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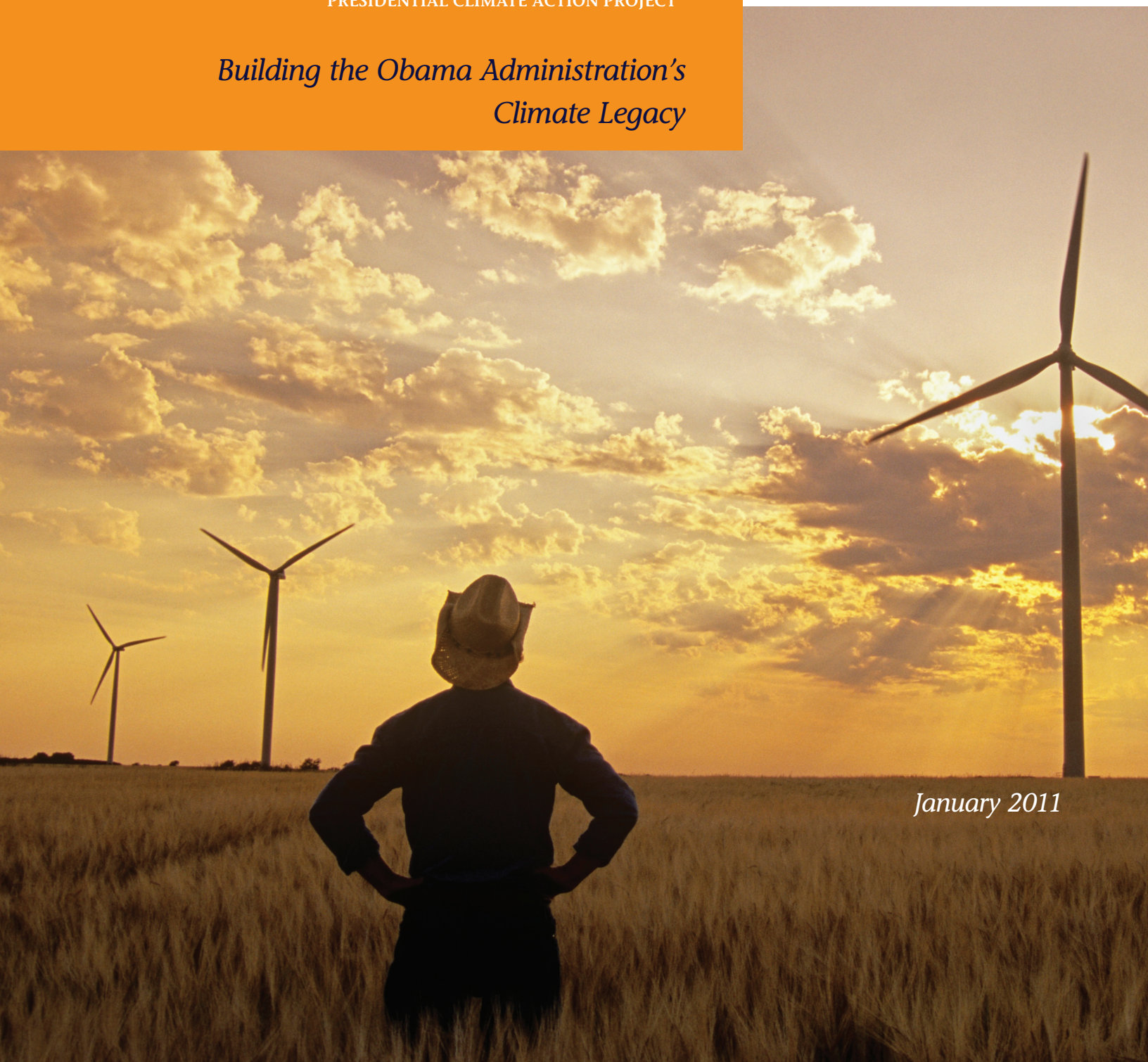
PCAP

PRESIDENTIAL CLIMATE ACTION PROJECT

Building the Obama Administration's Climate Legacy



January 2011

ACKNOWLEDGMENTS

An enormously valuable National Advisory Committee has supported the Presidential Climate Action Project (PCAP) over the past four years. Its members encouraged us to push the envelope of public policy in light of the urgency of global climate change, and they agreed that consensus would not be required, since consensus seeks the lowest common denominator in group work. Special thanks goes to Gary Hart and Ray Anderson for their co-chairmanship of the committee.

The project was the brainchild of Dr. David Orr of Oberlin College, who continues his cutting-edge leadership in the field of sustainability. PCAP was administered by the University of Colorado Denver School of Public Affairs during its first three years, and by Natural Capitalism Solutions in its final year. Thanks to Deans Kathleen Beatty and Paul Teske and to Hunter Lovins, the president and founder of Natural Capitalism Solutions.

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April Bucksbaum, Scott Bernstein and Jane Elder contributed significantly to the content of this final report. Jennifer Lukas helped enormously with research and proofreading.

PCAP has received ideas, advice and general intellectual support from hundreds of thought leaders and foot soldiers in the green movement in the United States and in Europe. In our 2008 report, we tried to list all of them to that point. We abandoned the effort in subsequent reports because contributors were simply too numerous to mention. But they know who they are, and we hope they know how much we appreciate their help. We're grateful, also, to John Podesta and Todd Stern who as leaders of the Obama transition team sat down with us shortly after the election in November 2008 to go over our recommendations.

We also thank the many people, from Nobel Laureates to school children, who signed two of PCAP's foundation documents: the Wingspread Principles on the U.S. Response to Climate Change and the State of the Climate Message.

Finally, we thank the people in the Obama Administration for their work, including Barack Obama, who set aside time during his presidential campaign to allow us to brief him. Anyone who has served in the federal government knows how difficult it is to bring about real change. Nevertheless as we note in the Foreword, this Administration has done more to create responsible climate policy in the United States than any presidential team in the last two decades and perhaps more than any administration since Lyndon Johnson's science advisors warned him about climate change in 1965. We've attempted to capture the highlights of the Obama Administration's climate and energy actions so far in Appendix 3.

In this report, as in the others, we urge the President and his team to be even bolder, including more assertive leadership on national climate legislation and the U.S commitment to cut its greenhouse emissions. At the same time, we gratefully acknowledge the progress the Administration has made so far.

NATIONAL ADVISORY COMMITTEE

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FOREWORD

This is the last of four reports issued by the Presidential Climate Action Project (PCAP) since the project began in January 2007. In the course of these past four years, we have published more than 200 recommendations on how the 44th President and the 111th Congress could improve federal policies related to global climate change and America's transition to a clean energy economy.

Our principal objective has been to identify actions the President could take without further approval from Congress. To make sure our recommendations were grounded in law, one of our first initiatives was to commission two detailed studies on presidential authorities. In those reviews, the University of Colorado School of Law looked at federal laws and executive orders going back to the 1930s, as well as the different leadership philosophies of past presidents.

We have approached climate change as a nonpartisan topic – which, of course, it should be. In December 2007, just before the primary elections of 2008 began, we provided information and offered to consult with each of the presidential candidates at that time. We issued our first set of recommendations in January 2008 – more than 180 policy and program proposals across 14 topic areas, ranging from the economics of climate action to natural resource stewardship, and from agriculture to transportation and public health. To create that report, we sought input from more than 300 experts and stakeholders in a variety of disciplines.

When the presidential field narrowed to Barack Obama and John McCain in 2008, PCAP provided policy papers to both campaigns and organized a day-long briefing for the candidates' advisors on the critical connection between global climate change and national security.

In November 2008, we presented updated recommendations to the leaders of the Obama Transition Team. We publicly announced the Presidential Climate Action Plan at a news conference in Washington D.C., and held a briefing on Capitol Hill for members of Congress and their staffs.

Days before President George Bush's final State of the Union address in January 2009, we delivered a "State of the Climate" message to the White House (Appendix 1). We argued that the State of the Union could no longer be adequately discussed without addressing the state of the climate. Among the scores of citizens, scientists, academics, and thought leaders who signed the message were five Nobel Peace Prize Laureates; John Podesta, who co-chaired the Obama Transition Team; and Dr. John Holdren, who became President Obama's chief science advisor.

Throughout the project, we have been guided by an outstanding National Advisory Committee and by the "Wingspread Principles for the U.S. Response to Climate Change" (Appendix 2) – a consensus document that grew from a series of conferences I and several members of the future PCAP Advisory Committee organized in 2006-2007 in collaboration with the Johnson Foundation.[1]

We continued meeting with officials in the new Administration throughout 2009-2010 and gave presentations on national climate policy options across the United States and Europe, where we found intense interest about what the Obama Administration would do to assert U.S. leadership on climate change. We participated in and made presentations to the 14th Conference of the Parties sponsored by the United Nations under the Framework Convention on Climate Change in Poznan, Poland, and the 15th Conference of the Parities in Copenhagen.

1 The four conferences, called the National Leadership Summits for a Sustainable America, convened national experts to recommend how sustainability could be put back on the national agenda.

In August 2010 when it became clear that Congress would not act on a climate bill, we issued several additional recommendations for presidential action -- short-term steps the Administration could take to enhance U.S. credibility in international negotiations as COP-16 approached in Cancun, Mexico.

In this final report, we make the case that President Obama's legacy will be determined in the next two years, even if he is re-elected in 2012. Scientists have watched the consequences of global climate change appear more quickly than many predicted; they warn we are coming close to "tipping points" that will make it impossible to avoid irreversible, catastrophic consequences if the United States and other nations do not take decisive action soon.

While President Obama has been criticized by many climate-action advocates, including PCAP, for not putting his full weight behind legislation to price carbon, he has done more on this issue than any president since George H.W. Bush signed the UN Framework Convention on Climate Change in 1992. This report includes an inventory of the Administration's key achievements in Appendix 3.

The Administration has not yet exhausted its authority to act, however, or used the power of the pulpit to its full potential. Despite a dip during the recession, greenhouse gas emissions are trending upward in the United States and worldwide; we remain dangerously dependent on fossil fuels; fossil energy subsidies still distort market signals; and the United States has not yet made a science-based commitment to reducing emissions. Our insufficient response has been a key factor in the failure of the international community to reach a binding agreement to mitigate the climate problem.

Barack Obama has the talent, the team and the moment in history to become the President who leads the United States – and the world – to the threshold of a new era in the relationship between human development and the biosphere. Our hope is that in some measure, the Presidential Climate Action Project will have helped.

William Becker
Golden, Colorado
January 2011

INTRODUCTION

The next two years will be critical for America's future. They'll also be critical for President Barack Obama. Whether or not he serves a second term, future historians and citizens will regard 2011-2012 as his and America's defining moment.

As human development pushes harder than ever before against the boundaries of the biosphere, it is easy to slip into hyperbole about the importance of this time. But there is no exaggeration in regarding the next two years as pivotal. Consider:

- **NATIONAL SECURITY:** Military experts now acknowledge that our current energy mix and greenhouse gas emissions are serious threats to national security. As global competition for finite resources grows and as climate change becomes more acute, resource conflicts and regional instability will become more common, further straining U.S. defense spending and military capabilities.

- **ECONOMIC STABILITY:** Our national addiction to fossil energy undermines the stability of the economy with direct and indirect costs. According to the National Research Council (NRC), fossil fuel combustion for transportation and electric generation in the United States resulted in hidden costs of $120 billion in 2005, primarily in health damages.[2] There is a strong correlation between oil price shocks and economic recessions. Eleven of our 12 recessions since 1947, including the Great Recession of the last few years, have been preceded by and attributed to oil price shocks.[3]

  Just the hydrological impacts of climate change (precipitation, drought, etc.) will result in net losses of $1.2 trillion to national GDP between 2010 and 2050, according to researchers at Sandia National Laboratory. They estimate the economy could lose 7 million job years and $1.7 trillion in real disposable personal income during that period.[4]

  On the other hand, continued investments in clean energy create jobs. The Center for Climate Strategies and John Hopkins University have identified a portfolio of 23 specific energy and climate policies that, if employed nationwide, would create as many as 2.5 million new jobs and $134 billion in economic activity by 2020 while cutting U.S. greenhouse gas emissions to 27 percent below 1990 levels.[5]

  Energy efficiency and low-carbon energy technologies, aggressively employed, would help the economy reduce waste and costs, an important benefit at a time when all levels of government in the United States are dealing with budget deficits. Energy savings are tax-free income that can increase profits and investment capital for companies and cash flow for consumers. In other words, energy efficiency is a cost-effective, readily available resource for economic stimulus.

2 "Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use", National Research Council, October 2009. The Council examined the hidden costs of U.S. energy use in 2005. Its estimate does not include damages from climate change, harm to ecosystems, the effects of mercury and some other air pollutants, or risks to national security. http://www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12794

3 "The Cost of Protecting Oil in the Persian Gulf", Mark A, Delucchi, Weekly Policy Commentary, Resources for the Future, Nov. 5, 2007, p. 2257

4 "Climate Uncertainty and Implications for U.S. - State-Level Risk Assessment Through 2050", Sandia National Laboratory September 2010.

5 http://www.climatestrategies.us/articles/view/2

- **OPPORTUNITY COSTS:** Emerging global markets for clean energy technology and services are not waiting on the United States. Bloomberg New Energy Finance[6] estimates the global market will grow to $500 billion a year by 2020. But with no coherent energy policy, no price on carbon, and no stable government subsidies for renewable energy technologies, the United States is falling behind other nations in creating green industries and jobs.[7]

- **FRESH WATER RESOURCES:** Thirty-six states are anticipating water shortages by 2013. As we will detail later in this report, the competition for water affects energy production, agriculture, and urban water availability even without counting the impacts of climate change, and the competition has already begun.

- **ENERGY SECURITY**. In 2005, a study sponsored by the U.S. Department of Energy (DOE) concluded that to avoid major economic dislocation due to peak oil, the United States should begin preparing 10-20 years before the peak occurs.[8] According to the International Energy Agency (IEA), global production of conventional oil peaked in 2006 and production of unconventional oil (for example, oil from shale and tar sands) will peak in 2030.[9] If the IEA is correct, then we should already have begun a deliberate withdrawal from petroleum.

- **CLIMATE DISRUPTION:** International climate scientists have estimated that to avoid catastrophic climate disruption, greenhouse gas emissions from industrial nations should peak and begin to decline by 2015. But the U.S. Energy Information Administration (EIA) predicts that if the United States continues business as usual, our energy-related carbon dioxide emissions will increase 16 percent between 2009 and 2035.[10]

- **PUBLIC HEALTH:** On September 28, 2010, the leaders of 18 national medical organizations and scores of state health organizations wrote to the White House and Congress, predicting that because of climate change "more Americans will be exposed to conditions that can result in illness and death due to respiratory illness, heat- and weather-related stress and disease carried by insects". The most severe impact will be felt by "children, older adults, those with serious health conditions and the most economically disadvantaged."[11]

- **IMMIGRATION:** Atmospheric scientist Michael Oppenheimer of Princeton University estimates that over the next seven decades as many as 7 million residents of Mexico may be forced to immigrate to the United States as a result of climate change and its impact on crop yields and food production. The number of refugees attempting to emigrate north will depend on the severity of climate disruption.[12]

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6 http://bnef.com/Download/UserFiles_File_WhitePapers/BNEF_2010-06-21_valleyofdeath_.pdf

7 In its "G-20 Clean Energy Factbook", Pew Charitable Trusts reports, "There are reasons to be concerned about America's competitive position in the clean energy marketplace. Relative to the size of its economy, the United States' clean energy finance and investments lag behind many of its G-20 partners…Nations seeking to compete effectively for clean energy jobs and manufacturing would do well to evaluate the array of policy mechanisms that can be employed to stimulate clean energy investment. This is especially true for policymakers in the United States, which is at risk of falling further behind its G-20 competitors in the coming years unless it adopts a strong national policy framework to spur more robust clean energy investment." http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Global_warming/G-20%20Report.pdf

8 The researchers – Robert Hirsch, Roger Bezdek and Robert Wendling – stated: "The peaking of world oil production presents the U.S. and the world with an unprecedented risk management problem. As peaking is approached, liquid fuel prices and price volatility will increase dramatically, and, without timely mitigation, the economic, social, and political costs will be unprecedented. Viable mitigation options exist on both the supply and demand sides, but to have substantial impact, they must be initiated more than a decade in advance of peaking."

9 The IEA's estimate of when the production of unconventional oil will peak may be optimistic. The principal constraint on petroleum production from tar sands and oil shale is likely to be their heavy dependence on water and energy and their high carbon content rather than recoverable reserves.

10 "International Energy Outlook 2011: Early Release", U.S. Energy Information Administration at http://www.eia.doe.gov/forecasts/aeo/early_carbonemiss.cfm.

11 See http://www.apha.org/NR/rdonlyres/2405CEFA-854D-4EE0-814E-86C8552A3CBB/0/PHgroupssignonclimatechange92810final.pdf

12 http://www.scientificamerican.com/article.cfm?id=climate-change-may-mean-more-mexican-immigration

- **TERRORISM:** According to Alexander T.J. Lennon of the Center for Strategic and International Studies and Julianne Smith, director of the Center's New American Security Project, "We can no longer afford to think of climate change either as a uni-dimensional challenge, reserved for climatologists, or as a problem in the distant future. Well before glaciers melt or sea levels rise, global climate change will spur instability on a global scale, which will exacerbate many of the traditional national security challenges with which we are grappling today, including terrorism."[13] Their conclusions are supported by findings of the National Intelligence Council[14] and the Military Advisory Board at the Center for Naval Analysis.[15]

As we go down this list, we see a pattern. If climate change is not brought under control, its impacts will undo many of the accomplishments on which President Obama has invested so much political capital these past two years, including control of health care costs, economic stability, and the war against terrorism. In effect, while Congress and the White House are attempting to remodel the house, climate change is a fire burning in the attic.

In setting its agenda for 2011-2012, we encourage the Obama Administration to adopt these objectives:

EMPHASIZE RISK MANAGEMENT: Faced with the implications of climate change, the most intelligent response from all sectors is risk management – in other words, acknowledging climate risks and taking action to minimize them. Although no one can predict the future with absolute certainty, responsible risk management requires that we manage against worst-case scenarios. We need not all agree the experts are correct in their predictions of water shortages, economic instability, and other dangerous climate impacts; we need only recognize that those consequences are possible.

BUILD INTERGOVERNMENTAL COLLABORATION: In the recommendations PCAP provided to the presidential candidates in December 2007, we suggested a "powerful new federal-state-local partnership" to mitigate and adapt to climate change. With Congress's failure to pass a national climate bill and slim prospects for comprehensive national climate legislation anytime soon, intergovernmental collaboration is more important than ever. We suggest the Administration continue looking for opportunities to empower state and local governments – particularly the "early adopters" – to demonstrate the multiple benefits of a clean energy economy.

CONTINUE IMPROVING TRANSPARENCY: In previous reports, PCAP suggested the Administration "make carbon visible." The Administration has made good progress in that direction. One example is the President's executive order on federal environmental leadership (EO 13514[16]), which requires agencies to report their progress regularly on public websites. Another is the Environmental Protection Agency's (EPA) requirement that large sources report their greenhouse gas emissions, which will be posted on a public website. The momentum toward greater carbon transparency should continue so that policy makers, investors and consumers can make more informed decisions.

COUNT FULL COSTS: We recommend that the Administration continue developing and employing procedures to assess the full life-cycle costs of its investments and public policy options. Again, EO 13514 offers an example of progress: It requires agencies to prioritize their efforts to improve their energy and environmental performance based on "full accounting of both economic and social benefits and costs". Full cost accounting and life-cycle cost/benefit analysis should become the standard for judging how taxpayer funds, including energy subsidies, are invested. The Administration can make further progress on this goal by sponsoring ongoing research to quantify what have been externalized economic, environmental, and social costs.

13 http://www.nytimes.com/2007/12/03/opinion/03iht-edsmith.1.8569518.html?_r=1

14 http://www.sciencedaily.com/releases/2008/06/080625090302.htm

15 http://securityandclimate.cna.org/report/

16 http://edocket.access.gpo.gov/2009/pdf/E9-24518.pdf

GET PRICES RIGHT: The federal government subsidizes carbon emissions in myriad ways, leading to considerable distortions of price signals in the marketplace. We encourage the President to push more aggressively to phase out consumer and producer subsidies for carbon-based fuels in the United States and in other nations. In general, the money saved from reducing fossil energy subsidies should be reinvested in building the clean energy economy. While pressure will be strong to use those revenues to reduce the national debt, rapidly reducing the carbon debt is equally if not more important to the nation's future. Today's emissions will result in enormous losses of security and treasure for our children.

TAKE THE LONG VIEW: The United States does not have a national energy strategy, a national water strategy, a national climate strategy, or long-term strategies for agriculture and transportation. PCAP has recommended that the Administration work with regional, state, local, and tribal officials to create a roadmap to a clean energy economy, complete with goals, milestones, and performance measures for phasing out carbon-intensive materials and resources, and phasing in their low-carbon replacements. We also have recommended that the Administration work with stakeholders to create a 50-year agriculture strategy, reviewed and reauthorized every five years. National roadmaps would increase the likelihood that policy makers and stakeholders will move in a coherent direction. Congress is scheduled to reauthorize U.S. transportation policy this year and farm policy in 2012 – two good opportunities to reinvent those programs for a low-carbon, sustainable future.

LOOK FOR GAME-CHANGERS: An overriding question about the Administration's priorities for the next two years is this: What can the Executive Branch do under its current authorities to make game-changing progress toward a clean energy economy? Legislation to price carbon was going to be that kind of game-changer. Allowed to proceed, EPA's regulation of greenhouse gas emissions will become a powerful catalyst for change. We suggest that the Administration continue looking for other transformational changes it can facilitate under current law.

PREVENT SLIPPAGE: Some members of Congress are backing efforts to repeal or postpone EPA's authority to regulate greenhouse gas emissions. While the President showed willingness to compromise with conservatives on tax issues in the final days of the 111th Congress, we urge him to hold fast on environmental protection. Because many environmental impacts now are global, others are irreversible and others will result in significant damage to the economy and public safety, there should be no rollback of the nation's landmark environmental laws or the authorities those laws have given to the Executive Branch.

ENCOURAGE SUSTAINABLE INVESTMENT: While Washington will be reluctant to talk about it, a new federal stimulus package may become necessary – for example, to help state and local governments deal with their deficits and avoid default on municipal bonds. Any additional stimulus funds should be invested in ways that facilitate our transition to a clean energy economy. When possible, stimulus funds should be used to create sustainable financing mechanisms for the transition – for example, revolving loan programs.

BE SHOVEL-READY: There will come a time when escalating climate impacts force even the most recalcitrant political leaders to acknowledge we must mitigate and adapt to global climate change. Some of those impacts already are evident in the record-setting, aberrant, and destructive weather patterns we are experiencing in the United States and other parts of the world. When Congress finally accepts its responsibility to deal with climate change head-on, we urge the President to put his full weight behind legislation to cap U.S. greenhouse gas emissions, put a price on carbon, establish a national renewable energy portfolio standard, and take other decisive action to expedite the nation's withdrawal from carbon-based fuels. In the meantime, we urge the President's chief science advisor, John Holdren, and his colleagues in the U.S. Global Change Research Program to become much more visible and proactive in educating the public about the connection between climate change and the extreme weather events we are experiencing today.

Serving in the federal government is often compared to endless "fire drills" – the unrelenting daily pressure to respond to crises that can, and often do, dominate an Administration's agenda. But more than any other current issue except a collapse of the economy, the climate-induced collapse of a benign biosphere requires crisis prevention as well as crisis response.

