0.0	2.8	0.6	2.2	0.7	0.0	0.1	0.2	0.0	0.1	**6.8**

Electricity Policies (based on regional adoption) and Combined Policy Scenario

Total emission savings may not equal the sum of the individual policies due to rounding and overlaps among policies.

State	Renewable Elec. Std.	Gen. Perf. Std.	No New Coal	Power Plant Ozone/ Mercury Regs.	EPA CO_2 Regs.	All Electricity	Federal Agencies	Combined Emission Reductions	% Reduction vs. Business-as-Usual 2030	% Reduction from 2008 Emissions
AK	1.1	0.0	0.0	0.0	1.1	**2.2**	0.1	**13.4**	34.1%	31.9%
AL	17.8	0.1	0.1	1.2	8.2	**22.4**	0.3	**41.3**	39.2%	41.7%
AR	8.4	0.1	0.1	0.6	4.4	**11.5**	0.1	**23.8**	36.4%	35.0%
AZ	10.0	0.3	0.3	0.8	13.3	**24.3**	0.5	**50.2**	33.6%	-5.6%
CA	3.5	0.0	0.0	1.2	3.4	**7.8**	1.1	**126.3**	32.4%	37.4%
CO	3.1	0.2	0.2	0.4	6.4	**10.0**	0.4	**31.9**	33.3%	27.3%
CT	1.7	0.0	0.0	0.2	1.2	**3.0**	0.1	**14.1**	38.7%	46.1%
DC	1.6	0.0	0.0	0.1	0.7	**2.2**	0.5	**3.6**	62.9%	74.8%
DE	0.5	0.0	0.0	0.1	1.0	**1.3**	0.0	**4.3**	33.8%	40.5%
FL	42.1	0.2	0.0	1.1	13.8	**53.0**	0.8	**132.8**	41.3%	24.0%
GA	29.0	0.1	0.1	2.0	13.3	**36.5**	0.6	**71.3**	42.0%	40.6%
HI	0.0	0.0	0.0	0.0	1.5	**1.7**	0.1	**5.2**	31.9%	43.6%
IA	10.0	0.2	0.2	1.3	7.2	**16.2**	0.1	**30.7**	38.8%	38.5%
ID	5.2	0.0	0.0	0.1	2.0	**6.6**	0.1	**11.4**	41.3%	31.3%
IL	12.7	1.7	1.6	4.7	27.2	**37.6**	0.4	**71.6**	33.5%	36.1%
IN	23.0	0.3	0.2	3.0	21.3	**40.8**	0.3	**65.7**	34.6%	32.7%
KS	4.1	0.4	0.4	0.4	5.2	**9.1**	0.1	**20.5**	26.8%	17.3%
KY	18.2	0.2	0.1	2.1	14.7	**29.9**	0.2	**48.1**	39.4%	39.8%
LA	14.0	0.2	0.2	1.0	7.2	**18.8**	0.2	**57.0**	35.4%	38.2%
MA	2.6	0.1	0.0	0.4	2.3	**5.0**	0.2	**26.9**	39.4%	45.2%
MD	5.4	0.0	0.0	0.8	6.6	**11.0**	0.8	**29.0**	36.5%	34.2%
ME	1.4	0.0	0.0	0.1	0.5	**1.9**	0.1	**6.5**	36.8%	44.7%
MI	17.9	0.4	0.3	3.1	21.5	**35.9**	0.3	**60.6**	33.3%	33.7%
MN	3.2	0.1	0.1	2.2	12.5	**13.8**	0.2	**36.4**	24.9%	10.7%
MO	12.6	0.8	0.8	2.0	13.5	**24.6**	0.3	**46.2**	38.7%	35.8%
MS	10.5	0.0	0.0	0.7	4.8	**13.2**	0.2	**25.5**	36.8%	33.6%
MT	2.1	0.0	0.0	0.0	1.2	**2.9**	0.1	**6.5**	33.1%	35.2%
NC	19.1	0.1	0.1	2.1	13.8	**26.8**	0.4	**62.3**	38.2%	33.2%
ND	2.7	0.0	0.0	0.3	1.8	**4.1**	0.1	**10.5**	32.6%	25.7%
NE	6.7	0.0	0.0	0.8	4.4	**10.4**	0.1	**17.9**	36.9%	34.1%
NH	0.7	0.0	0.0	0.1	0.5	**1.2**	0.0	**6.0**	37.5%	38.2%
NJ	6.0	0.0	0.0	0.9	7.6	**12.4**	0.2	**49.4**	35.2%	34.2%
NM	1.8	0.1	0.1	0.2	2.4	**4.3**	0.2	**11.7**	28.6%	27.8%
NV	2.9	0.0	0.0	0.1	3.7	**5.6**	0.1	**17.7**	33.9%	6.3%
NY	4.1	0.1	0.0	1.0	5.4	**9.9**	0.5	**58.4**	34.1%	39.2%
OH	23.7	0.4	0.3	4.2	30.2	**48.9**	0.4	**81.9**	32.9%	34.7%
OK	8.7	0.5	0.4	0.5	6.3	**14.7**	0.3	**34.5**	32.4%	29.3%
OR	3.5	0.0	0.0	0.1	4.1	**6.4**	0.1	**19.2**	36.6%	34.1%
PA	23.0	0.1	0.1	2.1	16.6	**36.9**	0.5	**74.5**	36.7%	40.1%
RI	0.7	0.0	0.0	0.1	0.3	**1.1**	0.0	**3.9**	39.2%	44.2%
SC	15.4	0.1	0.1	1.1	7.1	**19.4**	0.2	**35.6**	42.8%	47.3%
SD	2.4	0.0	0.0	0.3	1.6	**3.8**	0.1	**6.9**	37.3%	37.3%
TN	23.9	0.1	0.1	1.7	11.2	**30.3**	0.3	**55.8**	41.2%	36.7%
TX	60.4	6.0	5.5	1.9	44.0	**97.4**	1.2	**241.6**	34.3%	19.0%
UT	6.3	0.0	0.0	0.1	2.4	**8.0**	0.2	**17.9**	37.3%	25.0%
VA	24.5	0.1	0.1	2.0	13.6	**33.4**	1.1	**65.1**	41.0%	37.3%
VT	1.1	0.0	0.0	0.0	0.2	**1.3**	0.0	**3.3**	45.0%	49.7%
WA	10.7	0.0	0.0	0.2	7.5	**16.0**	0.4	**36.2**	35.6%	30.4%
WI	12.1	0.8	0.7	2.3	13.4	**24.2**	0.2	**45.1**	43.7%	43.0%
WV	5.2	0.1	0.0	0.7	4.8	**9.3**	0.1	**15.5**	35.5%	46.2%
WY	2.7	0.0	0.0	0.0	1.1	**3.5**	0.0	**8.4**	30.3%	29.1%

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