The challenge facing President Obama and other government leaders over the next two years will be to close the enormous gap between what scientists say we must do and what politicians think we can do. With or without the help of Congress, Barack Obama can become the leader who mobilized the American people to confront the biggest global and intergenerational issue of our time.

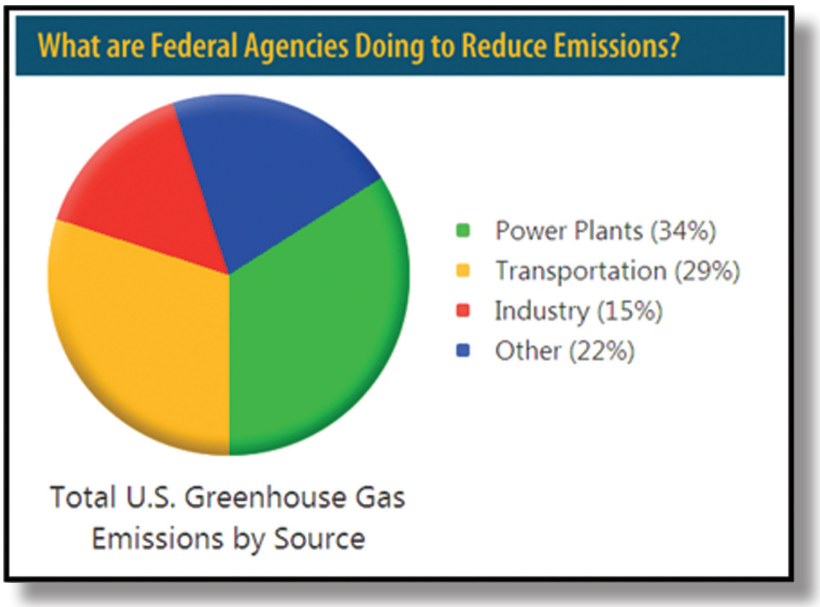

Figure 1: The World Resources Institute has created a web portal to track the Obama Administration's authorities and actions related to climate change: http://www.wri.org/stories/2010/12/keeping-track-federal-agencies-actions-reduce-us-greenhouse-gas-emissions. *The Center for Climate Strategies tracks state climate profiles and policies:* http://www.climatestrategies.us/policy_tracker/state/index

THE PRESIDENT AS CONVENER

President Obama has brought government and private-sector experts together to recommend policies on several issues, from ocean ecology and climate adaptation to reducing federal debt. But there is much more potential for the President to convene America's best experts to solve its most difficult problems.

It is remarkable that in a time of formidable economic, environmental, and energy challenges, the most innovative nation on Earth has few long-term plans to guide its investments and policies. By "plans" we don't mean aspirations; we mean roadmaps that identify what the United States needs to achieve by 2030 and 2050 and that plot the policies, technologies, and information we need to get there. We mean specific goals, milestones, and performance measures on what we must accomplish to ensure America's competitiveness, security, and sustainable prosperity in the 21st century. We don't have that now.

For example, we have no national plan to conserve our fresh water supplies or to mediate conflicts over who uses them. In fact, we don't even know enough about them. The federal government has not conducted a "water census" since 1978. Until Lisa Jackson was appointed to head the EPA in 2009, the agency apparently had never done statistically valid assessments of the condition of our lakes, rivers, wetlands, and estuaries.

Our soils are critical not only to the production of food and fiber, but also to carbon sequestration and the production of renewable energy crops. Nevertheless, they are being depleted by agricultural practices we encourage with federal incentives. One study published in 2006 – said to be the most extensive analysis of U.S. soil fertility ever undertaken – found that 41 percent of the croplands tested needed phosphorous supplements and 39 percent needed potassium supplement to sustain profits from major crops.[17] Weather extremes and shifting isotherms – including intense rainfalls and severe drought, sometimes occurring in the same regions – will affect the productivity of our farmland. But there is no long-term plan for restoring and protecting America's soils by adjusting our agricultural practices to deal with these new realities.

The National Intelligence Council is one of several groups of security and military experts who advise us that global climate change will destabilize some of the most volatile regions of the world, with implications for terrorism, national security and defense spending, not to mention the sacrifices of the young Americans who will be deployed to the world's trouble spots. President Obama has proposed that the United States cut its greenhouse gas emissions 3 percent by 2020 compared to 1990 levels, leading to a reduction of around 80 percent by mid-century. Even this modest goal will require a profound transformation of the American economy, but we have no national roadmap to guide us.

Half of all Americans live close to the nation's coasts. Power plants, petroleum refineries, chemical plants and critical infrastructure are located in coastal areas. As we saw in Hurricane Katrina in 2005 and the BP oil spill five years later, ocean and coastal degradation are "threat multipliers" for major American cities, facilities and industries. Experts tell us that oceans worldwide are undergoing changes that undermine their health, a result of global climate change and human activity. But we in the United States have no long-term plan for reducing our impact on ocean ecology or for protecting our coastlines from climate impacts such as sea-level rise and more intense hurricanes.

17 The Mosaic Company "Back to Basics" web site. http://www.back-to-basics.net/soil_test_summary.htm The company's results were based on tests of 3.4 million acres of cropland in the United States, conducted by 70 test laboratories in the 2005 crop year.

The United States' dependence on imported petroleum has long been a threat to national security and a trigger for war. As former U.S. Senator Gary Hart points out, we do have one national energy policy that has been consistent for generations: We send our sons and daughters off to kill and be killed in foreign lands to guarantee our supply of oil. Since the oil shortages of the 1970s, several presidents have set aspirational goals for reducing petroleum imports. But apart from warfare and interference in the politics of other regions, the closest we come to a coherent national energy strategy are the changing goals of different congresses and administrations, shaped by entrenched special interests. We still subsidize fossil energy at much higher levels than solar and wind energy. While some fossil subsidies have been in place for generations, Congress has been unwilling to support renewable alternatives for more than a few years at a time, putting our most valuable energy industries on a costly cycle of boom and bust.

For some, the idea of national planning evokes comparisons to the five-year plans in communist societies. But the fact that the United States is a democracy does not mean we cannot have plans. Democracy means our plans should be market-based and built from the bottom up as well as the top down. To survive changes of leadership, national roadmaps must be built with broad, bipartisan participation. To be effective, they must be informed by America's best minds. To win support from those with conservative views about the role of the federal government, they must rely significantly on state and local governments and the private sector. And to be useful, experts and leaders must be convened not to debate what is no longer debatable, but to create solutions.

National roadmaps can guide the research of our National Laboratories and universities; the content of the President's annual budget requests; private investment; complementary actions by all levels of government; and the policies made by Congress as it periodically reauthorizes major national programs like those contained in the Farm Bill, the Surface Transportation Policy Act and the National Flood Insurance Program, to name a few.

If there is a common denominator in this final PCAP report, it is the recommendation that President Obama become the Great Convener over the next two years, engaging stakeholders to create ideas big enough to match the size of our challenges and durable enough to last.

We recommend that the President:

1. LAUNCH A TWO-YEAR NATIONAL ROAD-MAPPING INITIATIVE.

We encourage the President to call upon the eloquence and oratorical skill he exhibited during the 2008 campaign and rally the American public to envision and help identify the paths to a prosperous 21st century economy. We offer some specific suggestions for road-mapping elsewhere in this report; the idea here is to make road-mapping more than a one-off exercise or the exclusive province of academic, industry, and government experts. Modern technology permits national town meetings and other methods for engaging the public in designing the nation's future – input that might then be processed by expert groups into strategies and action plans.[18]

18 A useful model for presenting complex data is the Planetary Boundaries report published in 2010 by the Stockholm Resilience Center. An international team of experts identified nine ecological thresholds civilization cannot safely cross and used graphics to illustrate how close we are to crossing each.

2. REQUEST THAT THE FEDERAL COMMUNICATIONS COMMISSION REINSTATE THE FAIRNESS DOCTRINE.

National discourse today is tainted – and in some cases poisoned – by unbalanced ideological use of the public airwaves. The difference between news, opinion, and entertainment has become blurred. So has the line between fact and fiction. Commentators from the political extremes broadcast one-sided, inflammatory and often inaccurate statements that cannot be challenged in real time, resulting in misinformation and unnecessary polarity in public opinion. To improve and better inform public discourse, it is time for the Federal Communications Commission (FCC) to reinstate the Fairness Doctrine.

The Fairness Doctrine was introduced in 1949 as an FCC policy. It required holders of broadcast licenses to present controversial issues in a manner the FCC judged to be honest, equitable, and balanced. Twenty years later, the U.S. Supreme Court ruled the FCC has a right, but not an obligation, to enforce the Doctrine. The FCC abolished the Doctrine in 1987. Congress attempted to revive it in legislation, but President Ronald Reagan vetoed the bill.

Two common arguments against the Doctrine are that it violates the First Amendment by restricting free speech and that in this day of many cable television stations, a wide diversity of views already is available to the public. But the Fairness Doctrine would encourage rather than suppress public discourse by exposing the citizenry to a wider array of viewpoints. As for the evolution of cable television, few viewers or listeners surf the crowded array of stations to hunt down a diversity of viewpoints. Instead, the public is vulnerable to the "first impression" effect in which the first statement they hear, however inaccurate, is virtually impossible to correct if the audience is not given immediate exposure to contrary information and points of view. President Obama reportedly has opposed reinstatement of the Doctrine. In the interest of informed public discourse, we recommend he ask the FCC to bring it back.

IMPROVING TRANSPARENCY

President Obama has said, "Transparency and the rule of law will be the touchstones of this Presidency." In regard to climate change and environment, the Executive Branch has taken several steps in that direction over the past two years. In January 2010, the Securities and Exchange Commission (SEC) issued guidance on how publicly traded companies should begin reporting carbon risks. The EPA implemented a new regulation that requires major sources of greenhouse gas emissions to monitor and report them. In mid-2010, the Federal Trade Commission (FTC) issued updated "green guides" that will lead to more honest and transparent environmental claims for consumer products. EPA and the Department of Transportation (DOT) have proposed new efficiency labels that show carbon emissions as well as miles per gallon on new vehicles.

PCAP recommends the Administration do the following to further improve transparency in public programs and policies:

1. **DELIVER STATE OF THE NATION'S ECOSYSTEMS ADDRESSES.**

   Elsewhere in this report, we recommend that the Administration produce a "State of the Nation's Ecosystems" report every two years with updated information on the condition of America's air, water, ocean resources, soils, forests, wildlife habitat, biological diversity, forests, and environmental impacts on public health.[19] We recommend that the President release this report on Earth Day every two years, along with an address to the nation on the state of its ecological health.

2. **FINALIZE THE REQUIREMENT FOR CLIMATE IMPACT ASSESSMENTS UNDER NEPA.**

   In February 2010, the Council on Environmental Quality (CEQ) issued draft guidance to agencies on when and how they should evaluate the greenhouse gas emissions and climate impacts of proposed federal actions. We encourage CEQ to finalize the guidance as soon as possible.

   The guidance did not cover climate impact analyses of land use or management actions by the federal government. CEQ said it excluded land management because "changes in land use or land management strategies, lack any established Federal protocol for assessing their effect on atmospheric carbon release and sequestration at a landscape scale."

   The federal government owns 650 million acres of land in the United States – nearly a third of the nation's land area – and its actions affect land use on private as well as public lands. Soils and forests are important to the sequestration of carbon. We encourage CEQ to work with the Departments of Interior (DOI) and Agriculture (USDA) on methods to assess the climate impacts of government actions related to land use and management.

19 For an example, see EPA's "Report on the Environment: Highlights of National Trends", 2008.

3. PROVIDE GUIDANCE TO STATES ON ASSESSING THE CLIMATE IMPACTS OF PERMITTED ACTIVITIES.

By one estimate, two-thirds of the nation's greenhouse gas emissions can be attributed to facilities issued permits by government – federal, state, or local.[20] We encourage EPA and CEQ to explore whether:

- EPA's regulation of greenhouse gas emissions will cover emissions from all major sources permitted by state and local governments;
- CEQ's guidance to federal agencies on climate impact assessments under NEPA would be useful to state and local governments in helping them determine when and how they might require similar impact assessments for activities they fund permit or regulate;
- Additional technical assistance from CEQ and EPA on climate impact assessments would be useful for state and local governments.

4. IMPROVE TOOLS TO ASSESS THE FULL LIFE-CYCLE COSTS OF ENERGY TECHNOLOGIES AND POLICIES.

As we note elsewhere in this report, Executive Order 13514 directs federal agencies to "prioritize actions based on a full accounting of both economic and social benefits and costs". The Department of Defense reportedly is moving beyond first-cost and life-cycle accounting in purely monetary terms to consider factors such as national security, the safety and effectiveness of soldiers, and the value of military-to-civilian technology transfer.[21]

The more common practice – one-dimensional evaluation of a resource or policy – results in problem switching rather than problem solving. For example, proponents of liquid fuels from coal or oil from shale deposits argue these fuels will help reduce America's dependence on foreign petroleum. However, each of these unconventional fuels is energy-, water-, and carbon-intensive. In exchange for some reduction in oil imports, they will strain water resources and contribute to the nation's greenhouse gas emissions. A more holistic assessment of costs and benefits would lead to policies that solve more problems than they create.

We recommend that DOE and its national laboratories develop and continuously improve tools that allow agencies to quantify and include important non-monetary factors in decision-making.[22] In addition, we suggest that DOE develop a "national subsidy guideline" that establishes the minimum net energy, water, carbon, and economic benefits an energy resource or technology should achieve to be considered for taxpayer subsidies.

5. REQUIRE CARBON IMPACT ASSESSMENTS IN AGENCY BUDGET PROPOSALS.

Each year, agencies submit their budget requests to the Office of Management and Budget, which synthesizes them into the President's annual budget proposal to Congress. To make the climate impacts of federal programs more transparent, we urge the OMB to require agencies to estimate the effect of their budget proposals on greenhouse gas emissions.

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20 E-mail correspondence from Dr. Mark Trexler, Director, Climate Markets and Strategies, DNV Sustainability and Innovation.

21 "The U.S. Department of Defense; Valuing Energy Security", Journal of Energy Security, June 18, 2009, by Drexel Kleber, Director, Strategic Operations Power Surety Task Force, U.S. Department of Defense. See http://www.ensec.org/index.php?option=com_content&view=article&id=196:the-us-department-of-defense-valuing-energy-security&catid=96:content&Itemid=345

22 In 2007, PCAP commissioned Earthinc to develop a full-cost calculator to quantify the environmental pressures of policy options. The beta version can be found at http://www.earthinc.net/pcap/index.php.

6. CLARIFY GREENHOUSE GAS REDUCTION GOALS.

The Administration contributes to public confusion by expressing its greenhouse gas reduction goals in several different ways. For example, the President has endorsed the goal of cutting greenhouse gas emissions 17 percent by 2020, compared to the nation's emissions in 2005. The international community typically expresses its goals by comparing them to emission levels in 1990. With 1990 as the base year, the President's goal is a reduction of about 3 percent rather than 17 percent. Adding to the confusion, the White Houses announced early in 2010 that federal agencies plan to reduce their emissions 28 percent by 2020. That goal is based on emission levels in yet another year, 2008.

Also confusing in the national and international discourse about climate change is how we describe the emissions we want to cut. For example, reduction goals are sometimes expressed in terms of carbon dioxide (CO_2) emissions and sometimes for "carbon equivalent emissions" (CO_{2e}), the major greenhouse gases based on their global warming potential. Another distinction is gross verus net emissions (the amount of greenhouse gases we put into the atmosphere after we deduct emissions absorbed by oceans, forests and soils, or stored with technologies such as carbon capture and sequestration). We encourage the Administration to adopt a consistent way of expressing the nation's greenhouse gas reduction goals, preferably in conformity with the metrics most commonly used by the international community.

7. COUNT GREENHOUSE GASES EMBEDDED IN IMPORTS.

To more accurately measure the greenhouse gas emissions for which the United States is directly or indirectly responsible, the federal government should count not only the emissions we produce internally, but also the emissions embedded in the goods and resources we import from other nations. By one estimate, CO_2 emission embedded in U.S. imports grew more than 800 percent between 1987 and 2004.[23]

The shift of manufacturing from OECD countries to their trading partners in the developing world produces "carbon leakage". While very important, the carbon content of international trade and its related issues – including border taxes, their legality under international trade agreements, and whether consumption-based emission targets are preferable to production-based targets – are beyond the scope of this report. However, policy makers and the American people would have more accurate feedback on our national carbon footprint if the Administration estimated and reported the CO_{2e} embedded in imported goods and resources.

23 "Greenhouse gas emissions: A Tale of Two Countries," Bill Chameides, Dean of the Nicholas School of the Environment at Duke University. See http://www.nicholas.duke.edu/thegreengrok/china-vs-us-ghg.

On October 5, 2009, President Obama set the stage for the federal government to become the nation's biggest customer for green products and services. In Executive Order 13514, he directed federal agencies to use their purchasing power to "foster markets for sustainable technologies and environmentally preferable materials, products and services". He ordered agencies to save water, increase energy efficiency, use more renewable energy and less fossil fuels, reduce greenhouse gas emissions and build high-performance buildings. To green the federal supply chain, the President directed that 95 percent of all new purchases must contain recycled content and be energy efficient, water-efficient, bio-based, non-toxic and environmentally preferable.[24]

If we were to pick one organization with the greatest potential to catalyze America's transition to a clean energy economy, it would be the federal government. It is the nation's biggest energy consumer. It owns or leases 8,600 buildings consisting of 354 million square feet in 2,200 communities. It oversees a fleet of 217,000 non-military federal vehicles. The General Services Administration (GSA) – the government's principal purchasing agent – procures around $66 billion of goods and services every year. As a consumer, the federal government has the clout to shift the American marketplace in the direction of sustainability.

If there is one organization *within* the government with the power to facilitate this shift, it is the Department of Defense (DOD). It accounts for 80 percent of the government's energy consumption and more than 1 percent of total national oil demand. It occupies more than 545,000 facilities at 536 installations. It has a tradition of developing technologies that have transformed the lives of the American people, from the Internet to the satellites that enable everything from TV sets to cell phones and GPSs.

Between Fiscal Years 1997 and 2007, DOD fuel expenditures increased 373 percent (2009 dollars). In 2009, Congress required DOD to begin counting the "fully burdened" cost of fuel in its force planning process and acquisitions[25] – in other words, not just the cost of the fuel itself, but also the cost of moving it to its point of use.[26] DOD has considered using carbon-based alternatives to petroleum, such as liquids from coal, oil shale and tar sands. But recognizing the environmental liabilities of those options, Congress wisely prohibited federal agencies from purchasing alternative carbon-based fuels when their life-cycle greenhouse gas emissions exceed those from conventional petroleum fuels.

Over the past several years, the commitment to low-carbon energy and energy efficiency has become part of military doctrine, not only because moving fuel to front-line forces costs a lot of money, but also because it costs lives and reduces military effectiveness. The supply lines that delivered fuel to U.S. forces in Iraq, for example, became the principal target for improvised explosive devices that turned roads into killing fields. From the broader

24 http://www.whitehouse.gov/assets/documents/2009fedleader_eo_rel.pdf

25 Other hidden logistics costs associated with fuel have been air-to-air refueling of aircraft and general ground transport of fuels. Counting the "fully burdened" costs of fuel in planning and procurement was one of the recommendations by the Alliance to Save Energy in a white paper commissioned by PCAP in 2008. See http://www.climateactionproject.com/docs/PCAP_Final_FEMP_Chapter_4-18-08.pdf, p. 55.

26 The Duncan Hunter National Defense Authorization Act for FY 2009 (PL 110-417)

perspective of national security and the capacity of U.S. forces, past and present military leaders now recognize that growing competition for fossil fuels and the impacts of climate change will destabilize some of the most volatile regions of the world.[27]

The rationale for DOD's commitment to clean fuels and green technologies has been described in documents such as the Defense Science Board's report "More Fight Less Fuel", which found that the military's dependence on fossil energy had grown to be 16 times more intensive than it was during World War II. The national security implications of climate change are reflected in the 2010 Quadrennial Defense Review and the Annual Threat Assessment from the Director of National Intelligence. The Center for a New American Security has proposed that DOD operate all its systems on non-petroleum fuels by 2040.[28] But in view of peak oil, increasing international competition for petroleum and crude oil prices projected to reach $200 per barrel by 2035,[29] DOD may want to accelerate that timetable.

DOD is becoming America's Jolly Green Giant. Its current goals are to obtain 25 percent of its energy from renewable resources by 2025; to fuel half of the Navy's facilities and ships with non-fossil resources by 2020; to develop a "green" carrier strike group for the Navy, run completely on alternative fuels by 2016; and to fuel Air Force jets with domestically produced renewable resources by 2030.[30] Among other innovations, the military has issued insulated tents to reduce the use of diesel fuel in generators that run air conditioners in the field; the Marines have deployed solar panels, solar-powered equipment and solar water purification systems to units in Afghanistan; and the Navy is researching the possibility of producing energy from sea water.[31] The Naval Air Weapons Station at China Lake, CA., the service's largest base, is powered solely by geothermal resources. It produces 270 megawatts of electricity, provides an average of 1.4 million megawatt hours of power annually to the California grid (enough to power 180,000 homes), and saves tens of millions of dollars annually on the Navy's energy bills.

PCAP recommends that the Administration:

1. **STAY THE COURSE ON EO 13514.**

   History shows that not all Executive Orders achieve their intended results. Bureaucratic blockages, time, money, and political will get in the way. EO 13514 reduces that risk by requiring agencies to publicly report their progress on the President's sustainability goals. We urge the President to ensure the General Services Administration, the Department of Defense and other agencies have adequate staff and budget to fully implement the excutive order. We encourage agencies to report annually to the Steering Committee on Federal Sustainability on barriers they have encountered while implementing the executive order, with the objective of seeking administrative or legislative remedies.

27 The impact of climate change on U.S. military capabilities extends beyond peacekeeping and war-fighting. In 2008 and 2009, the military had 120 requests to help victims of natural disasters ranging from hurricanes to wildfires and U.S. forces were asked to assist in the aftermath of 54 natural disasters overseas.

28 "Fueling the Future Force: Preparing the Department of Defense for a Post-Petroleum Era", Christine Parthemore and John Nagl, Center for a New American Security, p. 3. http://www.cnas.org/files/documents/publications/CNAS_Fueling%20the%20Future%20Force_NaglParthemore.pdf

29 $200 per barrel will be the nominal cost of oil in 2035, according to the Energy Information Administration's reference case. See "AEO2011 Early Release Overview", p. 3 at http://www.eia.gov/forecasts/aeo/pdf/0383er%282011%29.pdf

30 Military jets are the biggest consumers of energy in the federal government, using some 2.5 billion gallons of fuel each year. By 2016, the Air Force wants its aircraft to fly on a 50-50 blend of jet and synthetic fuels that are cost competitive with petroleum and emit less greenhouse gases. See http://www.nationaldefensemagazine.org/archive/2011/January/Pages/AirForceTellsBiofuelsIndustrytoBringIt.aspx

31 http://www.defense.gov/news/newsarticle.aspx?id=56265

If there is any question about full congressional support for EO 13514, the President can argue it is the ultimate market-based strategy for energy security. Green procurement can help create sufficiently large and sustained markets for businesses to invest in the plant and equipment to make green products. The goal is to achieve economies of manufacturing scale – in other words, to bring the price of products down as more of them are made. Economies of scale would bring the price of green products down for government and consumers.

2. COLLABORATE WITH STATE AND LOCAL GOVERNMENT PURCHASING.

The power of the government's purse can be expanded if local, state and federal agencies find ways to collaborate, for example by bundling their orders for green goods and services. According to the Consortium for Energy Efficiency (CEE), the 50 state governments and approximately 3,043 county, 19,279 city, and 16,656 town governments in the United States spend $12 billion per year on energy bills and another $50-70 billion per year on energy-related products. Aggregated purchases by government at all levels could be a significant force in establishing large and sustained markets for green industries.

GSA operates a Cooperative Purchasing Program (CPP) approved by Congress, principally for information technology products. The program allows state and local government agencies to purchase products from the Federal Supply Schedule, especially when products aren't available locally. We encourage the Administration to review the performance of the CPP and, if warranted, seek congressional approval to expand it to other goods and services. In addition, GSA should consider streamlining the process for qualified small and medium businesses that manufacture, sell or service green products to get on the Federal Supply Schedule.

3. CODIFY KEY ELEMENTS OF ADMINISTRATIVE ACTIONS.

While executive orders, directives and policies are important tools for presidents, they are impermanent. They can be amended or rescinded by future presidents with the stroke of a pen. We encourage the Administration to codify the key requirements of EO 13514 and other progressive administrative policies in regulation and legislation.

4. HELP STATE AND LOCAL GOVERNMENTS ADOPT THE KEY FEATURES OF EO 13514.

In the past, several states adopted policies similar to those created by the Federal Energy Management Program (FEMP). We encourage the Administration's Partnership for Sustainable Communities and the Department of Energy's State Energy Program to help state and local governments use EO 13514 as a model for their own policies on resource efficiency and greenhouse gas reductions by government agencies, including transparency, full-cost accounting, goal-setting, and performance measurement.

5. MAKE DOD'S SUSTAINABLE ENERGY GOALS A HIGH BUDGET PRIORITY.

The Administration should make clear to Congress and the American public that DOD's efforts to develop and deploy energy efficiency and low-carbon energy resources is a national security priority that deserves full funding, even as the President and Congress look for ways to reduce federal spending.

6. SUPPORT DOD'S EFFORTS TO CONSIDER NON-ECONOMIC COSTS AND BENEFITS IN PLANNING AND BUDGETING.

DOD reportedly is developing new business models that consider the indirect benefits of sustainability. According to one official, "Expenditures on energy conservation measures are being viewed as 'investments' with long-term rewards and dividends which are paid in commodities beyond money – national security, soldier lives, improved manpower utilization, military to civilian technology transfers, and increased foreign policy options for elected officials, to name a few."[32] We encourage the President to strongly support this holistic approach to military planning and budgeting, and to mobilize private and public experts to better quantify the value of these nonmonetary "commodities".

7. EXPLORE THE INTERFACE BETWEEN MILITARY AND CIVILIAN USES OF SUSTAINABLE TECHNOLOGIES.

At present, the military's fixed installations are almost completely dependent on the commercial power grid, making them vulnerable to outages. One of DOD's goals, called "islanding", is to ensure reliable power at installations even when the commercial grid goes down. The objective is not always to go off-grid; it's to enable installations to disconnect from the grid when necessary.

Military installations are the major – sometimes the largest – electric consumer in many metropolitan areas. As more installations begin producing their own energy, we encourage DOD to collaborate with civilian communities and electric utilities to provide them with surplus electricity when it is cost-effective and does not jeopardize the reliability of base power. In cases where base electricity is produced off-grid, power sharing with civilian communities could increase the self-sufficiency of both parties while reducing the strain on the commercial power grid.

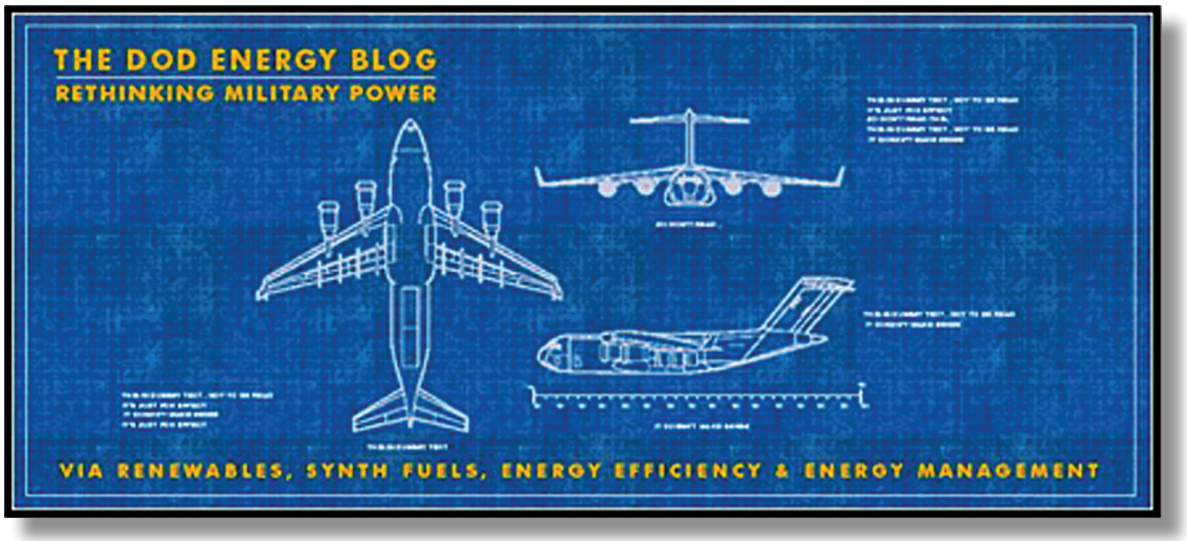

Figure 2: Energy efficiency and renewable energy are becoming a critical part of the U.S. military's planning. Source: U.S. Department of Defense

32 Kleber, xx

The Obama Administration has made some historic changes to national policy in the effort to build a more sustainable energy economy. The Administration has raised fuel-efficiency standards for automobiles and light trucks for the first time since the Reagan Administration. It has begun the process of creating the first-ever fuel efficiency standards for heavy trucks. It championed the largest energy bill in the nation's history as part of the American Recovery and Reinvestment Act. That Act alone allocated more than $80 billion for investments in sustainable energy projects and technologies. In his 2011 budget, the President proposed the elimination of 12 tax breaks for oil, gas, and coal companies, totaling about $3.6 billion annually[33]. He proposed and won the G-20's approval of a plan to phase out fossil energy subsidies internationally.

PCAP recommends that the Administration take the following additional actions in 2011-2012:

1. MAKE MARKET DISTORTIONS TRANSPARENT.

A first step in reforming distortions in energy markets is accurate information on what and where they are. At present, there is a wide variety of definitions for energy and carbon subsidies, resulting in a confusing array of estimates on their costs. Many subsidies are buried deep within the tax code or within the regulations that implement federal programs and policies.

At the direction of Congress, the National Academy of Sciences (NAS) is conducting a carbon audit of the tax code to identify and estimate the impacts of federal income tax provisions that result in greenhouse gas emissions.[34]

PCAP recommends that the Administration ask the NAS to develop a uniform definition of fossil energy subsidies and a uniform method for calculating them as an outgrowth of its audit. The definition should include consumer and producer subsidies, direct expenditures, tax expenditures, federal research and development spending, military expenditures, loans and loan guarantees, preferential treatment of certain customers by the Power Marketing Administrations, and other financial and technical support provided by the federal government and states to energy industries. The methodology should allow policy makers to count direct and indirect costs to taxpayers as well as quantifiable impacts on public health, climate change, ecosystem services, and other environmental and social costs.[35]

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33 Other investments the President's 2011 budget proposed for the "Clean Energy Economy" are itemized at http://www.whitehouse.gov/omb/factsheet_key_clean_energy/.

34 The audit reportedly will identify carbon subsidies beyond those related to fossil energy – for example, home mortgage interest deductions that encourage people to build bigger or multiple homes. In this recommendation, PCAP is focusing on subsidies that inhibit or slow the transition to clean energy.

35 To better quantify "externalities", NAS can draw on the work of the United Nations' TEEB program (The Economics of Ecosystems and Biodiversity), which is consulting with experts from around the world to put a credible monetary value on services that ecosystems provide free but that often are undervalued and degraded by human development. TEEB's leader, Deutsche Bank economist Pavan Sukhdev, points out that two incorrect assumptions have crept into modern economics. The first is that public goods such as clean air and water are less important than individual goods such as consumer products. Second, we have assumed that because they have been free, natural capital such as soils, fresh water and forests are less valuable than industrial capital. If we are to make the transition to a sustainable national and global economy, these assumptions must change in public policy. See http://www.teebweb.org and http://www.time.com/time/magazine/article/0,9171,2034377,00.html.

2. BUILD COALITIONS AND PRESS CONGRESS TO CORRECT PERVERSE INCENTIVES IN ENERGY MARKETS.

As we've noted, taxpayers are subsidizing the fuels that produce the carbon emissions the United States has resolved to reduce in several acts of Congress[36] and under the United Nations Framework Convention on Climate Change, an international treaty signed nearly 20 years ago by President George H.W. Bush. Federal energy subsidies should be reserved for developing and accelerating the market penetration of clean energy technologies.

The Environmental Law Institute estimates taxpayers provided $72 billion in incentives for oil, gas, and coal producers between 2002 and 2008, most in the form of 23 different tax credits.[37] The largest chunk of subsidies consisted of tax breaks for foreign oil production – a tragically ironic priority, given the acknowledged liabilities and external costs of imported petroleum.

By comparison, renewable energy received $29 billion in subsidies, most in the form of temporary tax benefits. Nearly half the support to renewable energy – $17 billion according to the Institute – was dedicated to corn ethanol, a fuel with questionable climate benefits when all of its economic and environmental costs are counted.

PCAP recommends that the Administration:

- Continue pressing Congress and building public support to rapidly phase out perverse energy subsidies and increase federal support for clean energy research, development, and commercialization;[38]
- Define "clean energy" based on full life-cycle costs, including carbon emissions and other direct and indirect costs related not only to consumption of an energy resource, but also to extraction, production, and transportation;
- Champion an uninterrupted 15-year extension of the Treasury Grant Program (Section 1603) for low-carbon renewable energy technologies, apportioned on the basis of their full life-cycle costs and benefits;[39]
- Request that the Government Accountability Office (GAO) analyze whether the elimination of federal subsidies for fossil fuels need increase the U.S. market price of oil, gas, and coal, given the financial resources of those industries.[40]

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36 For examples, see PCAP's inventory of national environmental laws at http://www.climateactionproject.com/docs/Executive_CEES_PCAP_II_Report_Jul_17.pdf, pp. 8-12.

37 "Estimating U.S. Government Subsidies to Energy Sources: 2002-2008", Environmental Law Institute, September 2009. See www.elistore.org/data/products/d19_07.pdf

38 The President may be able to build a diverse coalition to support reform of federal energy subsidies. See "An Energy Tax Policy for the Twenty-First Century," published by the American Enterprise Institute.

39 Section 1603 of the American Recovery and Reinvestment Act created grants to replace tax incentives for renewable energy. Grants are generally regarded as more effective, since tax credits only could be used when a developer had a tax liability. The grants were scheduled to expire at the end of 2010, but were extended for one year in the legislation Congress approved in December 2010 to retain the Bush tax cut. Nearly $2 billion in Section 1603 grants were awarded in 2009; according to financier Madison Dearborn Partners, the grants leveraged nearly $9 billion in new renewable energy investment by the private sector and created 72,000 jobs in the wind and solar industries. However, by extending the program for only one year, Congress continued the short-term boom-bust cycle for renewable energy incentives.

40 Fossil energy industries will characterize subsidy reform as a tax increase that would have to be passed to consumers through higher energy prices, but that is not necessarily true. In a past analysis of proposed reductions in federal fossil industry subsidies, the EIA concluded that energy revenues were so large that the industries could absorb subsidy losses without increasing energy prices. According to the Wall Street Journal, in the second quarter of 2010, ExxonMobil posted income of $7.56 billion, up 91 percent over the same quarter the year before. ConocoPhillips' earnings tripled to $2.5 billion, while Chevron recorded $5.4 billion, also more than triple its earnings in the second quarter of 2009.

- Push for more aggressive phase-out of international fossil energy subsidies, including subsidies for producers as well as consumers. In its latest report on global energy subsidies, the IEA concludes: "Eradicating subsidies to fossil fuels would enhance energy security, reduce emissions of greenhouse gases and air pollution, and bring economic benefits."[41]

3. CREATE A NATIONAL SECURITY SURCHARGE ON IMPORTED PETROLEUM.

The United States imports about two-thirds of the oil it consumes; one in five imported barrels comes from countries the State Department classifies as dangerous or unstable. It is widely acknowledged that some portion of every dollar Americans spend on petroleum, including gasoline, ends up in nations that support terrorist organizations.

Because imported petroleum carries high costs not reflected in its price, oil imports are a very good place to use true-cost accounting. Researchers employ widely diverse methods to calculate the indirect costs of imported oil, leading to equally diverse estimates. For example, some analysts include administrative expenses and salaries at the Department of Defense; the cost of oil wars, most recently in Iraq; the burden of defending the investments of U.S. oil companies in the Middle East; foreign aid to help stabilize regions and nations from which we import; maintenance of the Strategic Petroleum Reserve; salaries and veterans' benefits for Americans who serve in the Middle East; long-term medical treatment and disability payments to veterans who suffer debilitating injuries; and the economic impact of supply disruptions and price volatility, including recessions linked to spikes in oil prices.

PCAP recommends that the President:

- Request that the NAS propose a uniform definition and methodology for calculating the direct and indirect costs of protecting U.S. access to foreign oil;
- Direct the DOD to itemize its budget by region and mission so costs related to protecting foreign oil supplies are more transparent;
- Consider using his authority under the Omnibus Trade and Competitiveness Act of 1988 to establish a gradually escalating National Security Surcharge on imported petroleum.[42] According to the Center of American Progress, a modest fee of $5 per barrel would raise $22 billion annually and increase gasoline prices by only 5 cents per gallon. The funds could be used to partially offset the costs of protecting foreign oil supplies, or for research on low-carbon petroleum substitutes, or financial assistance to localities that develop mass transit and other non-petroleum mobility options, or to extend the Bush tax cut for middle-class Americans when it is scheduled to expire in 2012.[43]

41 The G20 has agreed to phase out fossil energy subsidies in a number of nations, but only consumer subsidies and only in the "medium term". According to the International Energy Agency's latest World Energy Outlook, global consumer subsidies for fossil fuels were $312 billion in 2009, down from $558 billion in 2008. The Global Renewable Fuels Alliance estimates that producer subsidies were another $100 billion in 2009. The IEA's chief economist estimates that despite a dip during the recession, fossil fuel subsidies are on a trajectory to reach $600 billion by 2015. By comparison, the IEA estimates that global subsidies for renewable energy were $57 billion in 2009 and will be $100 billion by 2015.

42 One complication that needs study is whether a surcharge on oil imports is allowed under the General Agreement on Trade and Tariffs (GATT) and other trade agreements. Article XX of GATT may allow a surcharge because of oil's environmental impacts, but it may also require that domestic and foreign oil be treated the same – that a surcharge must also be applied to domestic oil.

43 Several past presidents, including Gerald Ford and Ronald Reagan, either imposed or approved similar fees. For more information, see the article by Daniel Weiss of the Center for American Progress at www.americanprogress.org/issues/2010/10/import_fee.html.

4. ESTABLISH A FLOOR ON THE PRICE OF OIL.

In addition to the boom-bust cycles Congress's inconsistent subsidies create for renewable energy technologies, the price volatility of fossil fuels creates uncertainty for investors. When the price of oil dips, so does the commercial viability of its alternatives. We urge the President to work with Congress to establish a floor on the price of petroleum. In 2008, PCAP proposed a floor of $45 per barrel. Today, a higher floor may be appropriate.

5. CURTAIL COAL EXPORTS.

The United States exported nearly 60 million short tons of coal in 2009 and nearly 40 million short tons in the first half of 2010, according to the Energy Information Administration. Coal is the most carbon-intensive fossil fuel; in effect, we are exporting pollution and helping other nations contribute to global climate change.

We encourage DOE and its national laboratories to analyze the net economic and environmental impacts of aggressively taxing or ending U.S. coal exports, and how the carbon content of coal exports could be calculated given the different types and forms of coal and how it is likely to be used.

Restrictions on coal exports are unlikely to pass the new Congress, but it's a debate that should begin. In the short term, the Administration should include estimates of the carbon content of coal exports in its calculations of the United States' carbon footprint.

6. CREATE A PRESIDENTIAL COUNCIL TO FRAME A ROADMAP TO THE CLEAN ENERGY ECONOMY.

One model is the President's Council on Sustainable Development, a six-year policy exercise convened by the Clinton Administration to gather recommendations of prominent leaders from government, industry, and non-government organizations. The new Council should consist of governors, mayors, and tribal officials who have shown leadership on economic transition; non-government organizations that help localities develop and implement sustainable development programs; clean energy experts from the Department of Energy's national laboratories, the EPA, and other appropriate federal agencies; and progressive leaders from business and industry.

The President would charge the Council with developing the framework of a national transition plan to a clean, low-carbon energy economy, including objectives, milestones, and performance measures that would achieve or exceed the President's goal of an 80 percent reduction in U.S. greenhouse gas emissions by 2050.[44] In November 2010, the President's Council of Advisors on Science and Technology (PCAST) proposed a similar idea to President Obama: a Quadrennial Energy Review containing a "multiyear roadmap" that lays out a "long-term comprehensive energy strategy for the Nation". PCAST said the plans should identify legislation and executive actions for "dramatic reductions in CO_2 emissions" and to "transform the energy system within one or two decades". PCAST proposed that the Administration produce the first plan in 2015. We recommend 2012.

An example of road mapping is a coordinated national effort to create the technological ecology necessary to significantly advance the use of electric vehicles - a key component of a low-carbon economy. In addition to advanced vehicle and battery technologies, the evolution of an electric fleet will require central and distributed renewable electric generation, a smart and resilient national grid, recyclable battery materials, strategic government investment and procurement, and obtaining or finding substitutes for the rare earth minerals currently used in several of the components of an electric fleet and its support structure. The evolution of this ecology is not likely to occur accidentally, and it will take place more smoothly and quickly in a coordinated effort by researchers, investors, industries, and agencies.

44 Examples of roadmaps to low-carbon economies are the UK's national transition plan issued in 2009 and the State of New York's long-term plan to cut its greenhouse gas emissions 80 percent by mid-century, released in draft form in 2010. See http://www.nyclimatechange.us/InterimReport.cfm.

7. CHALLENGE THE AMERICAN PEOPLE TO CREATE THE MOST RESOURCE-EFFICIENT INDUSTRIAL ECONOMY IN THE WORLD BY 2035.

As we've noted, a national energy efficiency retrofit would stimulate the economy by creating the equivalent of tax-free income for all energy consumers and sectors. The American Council for an Energy Efficient Economy estimates the U.S. wastes 87 percent of the energy it consumes. McKinsey & Co. has documented that virtually every sector has "low-hanging" opportunities to improve energy efficiency with a positive return on investment. The co-benefits include pollution prevention, fewer pollution-related health problems, less pressure on the grid, tax savings on government energy consumption, and improved competitiveness in the global marketplace. In addition, energy efficiency can insulate families and businesses from the inevitable rising costs of carbon-intensive, finite energy resources, whether due to carbon pricing, declining supplies, increasing global competition, price manipulation by foreign producers, or all of those factors. PCAP recommends that the President:

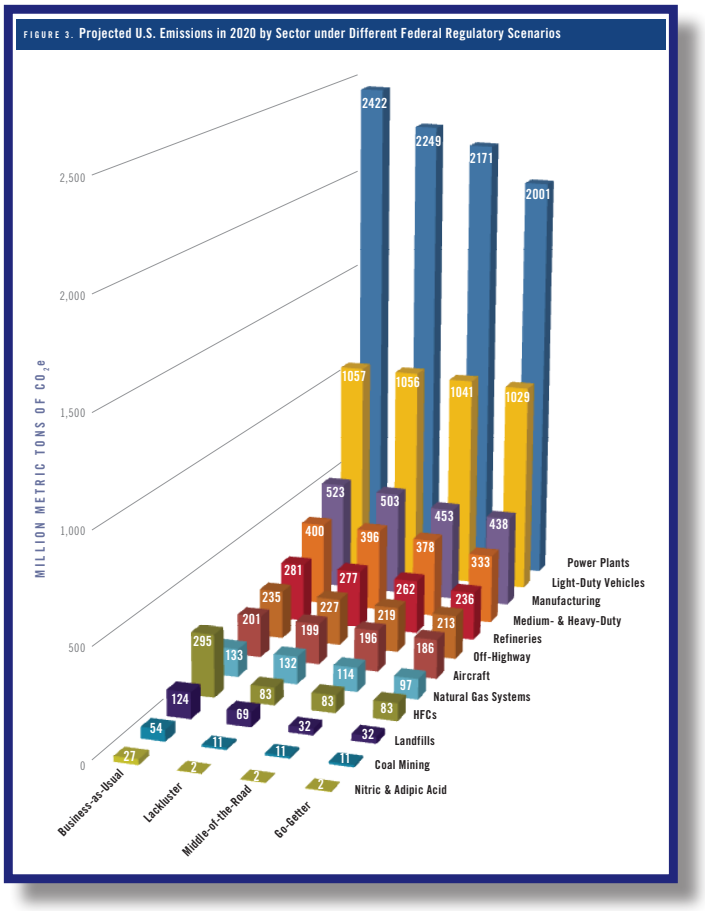

Figure 3: The World Resources Institute estimated in the fall of 2010 that U.S. greenhouse gas emissions would be cut by 14 percent in 2020 compared to 2008, if states and federal agencies aggressively implemented the policies they have announced so far.

- Rally the American people to a national energy efficiency campaign comparable to the efforts U.S. citizens made in World War II;
- Direct federal agencies to promote innovative funding and financing mechanisms in the public and private sectors, including feed-in-tariffs, revolving loans, third party financing, public benefit funds, and carbon trading revenues.[45] Encourage states and communities that still have unobligated stimulus funds to establish self-sustaining loan programs;
- Direct DOE to create a one-stop shop of information and technical assistance for energy consumers, staffed by experts from the National Laboratories; the EPA; the U.S. Small Business Administration; and the Departments of Transportation, Housing and Urban Development, and Commerce.

45 The National Association of State Energy Officials has created the State Energy Loan Fund database (SELF) with information on revolving loan funds operated by U.S. states and territories. NASEO reports there are 60 such funds located in 33 states with more than $930 million in assets. See http://www.naseo.org/resources/selfs/ and http://naseo.org/resources/financing/index.html.

8. USE CURRENT AUTHORITY TO MODERNIZE THE ELECTRIC TRANSMISSION SYSTEM.

Significant renewable energy resources in the United States are stranded by the lack of transmission lines between consumers and the regions where solar and wind are most available. Current law gives the Federal Energy Regulatory Commission authority to issue construction permits for new transmission infrastructure and allows permit holders to petition U.S. District Courts for eminent domain to acquire rights of way.[46] The law also allows Federal Power Administrations to design and operate transmission facilities in areas designated as National Interest Electric Transmission Corridors by the Secretary of Energy. These authorities reportedly have not yet been used by the Administration. We encourage the Administration to use them to reduce congestion, move renewable power to consumers, and help modernize the nation's electric grid, consistent with good environmental practice and using existing rights of way whenever possible.

46 See the Energy Policy Act of 2005 (Title XII, Subtitle B, Sec. 1221-1222), approved with bipartisan support in Congress.

National transportation policy is at a crossroads. It requires major reform if we want a society that provides mobility without significant carbon emissions, traffic congestion, pollution-related public health problems, and economic insecurity due to oil imports. Congress is scheduled to reauthorize surface transportation policy every six years. The current authorization expired in September 2009, but Congress failed to renew it. The reauthorization bill, complicated by an inadequate Highway Trust Fund, is likely to become a difficult issue in Congress in 2011 – a debate about what mobility means in the 21st century, how to fund it, and how to allocate the funds.

The Obama Administration is addressing transportation challenges in a number of ways. The American Recovery and Reinvestment Act (ARRA) allocated $8 billion toward the development of a high-speed rail system. The Administration is implementing historic new standards for vehicle emissions and fuel efficiency with the goal of improving fuel economy 5 percent annually. It is instituting first-ever efficiency standards for heavy trucks. EPA granted a waiver for California to adopt its own clean fuel standards, opening the door for other states to do the same.

The President has ordered a 30 percent reduction in petroleum consumption over the next decade by the government's 600,000 vehicles. He announced that the General Services Administration would double the number of hybrid vehicles in the federal fleet during 2010. Under the TIGGER program (Transit Investments for Greenhouse Gas and Energy Reduction), the Administration is working with transit agencies nationwide to find innovative ways to cut energy consumption and emissions.

With the Obama Administration's historic work on vehicle efficiency and clean fuels, the most important transportation issues facing the nation in 2011 are how to fund a modern mobility infrastructure and how to reduce vehicle miles traveled (VMT) – the number of miles Americans travel every year in private vehicles.[47] Without addressing VMT, today's traffic jams of petroleum-powered cars will be tomorrow's traffic jams of post-petroleum cars. Cities designed for cars rather than mobility will continue requiring major expenditures for vehicle infrastructure and social injustice will remain a transportation issue.[48] The objective of VMT reduction is

47 For additional recommendations on policies that increase mobility while reducing VMT, see the recent report of the Mobility Choice Coalition at http://www.mobilitychoice.org/takingthewheel.pdf.

48 Angela Glover Blackwell of PolicyLink, one of the principal advocates of a socially just transportation system, estimates the poorest fifth of the population spends more than 40 percent of its annual household budgets to own and operate automobiles. She estimates that nearly 25 percent of African-Americans do not have access to cars, compared with 7 percent of non-Hispanic whites. In car-centered cities, those who cannot drive – including the very old, the very young and some people with disabilities – do not have equal access to cultural and government services.

not to undermine the right of the American people to own automobiles; it's to reduce their need, along with the significant expenses – economic, environmental, social, and personal – associated with our unbalanced dependence on private vehicles.[49]

PCAP recommends that the Administration:

1. **ADVOCATE AND BUILD PUBLIC SUPPORT FOR A TRANSFORMATIVE "FLIP" IN THE EMPHASIS OF FEDERAL TRANSPORTATION FUNDING.**

   Current policy provides more financial assistance for building roads than for public transit, transit-oriented development, safe and convenient walking and biking lanes, and programs that promote ridesharing, telecommuting, and alternative work schedules. Our funding priorities should be reversed.

2. **PROVIDE A SUPPORT MECHANISM THAT ENCOURAGES EMPLOYERS TO TAKE ADVANTAGE OF THE EXPANDED QUALIFIED TRANSPORTATION FRINGE COMMUTER BENEFIT.[50]**

   This provision of the tax code offers pre-tax treatment for employer-provided mass transit on a targeted regional basis. Congress increased the cap on monthly benefits from $120 to $230 under ARRA and extended the benefit in the legislation that continued the Bush tax cut. The Bureau of Transportation Statistics should report on the use of the benefit quarterly, by region.

3. **HELP EXISTING COMMUNITIES IMPROVE MOBILITY OPTIONS FOR NON-WORK-RELATED TRAVEL AND ENCOURAGE MIXED-USE DEVELOPMENT IN NEW CONSTRUCTION.**

   While average VMT for all household trips in the United States increased from 12,000 miles per year in 1969 to 21,000 miles per year in 2009, VMT for shopping increased from 929 to 3,400 miles during that period, or 2.2 times faster. VMT dropped for trips to and from work. Federal policy should support transit services for non-work purposes along with non-traditional options such as car-sharing services to reduce VMT related to non-work trips. The Decennial Census and the annual American Community Survey currently ask the question, "By what means did you get to work last year?" The American Community Survey should be designed to also provide data on non-work trips.

4. **EXPAND THE DEFINITION OF "MASS TRANSIT" IN DOT'S REGULATIONS FOR THE FEDERAL TRANSIT PROGRAM AND IN THE COMMUTER BENEFIT PROGRAM.**

   The current definition in the Commuter Benefit program includes vanpools but not car-sharing; the definition in the Federal Transit program focuses on various types of buses and trains. Providing specific support for a broader range of demand-response programs (car-sharing, vanpooling, etc.) would accelerate the reduction of VMT, greenhouse gas emissions, and the cost of living.[51]

49 In its 2009 report – "Paving Our Way: A New Framework for Transportation Finance" – the congressionally established National Surface Transportation Infrastructure Financing Commission reported that automobile travel increased 97 percent and truck travel 106 percent from 1980 to 2006; that traffic congestion in the nation's 437 largest urban areas resulted in $78 billion annually in fuel costs, lost time and vehicle wear; and that Highway Trust Fund revenue projections show a funding gap of nearly $400 billion in 2010-2015 and $2.3 trillion through 2035. See http://FinanceCommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Exec_Summary_Feb09.pdf

50 Section 132(f) of the Internal Revenue Code

51 An example of cost of living impacts: car-sharing participants in Chicago reduce VMT an average of 9,000 miles per participant per year with proportional reductions in greenhouse gas emissions and cost of living savings of 8-10 percent.

5. SUPPORT CREATIVE METHODS TO ACCELERATE TRANSIT INVESTMENTS.

For example, DOT used its credit enhancement authority to enable fast-tracking of a new transit line in Los Angeles. The U.S. Conference of Mayors has endorsed an expansion of innovative tools so that regional transit programs that might take 30 years to build can be accomplished in a decade or less. DOT should continue innovating within its current authority to facilitate and speed projects that achieve large reductions in greenhouse gas emissions from the transportation sector.

6. MAKE WIDER USE OF THE *HOUSING AND TRANSPORTATION AFFORDABILITY INDEX*[52] AS A TOOL FOR CONSUMERS, DEVELOPERS, AND PUBLIC OFFICIALS TO CONSIDER TRANSPORTATION COSTS WHEN MAKING HOUSING AND PLANNING DECISIONS.[53]

The index has been adopted by Department of Housing and Urban Development (HUD) Secretary Shaun Donovan as a basis for screening competitive grant applications, and by DOT Secretary Ray LaHood as a basis for awarding grants for innovative transportation initiatives. Both Secretaries and EPA Administrator Lisa Jackson have made use of the index one of six core principles for achieving sustainability and livability. We encourage other federal statistical agencies such as the Bureau of Labor Statistics (BLS) to use the index to provide finer-grained, spatial data on travel demand, VMT, and associated household expenditures.

7. REVISE THE OFFICIAL MEASURE OF POVERTY.

The Census Bureau, BLS, and the Bureau of Economic Analysis measure poverty based on the cost of food, an artifact of the 1930s when food expenditures were the largest fraction of household budgets. The costs of housing, transportation, and energy should be included in measuring poverty. The Housing and Transportation Affordability Index should be used to make these data available at local scale.

8. TO PROMOTE SMART GROWTH, INCREASE RESOURCES AVAILABLE TO MUNICIPALITIES THROUGH THE PARTNERSHIP FOR SUSTAINABLE COMMUNITIES.

As the Administration expands its support for place-based initiatives such as the Partnership for Sustainable Communities, Regional Economic Clusters, Choice Neighborhoods, and Expanded Rental Housing Opportunities, it should ensure that "where to invest" is as important as "what to invest in."[54] In addition, the Department of Energy should join HUD, DOT, and the EPA as a member of the Partnership for Sustainable Communities. DOE's primary focus currently is vehicle and fuel technologies; participation in the Partnership would help the department extend its expertise to include the value of VMT reduction.

9. MAKE PLACE-BASED DATA AVAILABLE TO LOCAL GOVERNMENTS.

Local governments have the potential to make a big impact on greenhouse gas emissions with transportation and land use planning, parking policies, transportation alternatives, and more. Yet, a community that wants to conduct a complete inventory of its mobile source emissions and track the impacts of transportation emission-reduction projects faces a big barrier in data acquisition. Communities are spending time and resources on data requests, research, and redundant analysis — time and resources that could be better spent on mitigating and adapting to climate change. The federal government creates and collects an abundance of important data on the activities that cause greenhouse gas emissions, but the data have not been designed for use by local governments; where data are publicly available, they often are published

52 www.htaindex.org

53 "Penny Wise and Pound Fuelish: New Measures of Housing + Transportation Affordability", Center for Neighborhood Technology, 2010, http://www.cnt.org/repository/pwpf.pdf. Makarewicz/Haas/Benedict/Bernstein, "Estimating Transportation Costs for Households by Characteristics of the Neighborhood & Household," Transportation Research Record—Journal of the Transportation Research Board Number 2077, Transportation Research Board, National Academy of Sciences, December 2008

54 Hon. Shaun Donovan, Secretary of U.S. Dept. of HUD to the Congress for a New Urbanism, May 21 2010, and recent rules embodied in Notices of Fund Availability, confirm this commitment.

at state or county rather than community scale. Data on greenhouse-gas-emitting activities, such as vehicle miles traveled, should be scaled for use by local governments.

In addition, states collect odometer readings for all vehicles as part of the Enhanced Inspection and Maintenance Program (more popularly known as Smog Check) supported by the EPA. These data should be put in the public domain over a central, user-friendly Internet site.

10. **URGE CONGRESS TO CONTINUE AND EXPAND THE ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT PROGRAM AND SIMILAR DIRECT ASSISTANCE TO LOCAL GOVERNMENTS FOR PROJECTS THAT REDUCE GREENHOUSE GAS EMISSIONS.**

    Encourage grant recipients to use part of their funds to establish revolving loan programs and other self-sustaining financing tools for mobility investments that save energy and prevent pollution.

11. **DIRECT DOT TO SUPPORT EXPANDED CAPACITY BUILDING FOR METROPOLITAN PLANNING ORGANIZATIONS,** which already track VMT for highway planning purposes.

12. **CONTINUE RAISING VEHICLE EFFICIENCY STANDARDS** with the goal of achieving an average of 60 mpg in the nation's vehicle fleet by 2030.[55]

13. **OPPOSE FEDERAL SUBSIDIES FOR CARBON-INTENSIVE, WATER-INTENSIVE, AND ENERGY-INTENSIVE SUBSTITUTES FOR TRADITIONAL PETROLEUM FUELS – FOR EXAMPLE LIQUIDS FROM COAL AND OIL FROM SHALE AND TAR SANDS.**

    As we point out elsewhere in this report, subsidies that prolong America's reliance on finite carbon-based fuels create several problems. They compete with other users for water resources; they produce more greenhouse gas emissions and other pollutants; and they consume financial resources that would be better spent on expediting the nation's transition to clean energy.

14. **TO SUSTAIN ADEQUATE FUNDING FOR SURFACE TRANSPORTATION SYSTEMS AND INFRASTRUCTURE, SUPPORT THE TRANSITION FROM A GASOLINE TAX TO A VMT FEE.**

    Addressing the crisis in transportation funding, the National Surface Transportation Infrastructure Financing Commission has recommended that we transition from fuel taxes to a mileage based fee by 2020. In the short term, the Commission recommended that Congress approve a 10 cent increase in the federal gasoline tax and a 15 cent increase in the federal tax on diesel fuel. These fuel taxes, which the Commission estimates would average $5 a month per vehicle and $9 a month per household, would be phased out as a mileage-based VMT fee is phased in.

    The Commission's rationale is sound. The Administration's commendable efforts to reduce greenhouse gas emissions, to wean the economy from imported oil, to develop low-carbon fuels, and to make America's vehicle fleet more energy efficient all will lead to a further crisis in our ability to invest in clean mobility and to maintain a modern transportation infrastructure if we don't find an alternative to gas taxes.

    As the Commission suggests, the nation should use the transition period to test and demonstrate different methods of tracking vehicle miles traveled while addressing concerns about privacy and how a VMT fee would be administered. Experiments already are underway in Oregon and Europe.

    Shortly after taking office, Transportation Secretary Ray LaHood said he would consider a fee or tax on vehicle miles traveled. President Obama said no. We encourage the President to reconsider.

55 In 2008, PCAP advocated a CAFE standard of 50 mpg by 2025 for automobiles and light trucks. The "60 by 30" goal was recently proposed in a letter to President Obama by a coalition of 19 environmental organizations.

FRESH WATER RESOURCES

Water is overtaking oil as our scarcest natural resource in the world.

— Author Steven Solomon

In February 2010, Interior Secretary Ken Salazar announced WaterSMART, a strategy to improve federal water policies to meet the demands of population growth, climate change, energy production, aging infrastructure, and environmental risks. Water is also a focus of the Administration's Interagency Climate Change Adaptation Task Force. In October 2010, it proposed a national action plan to "strengthen climate change adaptation for freshwater resources".

The last time the federal government conducted a comprehensive national "water census" was 1978. But we know this much:

- We Americans are the biggest water consumers in the world;
- By 9 a.m. each morning, the average American has used 30 gallons of water. By bedtime, each of us has used 150 gallons. By comparison, people in the United Kingdom use 40 gallons a day and people in China use 22 gallons;[56]
- Some U.S. cities with the lowest levels of rainfall have the highest water use and the lowest water rates;[57]
- Although it is often unpriced around the globe, water is "the most valuable stuff in the world."[58] There is no substitute;
- By mid-century, 45 percent of the world's people (4 billion) are expected to live in places chronically short of water.

There is an old saying by Mark Twain that is familiar in the American West: "Whiskey is for drinking; water is for fighting over." The fighting has already begun. The U.S. Geologic Survey (USGS) reports that "water shortage and use conflict have become more commonplace in many areas of the United States – even in normal water years – for irrigation of crops, for growing cities and communities, for energy production, and for the environment and species protected under the law".

When the Government Accountability Office surveyed state water officials in 2003, it found that 36 states were anticipating water shortages within a decade, even without counting the anticipated impacts of climate change. In July 2010, the Natural Resources Defense Council (NRDC) estimated that more than 1,100 U.S. counties – one-third of all the counties in the lower 48 states – are threatened with water shortages by mid-century as a result of global warming. Fourteen states face extreme or high risk.[59]

56 "America's Dwindling Water Supply," CBS Reports, January 2010. www.cbsnews.com/stories/2010/01/08/eveningnews/main6073416.shtml.

57 "The Price of Water: A Comparison of Water Rates, Usage in 30 U.S. Cities", Circle of Blue, April 26, 2010.

58 "For Want of a Drink", The Economist, May 22, 2010, p. 3.

59 Arizona, Arkansas, California, Colorado, Florida, Idaho, Kansas, Mississippi, Montana, Nebraska, Nevada, New Mexico, Oklahoma, and Texas.

PCAP recommends that the Administration take the following steps:

1. EXPEDITE AND REGULARLY UPDATE THE NATIONAL WATER CENSUS.

The Department of Interior is conducting a new national water census as part of the WaterSMART program. It has been a long time coming. In 2002, the U.S. Geological Survey issued concepts for how a national water assessment could be done. Five years later, the agency released its 10-year science strategy with seven major recommendations including a water census. The same year, the National Science and Technology Council issued a report that stated, in part, "The United States has a strong need for an ongoing census of water that describes the status of our nation's water resource at any point in time and identifies trends over time."

A national water census is a complicated and ambitious project – one reason it hasn't been done for so long. But with predictions that much of the nation will soon experience fresh water deficits, with congressional reauthorization of the Farm Bill scheduled for 2012 and with more work on the National Flood Control program scheduled for next year on Capitol Hill, the Administration should do all it can to expedite the water census and ensure that it is updated regularly.

The Interior Department is not the only federal agency working on fresh water issues. The Environmental Protection Agency assesses the condition of America's streams, lakes, bays, coasts, and estuaries, based on data provided by states under Section 305(b) of the Clean Water Act.

In April 2010, the EPA issued a new 305(b) report on lakes, calling it the agency's first statistically valid characterization of America's lakes. The agency plans to issue an assessment of rivers and streams in December 2011 and a report on wetlands in 2013.[60]

In October 2010, the EPA's Office of Water issued an updated Response to Climate Change strategy,[61] including near-term action items on how the agency will modify its water activities to help the nation mitigate and adapt to climate disruption.

We encourage the Administration to dedicate ample resources and senior-level attention to ensure that decision-makers at all levels of government and civil society have the best possible information on fresh water issues.

2. CREATE A NATIONAL COMMISSION ON FRESH WATER MANAGEMENT AND A NATIONAL MANAGEMENT PLAN.

The need has never been greater for a modern, coordinated strategy to manage America's fresh water resources. Elements of the strategy could include the following:

- An action plan for managing fresh water resources in a changing climate (as recommended by the President's Interagency Climate Change Task Force), including constraints on constructing water infrastructure in high-risk areas;

60 In its April 2010 report, EPA said that 56 percent of the lakes sampled were in good biological health, compared to 21 percent in fair health and 22 percent in poor health. See www.epa.gov/aquaticsurveys and http://water.epa.gov/type/watersheds/monitoring/upload/nars-progress.pdf.

61 http://water.epa.gov/scitech/climatechange/upload/NWP-Key-Action-Update-2010-2011.pdf. The Commission would propose solutions that increase the integration and efficiency of the existing patchwork of jurisdictional authorities overseeing management of the nation's freshwater resources; characterize the water quality and quantity challenges facing the nation; assess opportunities to streamline intergovernmental interactions across jurisdictions and scales; and review federal laws governing water quality and quantity management to assess whether changes are needed for climate change adaptation and associated freshwater management.

- A comparative analysis by DOE of the life-cycle water footprints of different fuels and energy technologies being considered to meet the nation's future energy needs, among them unconventional oil and gas production, coal extraction and consumption, nuclear power, hydroelectric power, biofuels, and solar and wind energy;[62]
- A collaboration between the DOE and EPA to encourage or require the use of water-conserving practices in energy production;
- A thorough analysis of how current national programs and policies impact fresh water resources, for better or worse;
- The creation of an independent National Commission on Freshwater Resources to develop climate adaptation strategies that safeguard water supplies and quality, as well as freshwater ecosystems across jurisdictions. The Commission would build on the work of the President's Interagency Climate Change Adaptation Task Force and EPA's evolving Response to Climate Change strategy;
- A broad public education campaign on what citizens and businesses can do to conserve and protect water resources.

3. BUILD THE CAPACITY OF THE FEDERAL GOVERNMENT, KEY WATER-USING SECTORS, AND THE INTERNATIONAL COMMUNITY TO MAKE MORE INFORMED DECISIONS ABOUT WATER CONSUMPTION.

Because the energy and agricultural sectors in the United States have a major impact on water resources, both sectors offer opportunities for "co-conservation". The Administration can:

- Submit recommendations to Congress on how federal agricultural programs, including commodity subsidies, should be modified in the next Farm Bill to encourage greater water efficiency and conservation and greater protection of vital ecosystems in agricultural operations;[63]
- Share emerging best practices in co-conservation with developing nations.

4. RAPIDLY SCALE UP THE NATION'S CAPACITY TO WORK WITH NATURAL SYSTEMS.

The use of natural ecosystems to manage, cleanse, and store fresh water – and to manage storm and wastewater – should move from demonstration-scale to common practice in the United States. New York City offers an example of the economic benefits of natural systems. In the 1990s, the quality of its water declined so badly that the EPA nearly required the city to build an $8 billion water treatment plant. Instead, the city restored the Catskill watershed's ecosystems and biodiversity to recapture its natural water purification services. The Administration can encourage greater use of natural systems by:

- Making current information available to state and local officials about the economic, social, and other benefits of ecosystem services along with information and technical assistance on how ecosystems can be preserved or restored;

62 USGS data show about 41 percent of U.S. fresh water withdrawals were used for thermoelectric power generation in 2005. About 13 percent of our electric consumption is attributed to treating and distributing water. In 2008, water shortages in the Southeast threatened to shut down several nuclear power plants, which would have resulted in major increases in energy prices for millions of customers if utility companies had to purchase power from other providers. An Associated Press analysis of America's 104 nuclear power plants determined that 24 are in areas already experiencing "the most severe levels of drought". Water consumption should be an important factor in determining the fuels and technologies the federal government will target for research, commercialization, and subsidies.

63 As an indication of how important water availability is to the agricultural economy, NRDC estimates that in 2007, farm crops in the 1,100 U.S. counties most vulnerable to the water impacts of climate change were valued at more than $105 billion.

- Working with the science community, including international efforts such as TEEB – The Economics of Ecosystems and Biodiversity project sponsored by the United Nations Environment Programme – to improve our ability to quantify the monetary and social value of ecosystem services;
- Factoring water-related ecosystem services into federal programs and strategies for climate mitigation and adaptation;
- Putting ecological resilience at the forefront of criteria for designing and funding federal water projects;
- Launching a national "Green Infrastructure" initiative that provides information to municipalities on the cost, benefits, and options for replacing or supplementing aging fresh and gray-water infrastructure with natural systems;
- Identifying specific high-risk water-related ecosystems in the United States and building public-private partnerships to preserve and restore them.

5. DIRECT THE EPA AND OTHER GREAT LAKES MANAGEMENT AGENCIES TO DEVELOP A CLIMATE-RESILIENCE STRATEGY FOR THE GREAT LAKES, AMERICA'S LARGEST FRESHWATER ECOSYSTEM.

This strategy should explicitly incorporate climate adaptation capacity into the Administration's existing Great Lakes Restoration Initiative; address needs to protect and safeguard high-quality habitats that support climate-sensitive species, including headwaters and healthy wetland systems; and develop a bi-national Great Lakes climate resilience strategy through the renegotiation of the Great Lakes Water Quality Agreement. The new Agreement should establish benchmarks for progress, baseline data for at-risk habitats, and long-term monitoring and assessments to determine climate impacts on the chemical, physical, and biological integrity of the Great Lakes. These data can help the Parties identify emerging threats and take responsive and remedial actions. The Great Lakes resilience strategy should identify effective models and practices that can be adapted to other freshwater systems in the United States and, as appropriate, around the world.

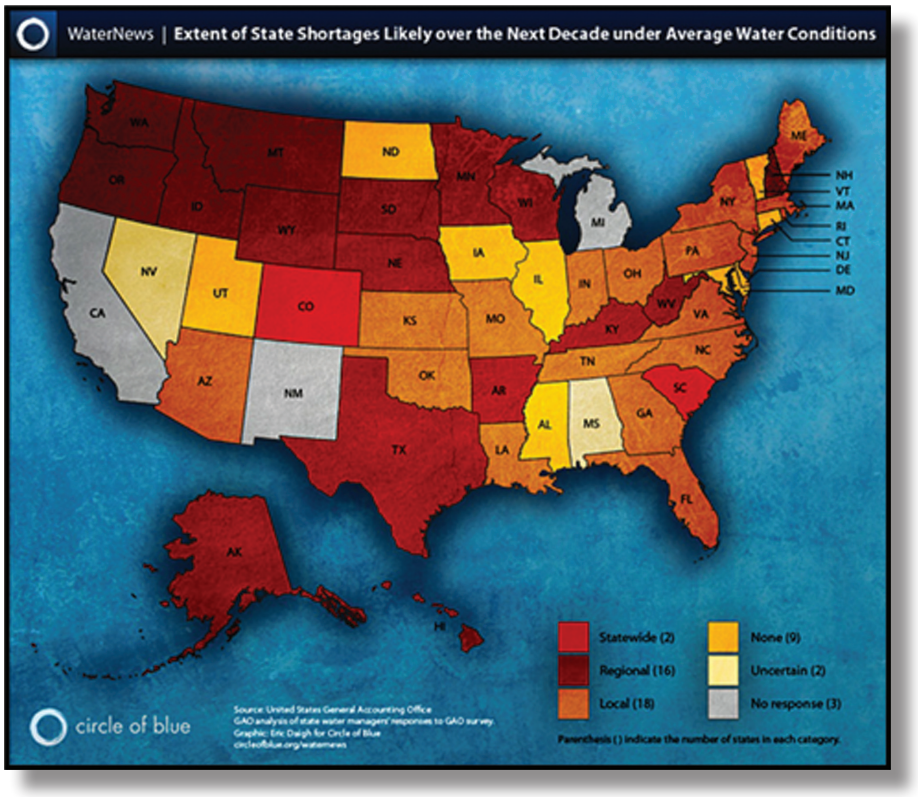

Figure 4: Projected state water shortages. Source: Circle of Blue.

The Obama Administration had not yet taken office when Congress approved the last Farm Bill in 2008. But the Administration will have the opportunity to push for significant reforms of national agriculture policy when the bill comes up for reauthorization in 2012. The Administration already has taken several useful steps to define the role of agricultural and rural communities in a clean energy economy. In January 2009, the U.S. Department of Agriculture (USDA) signed a memorandum of understanding with the Department of Navy to work on advanced biofuels and other renewable energy systems for the military. In May 2010, USDA and EPA announced they will expand the AgStar Program[64] to promote energy production and greenhouse gas emission reductions from livestock operations. At the same time, USDA announced it will conduct the first-ever national survey of renewable energy production on America's farms. And in October 2010, Agriculture Secretary Tom Vilsack announced several additional initiatives to boost the economies of rural areas with the production of renewable fuels.

PCAP proposed in 2008 that the Administration help create a "rural renaissance" in which farms and rural communities become the nation's principal producers of renewable energy, including wind, solar, and biomass. PCAP recommends that the President:

1. **DIRECT USDA TO WORK WITH STAKEHOLDERS AND KEY MEMBERS OF CONGRESS TO DEVELOP A 50-YEAR STRATEGIC PLAN FOR AGRICULTURE.**

   The strategy should define a roadmap to protect ecosystem services, conserve water, promote the production of renewable energy feed stocks, restore and maintain soil health, reduce runoff of animal wastes and fertilizers, and maximize the ability of the nation's soils and private forests to sequester carbon. National farm policy currently operates on five-year cycles. The Farm Bill is reauthorized every five years by Congress and USDA has created five-year strategic plans with input from an array of stakeholders. (Its last strategic plan apparently was published in June 2006, covering Fiscal Years 2005-2010.[65]) A five-year horizon is not sufficiently forward-looking to ensure that rural America achieves the goals listed above while coping with climate change. The United States should have a 50-year agriculture strategy that gives long-term direction to federal farm programs. USDA would use its five-year strategic plans to update and evaluate progress against the 50-year strategy.

2. **STRENGTHEN THE FOCUS ON AGRICULTURE IN THE NATIONAL CLIMATE ADAPTATION STRATEGY.**

   The National Climate Change Adaptation Task Force includes representation from USDA. Its October 2010 report[66] acknowledged that climate change will affect crop production and water supplies important to agriculture.

64 http://www.epa.gov/agstar/

65 See www.ocfo.usda.gov/usdasp/sp2005/sp2005.pdf. Strategic Goal 6 in the plan addresses natural resources and environment. Among other goals, the plan says USDA will measure the success of its efforts to protect watersheds; reduce sentiment and nutrients from farm operations; expand technical assistance to farmers to improve the condition and quality of soils; and work with tribes and local governments to increase sustainable management of forests and grazing lands.

66 http://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf

In its inventory of federal agency adaptation activities, the report says: "The Department of Agriculture (USDA) has integrated climate change objectives into its strategic plans and is expanding its focus on climate-related research and delivery capacity across its agencies to provide climate services to rural and agricultural stakeholders through existing programs, including the Cooperative Extension Service, the Natural Resources Conservation Districts, and the USDA Forest Service's Climate Change Resource Center."

The Task Force recommended that USDA expand its training of Cooperative Extension agents to understand and communicate basic information from the federal Climate Change Science Program about the anticipated regional and local impacts of climate change. We concur.

In addition, we encourage the Task Force to give greater attention to the impact of changing weather patterns and isotherms on the production of food, fiber and energy feedstocks, and to the role healthy soils and forests should play in mitigating and adapting to climate change.

3. ENCOURAGE THE PRODUCTION AND USE OF BIOCHAR.

Biochar, which can be produced from any organic material, benefits soil health by retaining water; binding to nitrogen, phosphorus, and potassium to reduce the need for fertilizers; and creating habitat for beneficial organisms in the soil. As a result, biochar increases the efficiency of inputs and enhances crop yields. It also stores greenhouse gases, primarily methane and nitrogen oxide. These benefits make biochar an important asset in mitigating and adapting to climate change. Some experts estimate that used worldwide, biochar could sequester greenhouse gases at gigaton scale.

PCAP recommends that the Administration:

- Support demonstrations of biochar at large scale, including a variety of "recipes" that customize biochar for different soils and conditions;
- Based on the knowledge gained from current research and the demonstration projects proposed above, work with Congress to create tax incentives for farms to treat biochar as a long-term capital investment that restores and maintains healthy soil structure to improve its holding capacity for water and nutrients, and to promote diversity of soil micoflora;
- Help farmers earn revenue from biochar by working with private and academic researchers to create monitoring and verification protocols for carbon credits in national and/or regional trading systems.

4. PROMOTE RURAL REVITALIZATION IN A NEW ENERGY ECONOMY.

We urge the President to articulate a new vision for American agriculture and rural communities in the 21st century – a vision of rural revitalization that embodies the goals listed in recommendation No. 1 above and describes the economic opportunity for farms and rural communities to provide the nation with renewable energy and biofeedstocks.[67]

67 Agricultural crops can be used to create oils, resins, cosmetics, plastics, and road de-icers, to name a few products. See http://afsic.nal.usda.gov/nal_display/index.php?info_center=2&tax_level=2&tax_subject=298&topic_id=1427. A challenge in farm policy is how agriculture can provide these resources while sustaining adequate production of food and fiber.

On June 12, 2009, President Obama created an Interagency Ocean Policy Task Force that has recommended steps to "enhance national stewardship of the ocean, coasts and Great Lakes and promote the long term conservation and use of these resources." On July 19, 2010, the President signed an executive order that directed federal agencies to implement the Task Force's final recommendations. Among other things, the Task Force called for a "National Policy for the Stewardship of the Ocean, Coasts and Great Lakes" and a National Ocean Council for stronger and more coordinated governance of ocean resources.

While praising this progress, some of the experts consulted by PCAP say much more needs to be done "on the ground". In 2008, PCAP proposed 16 executive actions by the President and 16 actions by Congress on oceans and ocean policy.[68] Many of the recommendations remain important but not yet implemented. Here is a short list:

1. IMPROVE THE LAND-BASED PRACTICES THAT ADVERSELY AFFECT OCEANS.

Government, industry, and all citizen/consumers should practice better management of land-based activities that result in ocean degradation. Point- and non-point pollutants such as nitrogen fertilizers; urban sewage and storm water; animal and industrial wastes; and soil erosion from farming operations, construction sites, and other land disturbances all contribute to degradation of ocean and coastal ecosystems. So does the removal of vegetation that filters water entering rivers and streams. Wastes ranging from plastics of all types to pharmaceutical chemicals flushed down toilets are found in ocean waters. We recommend that the Administration:

- Ensure that federal agencies have ample resources and authority to monitor pollutants (including pharmaceuticals and microbial pathogens) and to fully enforce existing regulations that directly or indirectly protect ocean health;
- Direct the National Oceanic and Atmospheric Administration (NOAA) to launch a sustained campaign to improve public education and awareness about the various ways our activities on land impact the oceans;
- Through the Partnership for Sustainable Communities, the EPA's regional offices, and other relevant federal agencies and programs, educate watershed communities about natural systems and inexpensive measures to prevent pollution that eventually makes its way to oceans. Examples include reforestation in watersheds, conservation and restoration of wetlands, and permeable surfaces to reduce storm water runoff in urban areas.

2. CREATE A SINGLE CABINET-LEVEL LEAD OCEANS AGENCY (A DEPARTMENT OF THE OCEANS) TO BETTER CHART AND COORDINATE FEDERAL ACTION ON OCEAN AND COASTAL ISSUES.

Ocean experts advising PCAP believe a dedicated cabinet-level agency is necessary to more effectively implement national policies and programs related to the health of oceans and coastal areas. The current National Ocean Council consists of representatives of nearly 30 federal agencies, illustrating how ocean policy is scattered across the federal government. A Department of the Oceans – in effect a "NASA of the oceans" – would combine elements of many of these agencies. As an initial step, the Administration could ask Congress to designate NOAA as the federal government's lead ocean agency until a Department of Oceans is established and organized.

68 See http://www.climateactionproject.com/docs/pcap/Chapter_13_Oceans_11_13_08.pdf

3. DEVELOP A NATIONAL OCEAN CONSERVATION AND ADAPTATION STRATEGY.

Resilience and adaptation to climate change are among the "areas of special emphasis" of the National Ocean Council. Its work and the work of the Interagency Climate Change Adaptation Task Force should lead to a clear and detailed national strategy to reduce ocean pollution, prevent commercial over-fishing, protect marine habitat, and better manage coastal development in sensitive areas. An ocean strategy should include an expansion of protections within National Marine Sanctuaries; potential conservation and withdrawal zones where development should be prevented or existing development removed to protect and restore wetlands, estuaries, and critical habitat; and protection for wetlands, coral reefs, mangroves, and sea grass beds that absorb storm surges and carbon emissions. In addition, the Administration can:

- Improve control of the U.S. Exclusive Economic Zone (EZZ) to prevent exploitation. Better coordination between competing agencies and more holistic management would help protect this public commons;
- Proactively solicit feedback from communities, businesses, and other stakeholders on how to improve the quality, format, and flow of information that allows local officials to better anticipate climate-related impacts on oceans and coasts;[69]
- Direct the Federal Emergency Management Agency (FEMA) to help state and local governments in coastal areas improve planning, adaptation, and disaster-prevention programs;
- Direct FEMA to evaluate the potential to relocate vulnerable coastal communities and infrastructure out of areas threatened by severe climate impacts including sea-level rise.

4. ADOPT THE ALASKAN MODEL FOR FISHERIES MANAGEMENT.

According to the Pew Ocean Commission (2004), U.S. wild fisheries are over-exploited and under-producing by approximately 34 percent. More than a third of fish stocks are over-exploited and depleted; a second third is fully exploited and facing exhaustion. The Administration can implement the strategies in fisheries management successfully developed by the State of Alaska. In addition, it can establish appropriate Marine Protected Areas within each of the 10 Large Marine Ecosystems to protect spawning aggregation, recruitment sites, and other critical coastal areas upon which healthy marine ecosystems depend.

5. ESTABLISH A PERMANENT OCEAN TRUST FUND TO PROVIDE A DEDICATED SOURCE OF FUNDING FOR STATE AND FEDERAL PROGRAMS TO PROTECT OCEAN ECOSYSTEMS AND COASTAL AREAS.

Consider a tax on offshore oil and gas production, or the redirection of federal subsidies for offshore extraction, to provide revenue for the fund.

6. ESTABLISH STANDARDS OF CARE FOR OIL AND GAS EXTRACTION.

America's long-term energy security will depend on developing viable alternatives to petroleum and other fossil fuels. In the meantime, new standards of care are needed for industries extracting oil and gas from the Gulf and other areas off the coasts of the United States.

69 In the past, the federal climate science program has been criticized for focusing too little on the regional and local impacts of climate change – information necessary for local decision makers to prepare for the anticipated impacts of climate disruption. Since PCAP first recommended improved information flow to localities in 2008, the National Oceanic and Atmospheric Administration and the Department of Commerce have proposed creation of a NOAA Climate Service to carry out this function. Pending congressional approval of the Service, NOAA has established a Climate Program Office for the same purpose.

Two years before the BP oil spill in the Gulf of Mexico, PCAP proposed the following steps to "significantly enhance our capacity to prevent, monitor, and mitigate oil and other hazardous substance spills":

- Direct the Coast Guard to more proactively address through regulation the root causes of oil spills, such as organizational and management failures regarding crew training, equipment maintenance, fuel transfers, crew size, crew fatigue, and language requirements;
- Remove preemption of state regulations geared toward oil spill prevention;
- Engage international treaty organizations to aggressively pursue changes to the worldwide vessel fleet needed to better protect the nation's waters;
- Embrace state and maritime punitive damage awards against companies that recklessly cause oil spills, either directly or through their employees;
- Examine and reform the federal oil spill response process to ensure adequate coordination among federal, state, and local agencies; improved ability to monitor spills; adequate capacity and preparation by the Coast Guard and other entities; clarity of laws and regulations governing oil spill response; and adequate resources to ensure appropriate implementation.

In addition, the Administration can advance knowledge of the impacts of ocean-based energy operations by commissioning research on offshore wind turbines, wave and tidal energy production, and more traditional activities such as drilling, establishing platforms, and laying pipeline for offshore oil and gas operations. The impacts of these operations on the marine environment should be monitored and made available to the public.

7. USE MARINE SPATIAL PLANNING (MSP) TO ESTABLISH CLEAR, STRONG CONSERVATION AND ECOSYSTEM PROTECTION STANDARDS FOR THE NINE MAJOR REGIONS OF U.S. WATERS.

The Interagency Ocean Policy Task Force has recommended that the federal government "implement comprehensive, integrated, ecosystem-based coastal and marine spatial planning and management in the United States."[70] We concur.

Ecosystem-based MSP could result in more benefits for society from the use of the marine environment while its natural diversity is better protected. Implementation of MSP would help ensure that activities in the marine environment can co-exist and that the effects of different activities on each other and the cumulative effects on the environment will be taken into account and consistently managed.

8. CREATE AN OCEAN WARNING AND MONITORING SYSTEM.

- Improve monitoring and warning systems using satellite systems that measure ocean temperature, waves, winds, and sea levels;
- Collaborate with the National Science Foundation to identify gaps in continuing research to quantify the effects of climate change on ocean habitat and ecology;
- Assess existing and emerging threats to oceans, as well as their potential ecosystem services in light of emerging science about climate change. For example, the agency should study the economic and food security consequences of acidification and ways to reduce the pH of oceans while not harming them.

70 The UNESCO Intergovernmental Oceanographic Commission defines Marine Spatial Planning as a "public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political progress."

In its 2008 report, PCAP recommended that the Obama Administration seek a bilateral climate agreement with China to set the stage for the 15th Conference of the Parties in Copenhagen (COP-15). The Administration finalized an agreement with China in November 2009, shortly before COP-15 began. The agreement is described as a comprehensive plan for cooperation on clean energy technologies, including energy efficiency, renewable energy, electric vehicles, carbon capture and sequestration, and nuclear power.[71] The Administration reached similar bilateral agreements in 2009 with Mexico, Canada, and India. President Obama breathed new life into the Major Economies Forum on Energy and Climate – a group of 17 of the largest developed and developing nations first convened by President George W. Bush – and persuaded the G-20 to endorse a phase-out of international consumer subsidies for fossil fuels.

While these bilateral agreements did not lead to a binding international climate treaty at COP-15, President Obama was instrumental in creating the Copenhagen Accord in the final hours of the conference. The Accord endorses the goal of keeping atmospheric warming to no more than 2°C above pre-industrial levels, promises funding for developing nations to mitigate and adapt to climate change, and set the stage for modest progress at COP-16, held in December 2010 at Cancun, Mexico.

While COP-16 appears to have put the world community back on a positive track toward a binding and verifiable climate treaty, there remains significant doubt such an agreement will be reached any time soon. One barrier is the failure of Congress to pass legislation that caps greenhouse gas emissions in the United States.

Nevertheless, the United States remains a party to the United Nations Framework Convention on Climate Change (UNFCCC), which commits signatory nations to "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system". Consistent with that obligation, we encourage the President to:

1. USE EXECUTIVE AGREEMENTS FOR INTERNATIONAL ACTION[72]

Except in cases where they clearly exceed presidential authority, we recommend that the President advance international collaboration on climate mitigation and adaptation with Executive Agreements. Like formal treaties negotiated by the President under Article II of the Constitution, Executive Agreements are binding under international law; but unlike treaties, they do not require consent by a two-thirds vote of the Senate.

There are three types of Executive Agreements. A "Sole" Agreement needs only the President's approval. A "Treaty" Agreement carries out one or more provisions of a formal Article II treaty, such as the United Nations Framework Convention on Climate Change. A "Congressional" Agreement is grounded in legislation approved by Congress before or after the Agreement is created. Alternatively, the President can submit a Congressional Agreement to Congress for approval by majority votes in the House and Senate.

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71 For greater detail, see http://www.whitehouse.gov/the-press-office/us-china-joint-statement

72 This recommendation quotes and draws material from two sources that offer excellent descriptions of the history of executive agreements (http://www.press.umich.edu/pdf/9780472116874-ch1.pdf) and their possible application to climate change (http://www.columbiaenvironmentallaw.org/assets/pdfs/35.2/Chang_Final.pdf).

Executive Agreements are not rare. Between 1939 and 1999, more than 90 percent of the international agreements in which the United States is party were in this form. Today, the United States is a party to five times more Executive Agreements than treaties.[73] Since World War II, "foreign policy makers (have) looked to executive agreements as an efficient means to complete important diplomatic ends" without undergoing the sometimes arduous and politically-driven process of winning a supermajority the Senate.

While there are liabilities as well as advantages in using Executive Agreements to establish binding international commitments, we urge the Administration to enter into more bilateral and multi-lateral agreements for purposes such as technical assistance and technology transfer, clean energy research and development, financial assistance to reduce carbon emissions in developing nations, and other collaborations that help fulfill the nation's obligations under the UNFCCC, related treaties and current law.

2. PROMOTE "CLEAN ENERGY SOVEREIGNTY" IN INTERNATIONAL TRADE

International trade agreements now create uncertainty about the legality of national policies on climate mitigation and adaptation, such as subsidies for clean energy and renewable energy portfolio standards, to name just two. For example, the Obama Administration has sided with the United Steel Workers union in a petition to the World Trade Organization, protesting China's subsidization of renewable energy. The union alleges that "China's massive domestic subsidies to green technology are distorting trade and harming producers in other countries".[74]

PCAP's 2008 report recommended that the Obama Administration champion "clean energy sovereignty" – in other words, trade policies that allow nations to take reasonable steps to build clean energy economies, internalize the carbon costs of resources and products, enter into multilateral agreements, and take other measures to mitigate climate change. In most cases where climate action and international trade come into conflict, preventing the irreversible damage of global warming and creating a global green economy should be allowed to trump trade.

3. MAKE EXISTING LAW THE FOUNDATION FOR LEADERSHIP

As we have documented in Appendix 3, the Obama Administration has made very good progress on several fronts related to clean energy and global climate change. However, on the big leadership issues – for example, pushing hard for climate legislation and setting a science-based goal for reducing greenhouse gas pollution – President Obama has been inhibited by his desire not to "get ahead" of Congress.

The Administration's negotiating position on a global climate treaty has been consistent with the Byrd-Hagel Resolution[75], in which the Senate voted unanimously in 1997 to oppose any international agreement that would require industrial nations to cap their emissions without a similar requirement for developing countries. The resolution speculated that any climate agreement in which developing nations were treated more leniently than the U.S. "could result in serious harm to the United States economy, including significant job loss, trade disadvantages, increased energy and consumers costs, or any combination thereof."[76]

73 "International Executive Agreements on Climate Change", Hannah Chang, Columbia Journal of Environmental Law, Vol. 35-2, p. 341. See http://www.columbiaenvironmentallaw.org/articles/international-executive-agreements-on-climate-change

74 See http://assets.usw.org/releases/misc/section-301.pdf

75 See http://www.nationalcenter.org/KyotoSenate.html

76 The position taken by the Administration's chief climate negotiator, Todd Stern, is that a global treaty must include emission reductions requirements for developing as well as developed countries, although those commitments would not necessarily be equal.

While the Byrd-Hagel Resolution was a clear political signal that the Senate would not consent to the Kyoto Protocol, it is a "Sense of the Senate Resolution" that does not have the force of law. Since it was passed, there have been numerous credible analyses showing a low-carbon economy would add substantial numbers of jobs and new industries in the United States; conversely, policies that retard the growth of green industries will allow other nations to lead the world in obtaining those jobs – precisely the result the United Steel Workers union protests in its WTO petition. As for a trade disadvantage on products from countries that don't commit to climate action, there are other remedies, among them a border tax.

In international as well as domestic actions, we encourage the President to be guided by the current law of the land. Current law makes clear that past Congresses recognized the seriousness of global climate change and the irreversibility of many of its impacts. Mitigating climate change has been official U.S. policy for more than 30 years, since Congress passed the National Climate Program Act of 1978. Past congresses have "delegated to the President, through legislation, substantial authority to address" climate change.[77]

In the language clarifying the intent behind various climate-related laws, Congress has found that "weather and climate change affect food production, energy use, land use, water resources and other factors vital to national security and human welfare";[78] that "necessary actions must be identified and implemented in time to protect the climate";[79] and that "it is in the national security and economic interest of the United States to foster greater efficiency in the use of available energy supplies and greater use of renewable energy technologies".[80] The National Environmental Policy Act directs the federal government to use "all responsible means…to fulfill the responsibilities of each generation as trustee of the environment for succeeding generations…"[81]

While these statutes may be inferred to apply only to domestic policy, we now live in a world in which no nation's energy policies are "domestic". Every nation's greenhouse gas emissions affect the well-being of the people in every other nation, today and in the future. All energy policy is foreign policy.

While we understand the benefits of good relations between Congress and the White House, a partnership that results in paralysis clearly is not in the national interest when it comes to global warming. We urge the Administration to base its actions on the law of the land rather than the rhetoric of those in the 112th Congress who deny that climate change is real or who oppose efforts to mitigate it.

77 "The Boundaries of Executive Authority", Alaine Ginochio et.al. , Center for Energy & Environmental Security, University of Colorado School of Law, July 2008, p. 15. http://www.climateactionproject.com/docs/Executive_CEES_PCAP_II_Report_Jul_17.pdf

78 42 U.S.C. § 2901(1) (National Climate Program Act of 1987).

79 Id. at § 2901 Note §1102(4) (GCPA).

80 National Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989

81 42 U.S.C. §4331(b)

CONCLUSION

As we write this report in January 2011, two possible futures are becoming more evident in national and world affairs.

In Colorado, Gov. Bill Ritter has left office after four years of work to build a "clean energy economy" in his state. His efforts are not as well known as Gov. Arnold Schwarzenegger's in California, but they deserve attention because in regard to energy and climate, Colorado is a microcosm of the nation. Rich in sunlight and wind as well as oil and gas, it is beginning the transition to a low-carbon economy.

With the help of a willing legislature, Ritter signed four dozen clean energy bills into law during his term in office. Among them was a requirement that Colorado generate 30 percent of its electricity from wind and solar technologies by 2020, one of the highest standards of its kind in the nation. Another bill established the nation's first statutory plan to convert old coal plants to natural gas.

Xcel Energy, which serves 3.4 million electric customers across eight states, is working with the Colorado Public Utilities Commission on a plan to close two conventional coal-fired power plants and replace them with renewable energy. Xcel already is operating the nation's first hybrid solar-coal power plant.

Due in part to state government's support of a progressive business climate, Colorado has attracted 1,500 clean energy companies and now has the fourth-highest concentration of clean energy workers in the United States. The state's clean tech sector has grown 16 percent and Colorado has become one of the nation's principal beneficiaries of venture capital for clean technology.

While much of the nation was lamenting the loss of jobs to other countries, the Danish wind company Vestas established its North American manufacturing center in Colorado, building four factories that employ 2,500 workers. Six of the company's suppliers are expanding their operations in Colorado. SMA Solar Technology announced that Colorado will be the location of its first manufacturing plant outside Germany. IUQM Technologies, Ascent Solar Technologies, and Solix Biofuels have announced plans to create hundreds more "green jobs" in Colorado this year.

Ritter says the state's commitment to build an energy economy that "rewards imagination, innovation and ingenuity" is largely responsible for the fact that Colorado's unemployment rate has been two to three points below the national average during the recession.

FUTURE NO. 2: CLIMATE DISRUPTION

Evidence of the second future appeared around the world during 2009-2010:[82]

EXTREME PRECIPITATION AND FLOODING: In May 2010, Tennessee was hit by a record 36-hour rainfall that devastated 52 of its 95 counties. The media dubbed the storm "Nashville's Katrina".

In July 2010, heavy monsoon rains caused floods that devastated Pakistan, resulting in $9.5 billion in damages and threatening political destabilization in that nuclear-armed nation. Some 17 million acres of cropland were inundated, destroying food supplies and 200,000 farm animals. At one point, a fifth of Pakistan's land area was under water, affecting 20 million people and killing nearly 2,000. The number of Pakistanis victimized by the floods exceeded the combined total number of victims of the 2004 tsunami in the Indian Ocean, the 2005 earthquake in Kashmir and the 2010 earthquake in Haiti.

82 For a more complete summary of natural disasters worldwide in 2010, see the "State of the Climate Global Hazards" report from the National Oceanic and Atmospheric Administration at www.ncdc.noaa.gov/sotc/hazards.

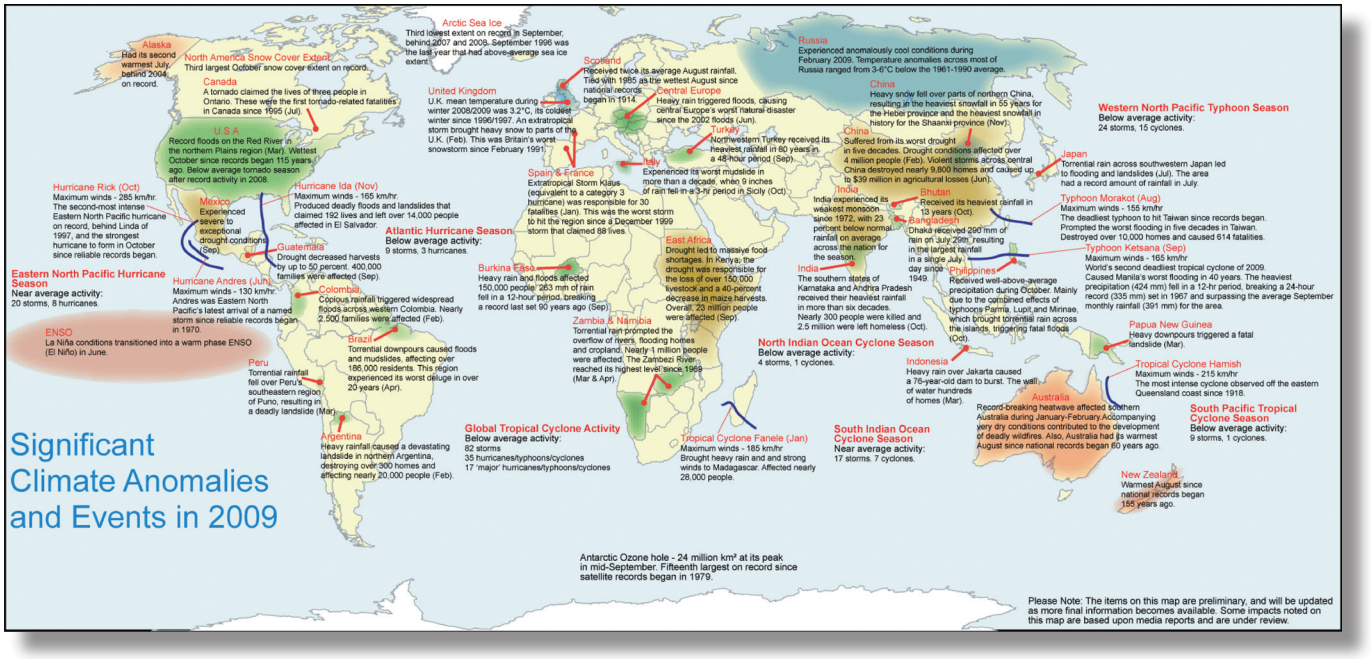


Figure 5: The National Oceanic and Atmospheric Administration has produced this preliminary map of significant climate-related events worldwide in 2009. To see the map in more readable size, go to http://www.ncdc.noaa.gov/sotc/global/2009/13.

In December 2010, the Northeastern United States was hit by a "snowcalypse", the second in 11 months. Twenty inches of snow fell in New York City, paralyzing the city's transportation system, blocking emergency crews, and causing flight cancellations that stranded passengers across the country for days. The record snowfalls were consistent with the predictions of climate scientists that global warming will result in extreme precipitation events year-round.[83]

As 2010 ended, a large part of Australia was inundated by a flood of "biblical proportions". Waters climbed 30 feet above flood level and forced 200,000 people to evacuate their homes. Following a week of record-breaking rain, snow, and flooding, massive mudslides hit areas around Los Angeles just before Christmas in 2010, swallowing homes and highways and forcing hundreds to evacuate. Officials in the cash-strapped state estimated the damages at more than $60 million.

Among other natural disasters related to extreme precipitation in 2010, 12,000 people were evacuated and 35,000 acres of farmland destroyed by flooding in the Balkans. Thirty-four people were killed and 100,000 people evacuated after torrential rainfall caused flooding and landslides in Venezuela

WILDFIRES: An outbreak of wildfires in 2009 killed more than 200 people in Australia during the worst drought that country had experienced in a century. In Greece, wildfires engulfed large areas of rural land around Athens in July 2010, a sequel to the fires that killed more than 50 people in 2007 and reached "biblical proportions" in August 2009.

In August 2010, more than 550 fires raged out of control across Russia's steppes, bogs and forests, creating a 1,000-mile-wide smoke plume that could be seen from space. The fires killed more than 50 people and destroyed thousands of homes. In Haifa, 41 people killed and 17,000 evacuated as a result of fire.

83 See Joe Romm's discussion of the link between large snowfalls and climate change at http://climateprogress.org/2010/12/13/more-snow-storms-warm-years-climate-change. Leading climatologists also have concluded that the record cold experienced in parts of the United States this winter is within expected temperature variations and does not invalidate observed evidence or projected impacts of climate change.

DROUGHT: In July 2009, the Texas AgriLife Extension Service predicted $3.6 billion in agricultural losses, including $1 billion in lost livestock, due to drought in that state. In India, officials reported in 2009 that it was suffering the worst drought in 37 years, with rainfall 23 percent below average. A 10-year drought in Australia, the worst in a century, contributed to the wildfires there. In 2010, 5,000 families were affected by drought in Somalia. According to scientists at the University Corporation for Atmospheric Research (UCAR), the global potential for drought is rising (see Figure 6).

HEAT WAVES: During the summer of 2010 a record heat wave killed 5,600 people in Russia. Carbon monoxide levels rose to 6.5 times the allowable level in Moscow and the city's daily death rate doubled.

Temperatures reached 105 degrees in Beijing, 126.7 degrees in Kuwait, 111 degrees in Riyadh, and 129 degrees in Mohenjo-daro, Pakistan. Temperatures broke 100 degrees in New York and Philadelphia, while Los Angeles recorded an all-time record of 113 degrees in September. In Houston, August was the hottest month in the city's history. Overall, heat records were set in 19 nations during 2010, the highest number on record for a single year.

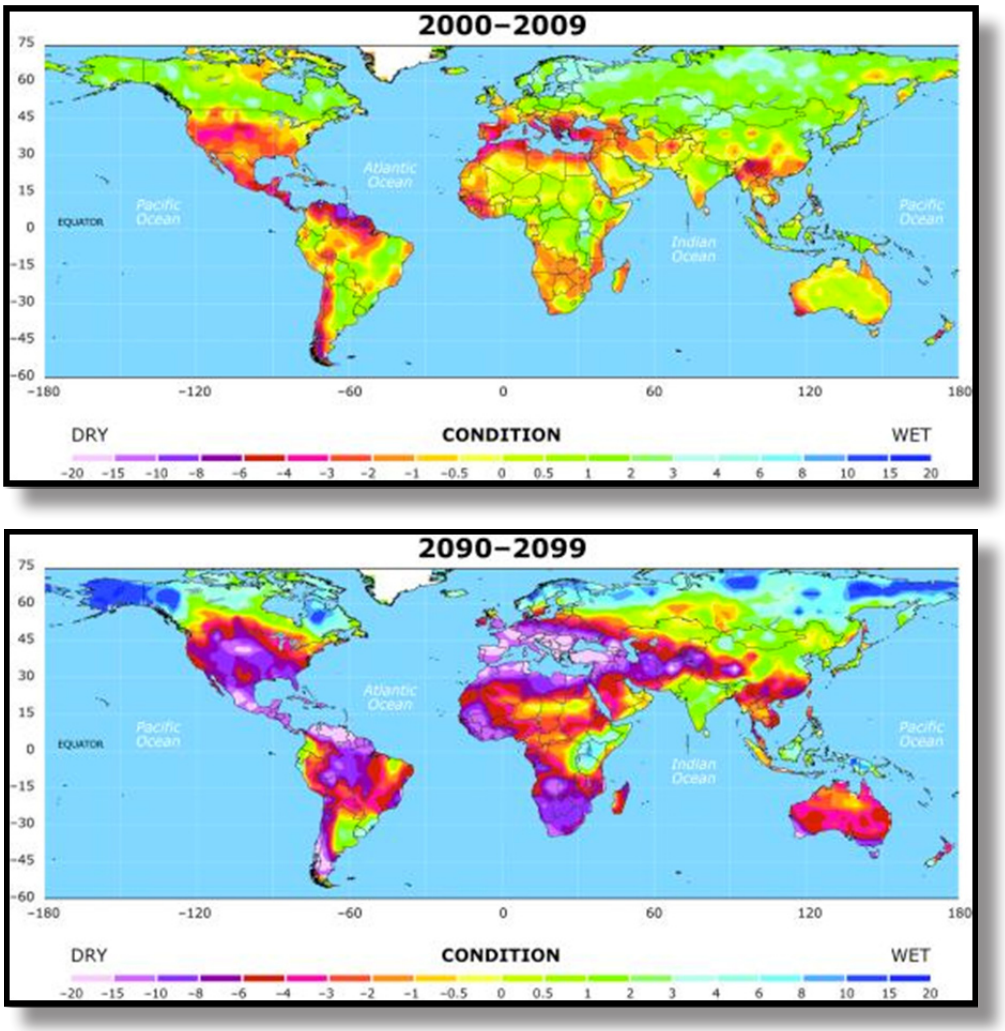


Figure 6: These maps, produced by UCAR, show the potential for future drought worldwide over the indicated decades. UCAR notes that these maps are not forecasts because the amount of greenhouse gas emissions and natural climate variations in the future may alter these drought patterns. For more information about this and other anticipated impacts of climate change, go to http://www2.ucar.edu/news/2904/climate-change-drought-may-threaten-much-globe-within-decades#mediaterms

By the end of 2010, the world's leading reinsurance company, Munich Re, reported that 950 natural catastrophes took place in 2010, the highest number since 1980. Nearly 300,000 people died from natural disasters of all types during the year; economic losses reached $130 billion, up from $50 billion in 2009.[84]

The weather events during President Obama's first two years in the White House proved painfully that when natural weather variations combine with anthropogenic climate change, bad things happen. According to Munich Re, "The high number of weather-related natural catastrophes and record temperatures both globally and in different regions of the world provide further indications of advancing climate change." After last year's weather-related disasters in Russia, President Dmitry Medvedev told the Russian Security Council: "Everyone is talking about climate change now. Unfortunately, what is happening now in our central regions is evidence of this global climate change, because we have never in our history faced such weather conditions in the past. This means that we need to change the way we work, change the methods that we used in the past."

Yet, among many policy-makers in Washington D.C., climate change remains an issue whose name cannot be spoken, except in denial. Contrived scandals, deliberate misinformation, and scare tactics about higher energy prices and lost jobs have encouraged many politicians to treat climate change as a third-rail issue.

The science community, traditionally shy about plunging into politics, has not launched an effective counteroffensive against climate denial. Environmental leaders are searching for new ways to "frame" global warming without talking about it, focusing for example on clean energy, energy independence, national security, and jobs.

It's true that each of these is an important co-benefit of mitigating climate change. In fact, one interesting feature of global warming is that a person doesn't have to believe in the problem to believe in its solutions. Many of the things we must do to reduce greenhouse gas emissions and adapt to climate impacts, insofar as we'll be able, are the same things we must do for economic and energy security, international competitiveness, and conflict prevention in a nuclear-armed world.

Nevertheless, there is something deficient in a nation that cannot frontally address the most important long-term challenge of its time. On problems like this, the test of a leader's commitment to public duty is his or her willingness to meet the most difficult and contentious challenges head-on, even when it puts reelection at risk or requires intensive voter education. The best available science, increasingly substantiated by death and destruction around the world, tells us we must act aggressively to prevent climate catastrophe at magnitudes that cannot be reversed and for which there is no suitable adaptation. On that issue, there is no Right, Left, or Center. There is only forward or backward.

In this report, we have recommended that President Obama and his Administration help the country identify its paths to sustainable prosperity, while backing us away from crossing the planet's critical environmental boundaries. We urge him to use all the powers of the presidency, domestically and internationally, to aggressively address global warming with or without the help of Congress. We urge President Obama to take the compelling case for climate action directly to the American people, articulating a vision of the future that invokes our better and braver angels.

That invocation would be the beginning of President Obama's historic legacy and his stature as a president for the generations.

84 Not all of the deaths and losses were due to weather-related disasters that might be attributed to climate change. The year's disasters included the earthquakes in Haiti , Chile, and China, for example, as well as the eruption of the Eyjafjallajokull volcano in Iceland. On the other hand, Munich Re noted that 2010 was one of the most intense years of hurricanes in the last 100 years; fortunately, many of them did not make landfall.

APPENDIX 1: WINGSPREAD PRINCIPLES

The Wingspread Principles were created in June 2006 as a product of the National Leadership Summits for a Sustainable America hosted by the Johnson Foundation. Signatories range from concerned citizens to some of the nation's most influential organizations and thought leaders. The Principles have guided the work of the Presidential Climate Action Project. They still have great relevance today, although many experts would now define "Effective Action" as reductions of greenhouse gas emissions approaching 100% by mid-century.

URGENCY:

Global warming is real and it is happening now. Every year that we delay action to reduce emissions makes the problem more painful and more expensive - and makes the unavoidable consequences more severe. Leaders in government, business, labor, religion and the other elements of civil society must rally the American people to action.

EFFECTIVE ACTION:

The U.S. must set enforceable limits on greenhouse gas (GHG) emissions to significantly reduce them within the next 10 years, and should work with other nations to achieve a global reduction in absolute GHG emissions of 60 - 80% below 1990 levels by mid-century. Experience proves that voluntary measures alone cannot solve the problem. Aggressive government action, including mandates based on sound science, is imperative and must be implemented now.

CONSISTENCY AND CONTINUITY OF PURPOSE:

Climate stabilization requires sustained action over several decades to achieve deep cuts in greenhouse gas emissions throughout the economy. With its frequent changes of leadership and priorities, however, the American political system does not lend itself to long-term commitments. Leaders in both government and civil society must shape policies and institutions that ensure sustained climate protection.

OPPORTUNITY:

Mitigating and adapting to global warming offer the opportunity to create a new energy economy that is cleaner, cheaper, healthier and more secure. We must awaken America's entrepreneurial spirit to capture this opportunity.

PREDICTABILITY:

Measures that signal investors, corporate decision makers and consumers of the certainty of future reductions are essential to change the economy.

FLEXIBILITY:

Deep cuts in greenhouse gas emissions demand and will drive innovation. Our economy will innovate most efficiently if it is given the flexibility to achieve ambitious goals through a variety of means, including market-based incentives and/or trading.

EVERYONE PLAYS:

Measures to stabilize the climate must change the behaviors of business, industry, agriculture, government, workers and consumers. All sectors and the public must be engaged in changing both infrastructure and social norms.

MULTIPLE BENEFITS:

Actions to stabilize, mitigate or adapt to global warming should be considered alongside other environmental, economic and social imperatives that can act synergistically to produce multiple benefits - for example, "smart growth" practices that conserve forests and farmland while reducing the use of transportation fuels. Many actions to stabilize climate offer local, regional and national, as well as global, benefits.

ACCURATE MARKET SIGNALS:

The true and full societal costs of greenhouse gas emissions, now often externalized, should be reflected in the price of goods and services to help consumers make more informed choices and to drive business innovation. Policymakers should eliminate perverse incentives that distort market signals and exacerbate global warming.

PRUDENT PREPARATION:

Mounting climatic changes already are adversely affecting public health and safety as well as America's forests, water resources, and fish and wildlife habitat. As the nation works to prevent the most extreme impacts of global warming, we also must adapt to the changes already underway and prepare for more.

INTERNATIONAL SOLUTIONS:

U.S. government and civil society must act now to reduce their own greenhouse gas emissions, regardless of the actions of other nations. Because greenhouse gas emissions and the effects of climate change are global, however, the ultimate solutions also must be global. The U.S. must reengage constructively in the international process.

FAIRNESS:

We must strive for solutions that are fair among people, nations and generations.

To sign the Principles, contact William Becker at Natural Capitalism Solutions -- becker@natcapsolultions.com.
To see who has signed the Principles, go to www.summits.ncat.org/energy_climate/statement.php#undersigned.

APPENDIX 2: STATE OF THE CLIMATE MESSAGE

On Jan. 24, 2008 – just before President George Bush gave his final State of the Union message – the Presidential Climate Action Project delivered the following text to the White House and suggested the President incorporate it into his speech. The text was signed by scores of people including Nobel Prize Laureates and prominent thought leaders from around the world. President Bush did not use the State of the Climate Message, but it remains the type of candid information the American people should hear from their leaders.

As the United States approaches the end of the first decade of the 21st century, the most dangerous and difficult challenge of our time remains largely unaddressed. Global climate change continues unabated. The United States is the nation that is most responsible for the problem and most capable of contributing to the solution. Yet today, the United States stands virtually alone among developed nations in refusing to accept the need for decisive action.

Consequently, we regret to report that the state of the nation's climate policy is poor, and the climate and the ecosystems that depend upon it are showing increasing signs of disruption. Global climate change now threatens not only the environment, but also our national security, our economic stability, and our public health and safety. We can no longer discuss the State of the Union without assessing the state of the nation's climate.

The growing consequences of climate change have not appeared without warning. Physicist John Tyndall first identified the connection between the greenhouse effect and climate change in the 1860s. Swedish geochemist Svante Arrhenius predicted in 1896 that the burning of fossil fuels would result in global warming. During the last century, American scientists including David Keeling and Roger Revelle used actual measurements to confirm that carbon dioxide concentrations were rising. Keeling, Revelle and others began expressing their concerns about global warming to U.S. presidents of both parties in the 1960s, a half century ago.

Now, after 20 years of assessing evidence in the most thorough scientific undertaking in history, the Intergovernmental Panel on Climate Change (IPCC) has concluded unequivocally that climate change is underway, that it is primarily the result of our consumption of fossil fuels, and that time is growing short if we are to avoid catastrophic consequences on a global scale. As United Nations Secretary General Ban Ki-moon and the chair of the IPCC, Rajendra Pachauri, both have said, this is our defining moment.

In some areas, there have been positive developments during the past year. In quick succession last November and December, the IPCC released the last of its 2007 reports; representatives of 130 nations gathered at Bali to begin discussions on how the international community will collaborate after the Kyoto Protocol expires in 2012; and Congress passed a new energy bill with several provisions important to climate stabilization. Universities, nongovernmental organizations and research institutions have proposed hundreds of new policies and programs, including many the President can implement quickly to put America on the path to a clean and prosperous 21st century economy.

To date, more than 780 of the nation's mayors representing more than 77 million Americans have signed the Mayor's Climate Protection Agreement – a pledge to cut emissions by at least the amount required by the Kyoto Protocol. The majority of states and a growing number of the nation's counties have implemented or are developing climate action plans. Major corporations and investors recognize the financial liabilities of unabated climate change and are instituting new business models while supporting climate-friendly national policies. Today, climate change is emerging as an important issue in the 2008 presidential campaign. Several of the candidates have issued detailed climate action platforms. Those who have not should.

Our nation has the ideas and many of the tools necessary to create a highly efficient economy powered by low-carbon, renewable, domestic resources, able to provide this and future generations with security, opportunity and stewardship. We are ready for comprehensive, prompt and transformative climate action.

These positive developments are overwhelmed, however, by the growth in greenhouse gas emissions. Our emissions in the United States are among the highest in the world, roughly twice the per capita emissions of Western Europe or Japan. Yet the people of Western Europe and Japan outscore the people of the United States on several key quality-of-life indicators, including life expectancy and infant mortality. Atmospheric concentrations of greenhouse gases are climbing rapidly to levels beyond those ever witnessed by human beings, destabilizing the climate in ways we cannot predict and may not be able to control. The early signs of climate change are appearing much more quickly than predicted. These signs are not restricted to the Arctic and Antarctic. We are seeing troubling patterns emerging in the United States that are consistent with the predicted impacts of climate change. For example:

- Heavy downpours have increased, with less precipitation coming in light rains and more in very intense rains over much of the nation.
- Atlantic hurricane activity has increased in recent decades, correlated with rising sea surface temperatures.
- Wildfires have increased sharply in the West in association with increased drought, and scientific studies have shown that this increase is likely attributable to human-induced warming. Recent research by scientists at the National Center for Atmospheric Research and the University of Colorado concludes that fires in the United States are releasing about 290 million metric tons of carbon dioxide each year, the equivalent of 4% to 6% of the nation's total emissions from burning fossil fuels.
- Snow pack is diminishing as more precipitation occurs as rain and as earlier melt and runoff deplete water supplies for the late spring and summer months.
- The timing of animal migrations and vegetation blooming has shifted to earlier in the spring.
- Weeds including ragweed are thriving, with implications for human health, such as an increase in allergy suffering.
- Insect pests are thriving, causing infestations of bark beetles and other bugs that are destroying large expanses of America's forests.

Several critical developments must take place by the time the 44th President delivers the State of the Union address one year from now.

1. We must recognize that global climate change is an issue that transcends politics and partisanship. No responsible leader of any political persuasion wants our nation to face a future of increasing heat waves, drought, fires, disease, natural disasters, coastal inundation, and species extinction. No responsible leader wishes to bequeath to our children a nation in peril, with far less security, fewer resources and a lower standard of living than we enjoy today.
2. We must accept that while climate science is complex, our options are simple. We have three. We can reduce greenhouse gas emissions to keep the impacts of climate change from growing far worse. We can adapt to the changes already underway. Or we can suffer. Some suffering is inevitable and we must help those least able to cope. But the more quickly we reduce emissions today and prepare for the consequences of emissions from the past, the less suffering there will be. Those are the realities that we must acknowledge and act upon now.
3. We must recognize that national climate policy and national energy policy are inextricably linked. The United States must make a deliberate and rapid transition away from carbon-based fuels whose emissions cannot be captured and stored, whether the fuels come from foreign or domestic sources. We must turn with unprecedented speed to a future of energy independence, resource efficiency, renewable energy technologies and low-carbon fuels. Public policy must support only those technologies and resources that simultaneously stabilize the climate and enhance national energy security.
4. We must acknowledge that global climate change is more than an environmental issue. It affects national security by threatening instability in some of the most volatile regions of the world. It is an urgent economic issue in which the price of action is much less than the cost of inaction. It is a public health issue in which the spread of diseases in a warmer world can have devastating implications for our well-being and the costs of health care. It is a humanitarian issue, with the prospect of hundreds of millions of people being displaced by drought, hunger, and coastal flooding. It is a population and quality of life issue, challenging us to find ways for the world's people to achieve and sustain a decent standard of living. It is a moral issue, testing our character and our sense of responsibility to those least able to cope with climate change, as well as to future generations.
5. We must recognize not only the existence and threat of climate change, but the enormous opportunities that we can capture by addressing it. The transformation to a clean economy can open paths of possibility to all Americans, including those the old economy left behind. As the world's leading innovator, we should become the world's leading source of the technologies and products that will help all people in all nations – including our own – achieve dignity, security and high quality of life, while dramatically reducing effects on climate.
6. In addition to reducing greenhouse gas emissions, we must protect the Earth's natural ecological systems, particularly forests, which are the lungs of the planet and play a critical role in sequestering greenhouse gases. We have a global obligation to protect the world's tropical forests and to restore those that have been degraded.
7. We must not wait for other nations to go first. Developed and developing nations both must hold greenhouse gas emissions in check. But the United States will have little influence on other nations until we lead by example with a credible, comprehensive domestic program. Our first step in constructive engagement with the international community must be concrete action at home.

8. We must break the grip of special interests that are working to perpetuate the technologies, resources and practices that served us well in the past, but that now threaten our future. Special interests cannot be allowed to prevail over the public good. We must vastly increase support for research, development and deployment of clean energy technologies, and encourage the coal, oil and gas industries to invest in these technologies for their future, as well as the nation's.
9. We must restore federal funding for Earth sciences and expand our research into the regional, local, social and economic impacts of climate change. The national Climate Change Science Program must produce the knowledge and deliver the information the American people need to mitigate, anticipate and adapt to the adverse impacts of global warming. We must engage the talents of our best scientists and engineers and restore respect for science in the federal government.
10. We must redefine "clean" and think long-term. Each product and energy resource must be evaluated for climate impact over its entire life cycle. A fuel that emits little carbon when it generates energy, but that produces significant greenhouse gas emissions when it is mined, refined and transported, is not truly clean. A biofuel that reduces oil imports but destroys our soils is not sustainable.
11. Finally, we must recognize that global climate change is the leadership issue of our time. Given the long lag time involved in reducing atmospheric concentrations of carbon, we cannot procrastinate any longer. This is indeed the defining moment for each of us as voters and consumers, for our generation, for our leaders, and for our world. We must not fail.

It is our hope and expectation that when the next President of the United States reports on the state of the union, we will hear that our nation is firmly on the path to climate stability, to a new economy that has learned to prosper within the limits of the Earth's natural systems, to energy independence and security, and to renewed respect for the United States around the world.

If this is our defining moment, then let us be known as a people of courage, morality, vision and goodwill – a people who gladly accept the responsibility of ensuring that the America of tomorrow is even better than the America of today. That commitment to the future is required of us if we wish to keep faith with those who founded our nation, with those who have sacrificed for it and with those around the world who look to the United States of America for hope.

To see the list of people who have signed this message, go to http://www.climateactionproject.com/sign/sign_statement.php.

APPENDIX 3: ADMINISTRATION'S ENERGY & CLIMATE ACTIONS 2009-2010

The following list highlights the clean energy and climate actions the Obama Administration initiated or implemented during its first two years in office. This list does not include all of the Administration's efforts on these issues. For example, it generally does not mention the many grants agencies have made with stimulus funds, most of the Administration's legislative proposals, or regulations that indirectly affect greenhouse gas emissions or climate-related impacts.

EXECUTIVE AND AGENCY ACTIONS

Interior Department Accountability, Transparency, and Ethical Reform (January 2009)

Two days after being confirmed as the Interior Secretary, Ken Salazar announced plans to bring ethical reform to the Department and to clean up ethics controversies that occurred under the Bush Administration. Secretary Salazar ordered a top-to-bottom review of the Interior Department's oil and gas royalty program and asked the Department of Justice to reexamine the criminal conduct of a group of employees under the Minerals Management Service. (Following the BP oil spill in the Gulf in May 2010, Secretary Salazar directed that the MMS be reorganized into two agencies to separate the functions of collecting drilling royalties and regulating oil companies.)

Salazar also ordered that 77 oil and gas leases approved during the Bush Administration be withdrawn and reconsidered. At the urging of President Obama and Secretary Salazar, Congress withdrew a regulation that reduced the role of Fish and Wildlife Service scientists in Endangered Species Act reviews. Salazar also withdrew a controversial Bush Administration regulation that allowed mountaintop removal mining companies to dump their mining wastes into streambeds if it was found to be the cheapest disposal option.

Appliance Efficiency Standards (February 5, 2009)

President Obama ordered the Department of Energy (DOE) to clear its backlog of long-delayed appliance efficiency standards. DOE subsequently reported it had met every deadline, issuing six standards in 2009 that are expected to save consumers up to $300 billion over the next 30 years. In addition, the Environmental Protection Agency (EPA) and DOE took enforcement action against 35 appliance manufacturers to ensure their compliance with appliance efficiency standards and Energy Star requirements.

Renewable Energy on Public Lands (March 2009)

Secretary Salazar issued a Secretarial Order "making the production, development, and delivery of renewable energy top priorities for the Department of the Interior." The order established an energy and climate change task force to push the policy forward and to identify zones on U.S. public lands where Interior could push rapid and large-scale production of renewable energy. Secretary Salazar also opened up "Renewable Energy Coordination Offices" in Wyoming, Arizona, Nevada, and California to speed project processing.

Federal Transit Administration's TIGGER Program (March 2009)

Utilizing funds provided by Obama's American Recovery and Reinvestment Act, the Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) program increased its work with transit agencies across the country to identify and implement innovative ways to reduce energy consumption and harmful emissions.

Restore Integrity to Federal Climate Science (March 9, 2009)

President Obama issued an executive memorandum that directs federal agencies to develop policies and procedures to protect the integrity of federal climate science. More specifically, the President directed agencies to appoint qualified people to the federal climate science program, develop additional protections for whistleblowers and create rules to protect the integrity of ederal science. On Dec, 17, 2010, the White House issued guidelines to agencies to protect government science from political influence and to ensure that scientific conclusions are based on sound data.

Renewable Energy on the Outer Continental Shelf (April 2009)

President Obama established a new program under the Department of Interior's Minerals Management Service to authorize the leasing of federal waters on the Outer Continental Shelf for offshore wind, ocean current and other renewable energy projects.

High Speed Rail (April 16, 2009)

The President released a strategic plan to develop a national high-speed rail system in the United States. The plan began with an $8 billion investment through the Recovery and Reinvestment Act, and an additional $1 billion per year to get the projects started. The Department of Transportation (DOT) began work with several states to plan and develop high-speed rail corridors that will allow trains to travel 150-220 mph.

Renewable Energy Development Framework (April 22, 2009)

President Obama announced that the Department of Interior (DOI) had established a rulemaking process to govern management of the Mineral Management Service's Renewable Energy Program. The program will grant leases, easements, and rights-of-way for renewable energy development activities. This was especially relevant to new wind developments.

Increased Fuel Efficiency Standards (May 2009)

President Obama established a national policy to reduce greenhouse gas emissions with historic levels of fuel economy for new vehicles. Under the policy, the Department of Transportation (DOT) increased fuel efficiency standards to 35.5 miles per gallon in 2016. The EPA used its power to regulate CO_2 emissions to set a tailpipe emissions standard of 250 grams per mile for new vehicles sold in 2016 (2009 standard is 380 grams). On April 1, 2010, the EPA and DOT signed a joint final rule, finalizing the greenhouse gas emission standards and CAFE standards for 2012-2016 models.

Increased Appliance Energy Standards (June 2009)

Obama directed the DOE to implement more aggressive energy efficiency standards for household and commercial appliances. The Administration established more stringent energy efficiency standards for commercial and residential appliances including dishwashers, light bulbs, microwave ovens and kitchen ranges.

Partnership for Sustainable Communities (June 2009)

The Department of Housing and Urban Development (HUD), DOT and the EPA agreed to create a Partnership for Sustainable Communities. Key components of the partnership include:

- Enhancing integrated planning and investment.
- Providing a vision for sustainable growth.
- Developing livability measures and tools.
- Aligning HUD, DOT and EPA programs.

The Administration subsequently provided grants to several U.S. communities engaged in sustainability efforts.

Coal Mining Oversight (June 11, 2009)

The DOI entered into a memorandum of understanding with the EPA and the U.S. Army Corps of Engineers to minimize the negative environmental impacts of coal mining in six Appalachian states. The three government agencies announced they would strengthen oversight and regulation to minimize the consequences of mountaintop removal mining.

Interagency Ocean Policy Task Force (June 12, 2009)

President Obama created the Interagency Ocean Policy Task Force to recommended steps to "enhance national stewardship of the ocean, coasts and Great Lakes and promote the long term conservation and use of these resources."

Car Allowance Rebate System ("Cash for Clunkers") (June 24, 2009)

The DOT implemented a new buyer incentive program called "cash for clunkers," signed into law by President Obama, which helped consumers pay for newer, cleaner, more efficient cars. The program provided a significant boost, albeit short-term, to U.S. automakers and dealers.

New Lighting Standards (June 29, 2009)

The DOE issued new standards for fluorescent lamps manufactured in and imported to the U.S. beginning in mid-2012, resulting in:

- A 15% reduction in electricity usage by fluorescent lamps.
- A 25% reduction in electricity usage by incandescent reflector lamps.
- Consumer savings of $4 billion per year through 2042.
- Reduced CO_2 emissions by 594 million tons.
- Elimination of the need for 14 500-megawatt power plants.

Clean Air Act Waiver for California (June 30, 2009)

The EPA granted California a Clean Air Act waiver that allowed the state, along with 12 others, to adopt new "Clean Car Standards". The standards are expected to provide the following benefits to the 13 participating states:

- Consumption of fuel will decrease by 16 billion gallons in 2030
- Drivers will save $40 billion in fuel costs in 2030 (using the average price of $2.50 per gallon)
- Greenhouse gas emissions will be cut by 100 million metric tons in 2030, and almost one billion metric tons between 2010 and 2030

The waiver was denied under the Bush administration, but a Presidential Memorandum issued on January 26, 2009 directed the EPA to reconsider.

Endangered Species Program (August 2009)

The U.S. Fish and Wildlife Service issued a request for proposals that incorporate climate change into the Cooperative Endangered Species Conservation Fund (CESCF) grant program. The program provides funding to states and territories for species and habitat conservation actions on non-federal lands. The Service cited a draft strategic plan, "Rising to the Urgent Challenges of a Changing Climate", detailing how the agency will incorporate climate change into its activities over 5 years. For Fiscal Year 2010 grants, the agency invited states to propose "priorities, concerns and methodological approaches to the emerging science and potential impacts of climate change on candidate, listed, and recently recovered species" and "any revisions to the current ranking criteria that may be appropriate to incorporate the science and potential impacts of climate change."

People, Prosperity & Planet Program (August 27, 2009)

EPA awarded 55 grants to teams of college and university students to design "creative solutions to sustainability challenges in the developed and developing world". The $10,000 grants to each team will be used for projects involving water, energy, agriculture, the built environment, materials and chemicals. The teams will present their designs at the 7th Annual National Sustainable Design Expo on the National Mall, where they'll be judged. Winners will be awarded additional grants for students to implement their designs.

Department of Interior's Climate Change Response Strategy (September 2009)

Secretary Salazar launched the DOI's first-ever coordinated strategy to address current and future impacts of climate change. Actions include:

- A new Climate Change Response Council led by the Secretary, Deputy Secretary and Counselor, to coordinate the Department's response to climate change within and among the Department's bureaus.
- Eight regional Climate Change Response Centers to synthesize existing climate change impact data and management strategies.

Comprehensive Reporting and Management System for Greenhouse Gases (September 2009)

The EPA announced it will require large emitters to begin collecting and reporting greenhouse gas data. The requirement will cover approximately 85 percent of the country's largest emitters and apply to nearly 10,000 facilities. Data will be put into a publically searchable database.

Energy Efficiency Retrofits (September 14, 2009)

The DOE announced a new program to achieve a nationwide energy upgrade, which could save $100 million per year in electricity for houses and businesses. The program will have a "competitively-selected local energy efficiency projects" competition. This is a portion of the Energy Efficiency and Conservation Block Grant Program, funded in the stimulus package, to target community-scale retrofit projects that can have long-term impacts on energy use. The winning projects will serve as a national model for energy efficiency efforts.

Fuel Economy, Greenhouse Gas Reductions and Energy Security (September 15, 2009)

The DOT and EPA jointly proposed a rule to establish a national program to reduce greenhouse gases and improve vehicle efficiency. The program would build upon President Obama's partnership with the United Auto Workers union and environmental leaders to improve vehicle efficiency standards. The proposed program would conserve billions of barrels of oil, save consumers money, increase fuel economy, and reduce greenhouse gases. More specifically, the program would:

- Increase fuel economy by approximately 5 percent every year
- Reduce greenhouse gas emissions by nearly 950 million metric tons
- Save the average car buyer more than $3,000 in fuel costs
- Conserve 1.8 billion barrels of oil

Interagency Ocean Policy Task Force Interim Report (September 17, 2009)

The Administration released the Interagency Ocean Policy Task Force Interim Report for a 30-day public review and comment period. The report attempts to create a cohesive national approach to ensure environmental stewardship and accountability related to oceans. The Task Force was created by Presidential Memorandum on June 12, 2009.

Federal Leadership in Environmental, Energy and Economic Performance (October 2009)

President Obama issued Executive Order 13514 to increase the sustainability of federal operations. The order sets goals for federal agencies to improve their environmental, energy, and economic performance and report progress annually. For example, the order requires agencies to set 2020 greenhouse gas emissions reduction targets; increase energy efficiency; reduce fleet petroleum consumption 30 percent by 2020; conserve water; reduce waste; support sustainable communities; and leverage Federal purchasing power to promote environmentally responsible products and technologies. In addition, the Administration launched a "GreenGov Challenge" to help implement EO 13514 by tapping the ideas of America's 1.8 million Federal and military personnel on clean energy actions.

Interagency Climate Change Adaptation Task Force (October 5, 2009)

The Administration created a Climate Change Adaptation Task Force to develop a national strategy on climate change adaptation. The Task Force includes representatives of more than 20 federal agencies. In October 2010, the Task Force sent preliminary recommendations to the President, which included among other things eight "guiding principles" for federal climate adaptation efforts.

BP Refinery Permit (October 21, 2009)

The EPA determined that a permit issued by the state of Indiana for the expansion of BP's Canadian tar sands refinery in Whiting must be rewritten because it fails to account for various sources of air pollution.

Expedited Permitting of Power Transmission Construction on Federal Lands (October 28, 2009)

The Administration released a Memorandum of Understanding (MOU) between nine federal departments to make building transmission lines on federal lands faster and simpler. The MOU intends to speed approval of new transmission lines and reduce cost and uncertainty in the process – improvements that will help link renewable energy generation sites with consumers, improve grid reliability and reduce grid congestion.

Threats to Coral Reefs (October 30, 2009)

The National Oceanic and Atmospheric Administration (NOAA) and The Nature Conservancy announced they have partnered to protect the coral reefs of the Caribbean, Florida, Hawaii and the Pacific Islands. The agreement pledged $3.6 million from each entity to combat reef damage due to climate change, overfishing, and land-based pollution.

Greenhouse Gas Endangerment Finding (December 2009)

The EPA published an "endangerment finding," concluding that the six major greenhouse gases are dangerous to human life. The finding triggered the EPA's legal obligation to address greenhouse gas emissions under the Clean Air Act. (Subsequent to its finding, the agency's legal responsibility to regulate became more important with Congress's failure to approve a market-based cap-and-trade regime. The EPA announced it will regulate emissions only from large polluters, reportedly about 10,000 utility and industrial facilities.)

Greenhouse Gas Emissions Reduction Targets for Federal Operations (January 2010)

In compliance with EO 13514, federal agencies reported their greenhouse gas emission reduction targets to the White House. The White House announced the targets, if met, would reduce the government's emissions 28 percent by 2020 compared to 2005.

Stricter Standards for Smog-Causing Pollutants (January 2010)

The EPA set a primary standard for ground-level ozone of no more than 0.060 to 0.070 parts per million to be phased in over two decades. The rule would replace the 0.075 parts per million standard established by the Bush administration.

Onshore Oil and Gas Leasing Reforms (January 2010)

Interior Secretary Salazar announced several reforms for the Bureau of Land Management to improve protection of the nation's land, water, and wildlife. Among other things, the reforms are designed to reduce potential conflicts in the oil and gas leasing process. Salazar stated: "The previous Administration's 'anywhere, anyhow' policy on oil and gas development ran afoul of communities, carved up the landscape, and fueled costly conflicts that created uncertainty for investors and industry."

Corporate Climate Risk Disclosure (January 2010)

The Securities and Exchange Commission (SEC) issued guidance on how publicly traded companies should disclose risks related to climate change as part of the requirement for annual corporate risk disclosures. The SEC identified four areas where climate change could trigger disclosure requirements:

- Impact of Legislation and Regulation
- Impact of International Accords
- Indirect Consequences of Regulation or Business Trends
- Physical Impacts of Climate Change

Military Use of Biofuels (January 21, 2010)

The U.S. Department of Agriculture and the Department of the Navy signed a Memorandum of Understanding to encourage the development of advanced biofuels and other renewable energy systems for use by the military.

New Fuel Economy Standards for Model Year 2011 Cars and Light Trucks (January 26, 2009)

The DOT posted new fuel economy standards for cars and light trucks for the 2011 model year. This action follows President Obama's January 26, 2009 directive to review relevant legal, technological, and scientific considerations with more stringent fuel economy standards.

Sustainable Water Strategy (February 2010)

Interior Secretary Salazar issued a Secretarial Order establishing a new water sustainability strategy for the United States. The WaterSMART strategy aims to improve federal water policies and programs to meet the demands of population growth, climate change, rising energy demands, aging infrastructure, and environmental risks to water supplies. The initiative includes a water footprint reduction program for facilities and water-consuming operations to meet or exceed the requirements of Executive Order 13514.

Renewable Fuels Standard (February 2010)

The EPA issued a final renewable fuels standard to substantially increase the volume of renewable fuels including cellulosic bio-fuel that refiners must blend into transportation fuel. The standard will be fully implemented by the end of 2022, resulting in a 41 percent decrease in U.S. petroleum imports in that year alone. The new rule also established, for the first time, greenhouse gas emissions thresholds for renewable fuels. Lifecycle greenhouse gas emissions of renewable fuels must be less than 2005 emissions levels of the gasoline and diesel fuels that are being replaced.

NOAA Climate Program Office (February 2010)

The NOAA established a new climate change office to collect and provide climate data to governments, industry, and academia.

Office of Sustainable Housing and Communities (February 4, 2010)

U.S. Housing and Urban Development Secretary Shaun Donovan announced the launch of HUD's new Office of Sustainable Housing and Communities (OSHC). OSHC is designed to help build stronger, more sustainable communities by connecting housing to jobs, fostering local innovation and building a clean energy economy. Funded by Congress for the first time in HUD's 2010 Budget, OSHC is a key component of the Obama Administration's Partnership for Sustainable Communities.

Consideration of Greenhouse Gases in NEPA Analyses (February 18, 2010)

The Council on Environmental Quality (CEQ) issued draft guidance for public comment on when and how federal agencies must consider greenhouse gas emissions and climate change in their proposed actions. The draft guidance explains how agencies should analyze the environmental impacts of greenhouse gas emissions and climate change when they describe the environmental impacts of a proposed action under the National Environmental Policy Act. It provides practical tools for agency reporting, including a presumptive threshold of 25,000 metric tons of carbon dioxide equivalent emissions from the proposed action to trigger a quantitative analysis, and instructs agencies how to assess the effects of climate change on the proposed action. The draft guidance does not apply to land and resource management and does not propose to regulate greenhouse gases.

Hybrid Vehicles in the Federal Fleet (March 31, 2010)

The President announced that the General Services Administration will double the federal hybrid fleet in 2010, reducing petroleum consumption by the equivalent of 385,000 barrels of oil.

Expanding the Reporting of Emissions Data (March 2010)

In addition to the 31 industries already covered in the EPA's September 2009 GHG reporting rule, the EPA proposed adding the oil and natural gas sector, industries that emit fluorinated gases, and facilities that inject CO_2 for sequestration or to enhance oil and gas recovery. Under the proposed rule, the newly covered sources would begin collecting data on January 1, 2011.

Comprehensive Strategy for Energy Security (March 2010)

President Obama announced additional details of the administration's efforts to strengthen the nation's energy security:

- The EPA and DOT signed a joint rule finalizing the greenhouse gas emission standards and CAFE standards for 2012-2016 model vehicles.
- In addition to doubling the federal hybrid vehicle fleet, agencies downsized vehicle fleets overall and have required plug-in electric charging stations for all new facilities and for major retrofits.
- The Department of Defense is pursuing strategic initiatives to enhance energy security and independence and reduce harmful emissions, including encouraging the development and use of domestically produced advanced biofuels.

Homestar Energy Efficient Retrofit Program (March 2010)

As currently written, the Homestar program provides $6 billion in incentives for home retrofits. Individuals who buy energy-saving equipment for their homes would receive an on-the-spot rebate of $1,000-$1,500. Individuals interested in comprehensive retrofits for their home would receive up to $3,000 dollars for a comprehensive energy audit and retrofits that would achieve an energy savings of 20 percent.

National Action Plan on Demand Response (March 11, 2010)

The Federal Energy Regulatory Commission (FERC) released a draft for comment of a "National Action Plan on Demand Response", a plan which details efforts to reduce peak power demand and the need for new generation facilities. The FERC has estimated that current programs around the U.S. capture only a quarter of the market potential for demand response. The plan identifies technical assistance needed by states to maximize their demand response programs, outlines a national communications program that includes consumer education, and identifies analytic tools, model contracts, and other materials that various stakeholders can use in demand response programs. In April 2010, the FERC released a second draft plan, thereby completing the second stage of a three-stage process required by Congress.

Efforts to Improve Building Efficiency (March 16, 2010)

Secretary of Energy Steven Chu outlined steps the DOE is taking to increase building efficiency in the United States with potential reductions in energy use of 25-30 percent by 2030. Among other initiatives, the DOE is creating a cutting-edge tool home inspectors can use on a handheld device to assess potential energy savings and priorities, investing in training programs to improve the skills of building professionals, working on improved infrared technology that detects the quality of building insulation and caulking, launching a "Retrofit Ramp-Up" program to streamline home retrofits by reaching entire neighborhoods at a time, and working with the HUD on new financing tools for home retrofits, including payback of home improvement loans in property taxes.

Strengthening the Energy Star program (March 19, 2010)

The EPA and DOE announced a new two-step process to expand testing of commonly used household appliances for qualification under the Energy Star program. The Administration estimated that in 2009, the Energy Star program saved sufficient energy to avoid greenhouse gas emissions equal to those from 30 million cars, while saving consumers $17 billion on utility bills.

Guidance on Water Quality Related to Mountaintop Removal Coal Mining in Appalachia (April 1, 2010)

The EPA issued comprehensive guidance on the requirements of Sections 402 and 404 of the Clean Water Act. The practical effect will be to ensure that future mountaintop removal coal mining in Appalachia "will not cause significant environmental, water quality and human health impacts." At the same time, the EPA released two scientific reports from its Office of Research and Development summarizing the aquatic impacts of mountaintop removal mining and valley fills.

National Standards for Fuel Economy and Greenhouse Gas Emissions For Passenger Cars and Light Trucks (April 1, 2010)

The DOT and EPA announced they have jointly established federal rules for national greenhouse gas emissions standards and fuel economy standards. This will increase the fuel economy of all new passenger cars and light trucks sold in the U.S. starting with 2010 model year vehicles. Automakers must improve fleet fuel economy by approximately 5 percent per year. The standards set by NHTSA are estimated to reach 34.1 mpg by 2016, but the EPA standards require that 2016 models must achieve about 35.5 mpg (or 250 grams of CO_2 per mile).

Climate Change Indicators (April 27, 2010)

In a report titled "Climate Change Indicators in the United States," the EPA identified 24 "key indicators" showing how climate change impacts the health and environment of U.S. citizens. The agency said the indicators will help inform future policy decisions and will be used to gauge the success of climate change mitigation efforts. Several government agencies, academic institutions, and "other stakeholder organizations" collected the data. The EPA will continue to update and broaden the indicators in future reports.

Cape Wind Energy Project (April 28, 2010)

Interior Secretary Ken Salazar approved the Cape Wind renewable energy project in Nantucket Sound, the first wind farm on the U.S. Outer Continental Shelf. Cape Wind will generate enough power to provide 75 percent of the electricity for Cape Cod, Martha's Vineyard, and Nantucket Island. The project will also cut carbon emissions by 700,000 tons annually. Secretary Salazar said several similar projects have been proposed for other northeast coastal states, "positioning the region to tap 1 million megawatts of offshore Atlantic wind energy potential."

Farm Energy Generation Agreement (May 3, 2010)

The EPA and U.S. Department of Agriculture (USDA) announced an interagency agreement to expand the AgStar program to promote renewable energy generation in and reduced greenhouse gas emissions from livestock operations. The agreement will provide nearly $4 million to help farmers overcome barriers to recovering and using biogas from animal wastes. It will expand technical assistance to farmers and improve standards for construction of biogas recovery systems.

In addition, the USDA announced that it will conduct the first national survey of renewable energy production on America's farms. The USDA said the most recent agriculture census found more than 20,000 farms and ranches are producing energy with solar, wind, and methane digestion systems. The new "On-Farm Production Survey" will be the first comprehensive effort by the USDA's National Agricultural Statistics Service to collect and publish detailed data on farm production of renewable energy. The data will be published in February 2011.

Emission Thresholds for Large Emitters (May 13, 2010)

The EPA announced its final rule to limit greenhouse gas emissions from the largest stationary sources (typically power plants and oil refineries), effective January 2011. Large emitters will be required to include greenhouse gases in their Clean Air Act permits if they increase those emissions by at least 75,000 tons per year. In July 2011, all new facilities with greenhouse gas emissions of 100,000 tons per year or more and existing facilities with planned modifications and emissions of at least 75,000 tons per year will be required to demonstrate the use of best available control technologies. The EPA will begin another rule-making process in 2011 (and complete it by July 1, 2012) regarding phasing in additional GHG emitting sources and will consider whether small emitting sources (less than 50,000 tons per year) will be permanently exempt from permitting.

Livable Communities (June 21, 2010)

Transportation Secretary Ray LaHood and HUD Secretary Shaun Donovan announced a joint effort on sustainable communities. The two departments will award $75 million for local planning activities that lead to projects integrating transportation, housing, and economic development. The Partnership for Sustainable Communities established six principles of "livability" for the program:

1. Provide more transportation choices.
2. Promote equitable, affordable housing.
3. Enhance economic competitiveness.
4. Support existing communities.
5. Coordinate policies and leverage investment.
6. Value communities and neighborhoods.

Geologic Potential for Carbon Sequestration (July 9, 2010)

The US Geological Survey (USGS) finalized a new methodology for assessing the potential for sequestering carbon emissions in geological formations. The USGS will begin implementation of the methodology with the hope of reducing the effects of climate change.

Solar Demonstration Zone (July 8, 2010)

The DOE and DOI established a 25 square mile section of the Nevada Test Site as a Solar Demonstration Zone. The site, formerly a nuclear test site, will be used for developing and testing new solar technologies.

Executive Order on Oceans (July 19, 2010)

The President issued an executive order that adopted and directed federal agencies to implement the final recommendations of the Interagency Ocean Policy Task Force he created on June 12, 2009. Among other things, the Task Force recommended creating a "National Policy for the Stewardship of the Ocean, Coasts and Great Lakes" and a National Ocean Council for stronger and more coordinated governance of ocean resources.

USDA/DOI Joint Research (July 27, 2010)

Secretary of Agriculture Tom Vilsack and Secretary of Interior Ken Salazar announced funding for joint research projects to study the effects of climate change on freshwater ecosystems in the Northwestern and Southeastern U.S.

New Fuel Economy Labels for Vehicles (August 8, 2010)

The DOT and EPA proposed new fuel economy labels for cars and light trucks. One option would give vehicles a letter grade for overall fuel economy, expected five-year cost savings, and greenhouse gas emissions performance. A second design would include information on fuel economy and emissions, in addition to the miles per gallon and annual fuel cost found on current labels.

Agency Greenhouse Gas Reduction Plans (September 9, 2010)

The White House issued the first annual report of the greenhouse gas reduction plans for more than 50 federal agencies in compliance with EO 13514, which required agencies to report on and update their emission reduction plans annually.

New Efficiency Standards for Refrigerators (September 28, 2010)

The DOE proposed new efficiency standards for refrigerators that would decrease energy use of most units by 20-25 percent by 2014. As proposed, the standards would:

- Save 4.5 quadrillion BTUs over thirty years
- Eliminate 4.2 gigawatts of generating capacity by 2043 (8-9 coal-fired power plants)
- Decrease carbon dioxide emissions by 305 million metric tons between 2014 and 2043

Renewable Energy Leadership in the Military (October 2010)

U.S. military officials announced that for the first time, field units engaged in warfare were supplied with solar panels, solar shields, solar chargers for phones and computers, and energy-saving lights to power their encampment. The equipment went to a unit of 150 Marines in Afghanistan, part of the military's effort to decrease the dependence of front-line units on fossil fuels.

The news followed a series of efforts to incorporate renewable energy into military bases and operations, including:

- The U.S.S. Makin Island, the Navy's first hybrid vessel, which saved 900,000 gallons of fuel on its maiden voyage from Mississippi to San Diego
- The Air Force's goal to certify its entire fleet to run on biofuels by 2011
- Navy Secretary Ray Mabus' announcement that 50 percent of the power for the Navy and Marines will come from renewable resources by 2020, including energy for bases, ships and vehicles

First Large-Scale Solar Plant on Public Lands (October 5, 2010)

Secretary of Interior Salazar announced approval of two solar plant projects on public lands in the California desert. The projects have the potential to produce up to 754 megawatts of renewable energy, enough to power as many as 566,000 American homes.

Solar Panels on the White House (October 5, 2010)

The Administration announced plans to install 25-75 solar panels and a solar hot water system on the roof of the White House by spring 2011. The system is expected to produce approximately 19,700 kilowatts of energy per year.

Guidance on Agency Emissions (October 6, 2010)

The White House released guidance for federal agencies on how to proceed with plans to reduce greenhouse gas emissions. The guidance follows Executive Order 13514 issued in October 2009, setting a goal of 28 percent reduction in emissions over 10 years. The guidance focused on land use, carbon offsets, and the burning of biomass to reduce carbon emissions.

Report on Offshore Wind Power Potential (October 7, 2010)

The DOE released a comprehensive report by the National Renewable Energy Laboratory (NREL), analyzing U.S. offshore wind power potential. NREL concluded that harnessing even a fraction of the nation's potential offshore wind resource, estimated to be more than 4,000 gigawatts, could create thousands of jobs and help revitalize America's manufacturing sector, reduce greenhouse gas emissions, diversify U.S. energy supplies, and provide cost-competitive electricity to key coastal regions. The report also reaches the conclusion that while significant challenges remain, effective research, policies and market commitment will enable offshore wind to play a significant role in the country's energy future.

Local Leaders as Advisors (October 14, 2010)

EPA Administrator Lisa Jackson announced the appointment of 30 local, state, and tribal officials to serve on the agency's Local Government Advisory Council. The Council advises the EPA on a range of environmental issues affecting communities.

Rural Renewable Energy (October 21, 2010)

Agriculture Secretary Tom Vilsack announced several initiatives to promote production of renewable fuels in rural areas to help revitalize their economies. The purpose of the programs is to "ensure that a sufficiently large base of new, non-food, non-feed biomass crops is established in anticipation of future demand for renewable energy" and to "create jobs that will stimulate rural economies across the nation". Among the initiatives is the Biomass Crop Assistance Program that provides payments of up to 75 percent of the cost of establishing eligible perennial biomass crops.

Efficiency Standards for Heavy Vehicles (October 25, 2010)

The Administration proposed the first national standards on emissions and fuel economy for heavy trucks. The standards, based on research by the National Academy of Sciences and written in consultation with vehicle manufacturers and trucking companies, will save more than $40 billion in fuel costs and are designed to achieve a 20 percent reduction in fuel consumption and carbon dioxide emissions by 2018.

Future Efficiency Standards for Cars and Light Trucks (November 2010)

The National Highway Traffic Safety Administration announced it will begin developing new fuel economy standards for cars and light trucks, covering model years 2017-2025. The agency said it expects to finalize the standards in July 2012. The Administration did not specify what the new standards would be.

Home Energy Scoring Program (November 9, 2010)

Vice President Biden announced a Home Energy Score pilot program that will give homeowners reliable information about their homes' energy efficiency. Under the voluntary program, consumers will be given an energy score for their homes, ranking them between 1 and 10 and comparing them to other homes in their regions. The reports will include customized, cost-effective recommendations to reduce home energy costs. Trained and certified contractors will use a standardized assessment tool developed by DOE and Lawrence Berkeley National Laboratory to evaluate each home and generate action items for homeowners or prospective home buyers.

Greenhouse Gas Reporting Requirements for Petroleum and Natural Gas Industries (November 9, 2010)

EPA finalized greenhouse gas reporting requirements for the petroleum and natural gas industries as part of its mandatory reporting program. Beginning in 2011, petroleum and natural gas facilities that emit more than 25,000 metric tons of carbon dioxide equivalent a year are required to monitor and report all greenhouse gas emissions to the agency. Data collection for petroleum and natural gas sources will begin January 1, 2011, with first annual reports due to EPA March 31, 2012.

Recovery through Retrofit Program (November 9, 2010)

Vice President Joe Biden announced the "Recovery through Retrofit" program to address several barriers to energy efficiency improvements in residential buildings – improvements that reduce household energy costs and create jobs while cutting greenhouse gas emissions. As part of the new program, the Administration announced a Home Energy Score rating system that provides a standardized system for utilities and contractors to assess the energy efficiency of a home, making it easier to identify cost-saving improvements. The Administration also announced a Power Saver Loan Program to provide low-interest loans from a variety of mainstream lenders. The Vice President said the Administration's goal is to upgrade 100 million homes nationwide.

Guidance for States to Reduce Emissions from the Largest Industrial Facilities (November 10, 2010)

EPA issued guidance to States on best available control technologies that coal plants and manufacturers can use to cut their greenhouse gas emissions when they build or expand facilities. To address industry concerns, EPA said it would not force the industries to adopt specific technologies to reduce their emissions, and it emphasized energy efficiency as a compliance tool.

Greening the Federal Supply Chain (November 16, 2010)

Martha Johnson, Administrator of the General Services Administration, announced a voluntary collaboration – the GreenGov Supply Chain Partnership – between the federal government and its suppliers to "create a greener, more efficient supply chain". Administrator Johnson said the collaboration will help GSA carry out its mandates under Executive Order 13514. The program includes a small business pilot program in which GSA will help small companies measure, report and reduce their greenhouse gas emissions. GSA's goal in the collaboration is to develop an incentive-based approach that gives contract advantage to companies that track and disclose their greenhouse gas emissions.

Sustainability Concepts at EPA (November 30, 2010)

EPA Administrator Lisa Jackson announced that the EPA commissioned the National Academy of Sciences to define how the principles of sustainability can be incorporated into the agency's programs. The EPA asked for the Academy to develop a "Green Book" that identifies how sustainability principles can be guide the agency's environmental protection activities.

Carbon Sequestration Demonstration Initiative (December 9, 2010)

Agriculture Secretary Vilsack announced the U.S. Department of Agriculture will demonstrate ways landowners can reduce greenhouse gas emissions and increase carbon sequestration while improving their financial bottom line. USDA's Natural Resources Conservation Service will provide $15 million in Conservation Innovation Grant funds and other assistance for large-scale demonstration projects to accelerate the adoption of new approaches to reduce greenhouse gas emissions and promote carbon sequestration.

Superior Energy Performance Program (December 10, 2010)

DOE announced the first industrial plants in the United States to be certified under the Superior Energy Performance program – a new energy efficiency program for industries. The certification program is accredited by the American National Standards Institute. DOE said the program will serve as a roadmap for industrial facilities to "continually improve their efficiency and maintain market competitiveness." The industrial manufacturing sectors account for one-third of U.S. energy use.

Solar Energy Zones (December 16, 2010)

Energy Secretary Steven Chu and Interior Secretary Ken Salazar announced a comprehensive environmental analysis of where solar energy projects can be built on public lands in six Western states most suitable for generating electricity from sunlight. The Draft Solar Programmatic Environmental Impact Statement identifies potential "solar energy zones" in Arizona, California, Colorado, Nevada, New Mexico and Utah. Meantime, according to press reports, the Bureau of Land Management suspended permitting for four of the seven most promising wind power installations on public lands because of concerns that wind turbines would kill golden eagles.

In 2005, Congress directed the Interior Department to approve enough renewable energy production on public lands to power the equivalent of 5 million homes. Twenty-eight wind farms were operating on public lands at the time of the suspension.

Guidelines for Federal Science (December 17, 2010)

The White House released guidelines to insulate government scientists and their research from political interference. Under the guidelines, federal scientists are free to speak to the media about their work and agencies are prohibited from revising or suppressing reports by independent advisory committees.

Protection of "Wild Lands" (December 22, 2010)

Interior Secretary Salazar issued Secretarial Order 3310, directing the Bureau of Land Management to designate and protect federal back-country lands with wilderness characteristics. The order directs BLM to classify the areas as "Wild Lands" and to maintain an inventory of lands that qualify for the designation. BLM manages 245 million acres of land in the United States, more than any other federal agency. While lands classified as "wilderness areas" must be designated by Congress, Salazar's order allows the Department of Interior to place "wild lands" in a protected status by administrative action. Salazar's order notes that wild areas are important for carbon sequestration, watershed protection, water purification and other ecosystem services, as well as non-motorized recreation.

Regulation of Emissions from Power Plants and Refineries (December 23, 2010)

EPA announced it will propose greenhouse gas emission standards for existing power plants and oil refineries in 2011 and will begin regulating the facilities in 2012. Power plants and oil refineries are responsible for 40 percent of U.S. greenhouse gas emissions.

Regulation of Greenhouse Gases (December 23, 2010)

The Environmental Protection Agency issued a final series of actions to begin regulating greenhouse gas emissions from large sources starting in January 2011. The actions give the EPA authority to permit greenhouse gas emissions in seven states until the states revise their regulations to take over the permitting process. EPA officials said they planned to disapprove part of the Texas permitting program and would take over permitting in that state.

LEGISLATIVE ACTIONS

American Recovery and Reinvestment Act (February 2009)

The Administration championed and won congressional approval of the American Recovery and Reinvestment Act, including more than $80 billion for clean energy investments. The appropriation ranked as the largest energy bill in U.S. history. Significant components included:

- $23 billion for doubling renewable energy generation and advanced energy manufacturing
- $16 billion for next-generation vehicles including plug-in hybrids, electric vehicles, clean energy fuels and next-generation batteries
- $12.6 billion in funding for key science agencies to support advanced clean energy research and development
- $10 billion for carbon capture and sequestration projects
- $8 billion in grants for America's first nationwide program of high-speed intercity rail lines
- $5 billion for the Weatherization Assistance Program
- $4 billion in investments in smart-grid technologies
- $4 billion for DOE's Loan Guarantee Program
- $3.2 billion in Energy Efficiency and Conservation Block Grants
- $3.1 billion for DOE's State Energy Program
- $600 million in grants for bio-refineries
- $400 million for the Advanced Research Projects Agency – Energy (ARPA-E)
- $300 million for the Energy Efficient Appliance Rebate Program and Energy Star Program

2010 Federal Budget (April 2009)

President Obama's first budget proposed significant investments in energy efficiency, renewable energy, and advanced research and development. These investments included:

- $2.25 billion for energy efficiency and renewable energy.
- $208 million to modernize and secure the nation's electricity grid.
- $4.9 billion to the Office of Science for scientific research critical to addressing the nation's long-term energy needs.

2011 Federal Budget (February 2010)

The President's 2011 budget proposal included significant increases for investments in energy efficiency, renewable energy, and advanced research and development. They included:

- $300 million for the Advanced Research Projects Agency – Energy (ARPA-E)
- $325 million for advanced vehicle technologies
- $231 million for energy-efficient building technologies
- $302 million for solar programs
- $75 million for State Energy Program grants
- $385 million for weatherization programs
- $123 million for wind programs

In addition, the President proposed phase-out of $36.5 billion in taxpayer subsidies and tax loopholes for the big five oil companies (BP, Chevron, Conoco Phillips, ExxonMobil, and Shell).

INTERNATIONAL ACTIONS

Bilateral Agreement with Mexico (April 2009)

The agreement established a mechanism for political and technical cooperation and information exchange to facilitate common efforts to develop clean energy economies.

Fifth Summit of the Americas (April 2009)

The summit produced a partnership between the U.S. and 33 democratic governments to collaborate on energy security and mitigation of climate change.

Major Economies Forum on Energy and Climate (July 2009)

President Obama re-launched this forum, first created by President George W. Bush, and reestablished dialogue on climate change and clean energy between 17 of the largest developed and developing economies. In July the leaders of the countries involved in the forum released a declaration of a shared vision for future cooperation, which included:

- A commitment to transparent mitigation strategies including measurement, reporting, verification and the creation of low-carbon growth plans
- A statement that adaptation to the adverse effects of climate change is essential and that there is a need to assist the countries most vulnerable to these effects
- The creation of a Global Partnership to drive transformational low-carbon, climate-friendly technologies
- A statement that financial resources for mitigation and adaptation should be scaled up urgently and substantially to aid developing countries

North American Leaders' Declaration on Climate Change and Clean Energy (August 2009)

The Administration agreed with Canada and Mexico to collaborate on several climate and clean energy initiatives. One significant component is to work together under the Montreal Protocol to reduce hydrofluorocarbon emissions.

G-20 Agreement to Phase out Fossil Fuel Subsidies (September 2009)

The G-20 agreed with President Obama's proposal to phase out about $300 billion annually in fossil energy subsidies over the medium term and to work with other countries to do the same.

Bilateral Agreement with Canada (September 2009)

The U.S. and Canada agreed to enhance cooperation on carbon capture and sequestration, as well as clean energy research and development for biofuels, energy efficiency, and smart grid development.

Bilateral Agreement with China (November 2009)

The U.S.-China agreement established a comprehensive plan for mutual cooperation on climate and clean energy in the following areas: greenhouse gas inventories, energy research, electric vehicles, energy efficiency, renewable energy, carbon capture and sequestration, shale gas, nuclear, and public-private partnerships on clean energy. The agreement established a U.S.-China Clean Energy Research Center to collaborate on the development of green technologies.

Bilateral Agreement with India (November 2009)

The agreement includes comprehensive collaboration on research and deployment of clean energy and on capacity building in India for climate adaptation and environmental governance.

Copenhagen Accord (December 2009)

President Obama played an integral role in creating the Copenhagen Accord during COP-15 in Copenhagen. While it did not include binding and enforceable commitments for greenhouse gas reductions, the accord is considered a step towards reaching a global climate deal. In three of its most important provisions, the accord:

- Called for countries to take action to keep global average temperatures from rising by more than 2 degrees Celsius above pre-industrial levels
- Established a transparent framework for evaluating countries' performance against their commitments
- Called for a global fund that will reach $100 billion a year by 2020 to protect vulnerable communities and forests

The majority of nations have signed the accord.

Financial Assistance for Developing Nations (December 2009)

Secretary of State Hillary Clinton announced the United States was prepared to spend tens of billions of dollars over the next several decades to help developing nations gain access to clean energy technologies and to adapt to climate impacts. In the short term, Secretary Clinton said, the U.S. would help create a $30 billion international fund.

Subsequent press reports indicated the United States' ability to keep this commitment could be in doubt due to Congress's failure to pass a climate bill that would generate revenues from carbon trading and due to leadership changes in Congress. President Obama asked Congress for nearly $2 billion in fiscal year 2011. The same reports indicated the United States will triple its climate-related financial contributions to developing nations in fiscal year 2010, using funds already appropriated. That would bring U.S. funding to $1.7 billion for the 2010 fiscal year.

Financing of Coal Plants by Multilateral Development Institutions (December 2009)

The Treasury Department issued guidance to the senior management of the multilateral development banks related to financing coal-fired power plants in developing countries. The guidance covers issues such as analysis of alternatives to coal plants, power sector policy reform, and capacity building. By the fall of 2010, environmental organizations protested that the World Bank was still funding fossil energy projects at record levels. The Bank responded that its funding for renewable energy projects had increased 430% from 2007-2010, compared to 300% for fossil energy projects.

International Collaboration on Energy Efficiency (May 7, 2010)

The U.S. joined 15 other countries and the European Commission at the first Policy Committee meeting of the International Partnership for Energy Efficiency Cooperation (IPEEC) to promote global collaboration on energy-saving programs and policies.

Reducing Ship Emissions (August 2010)

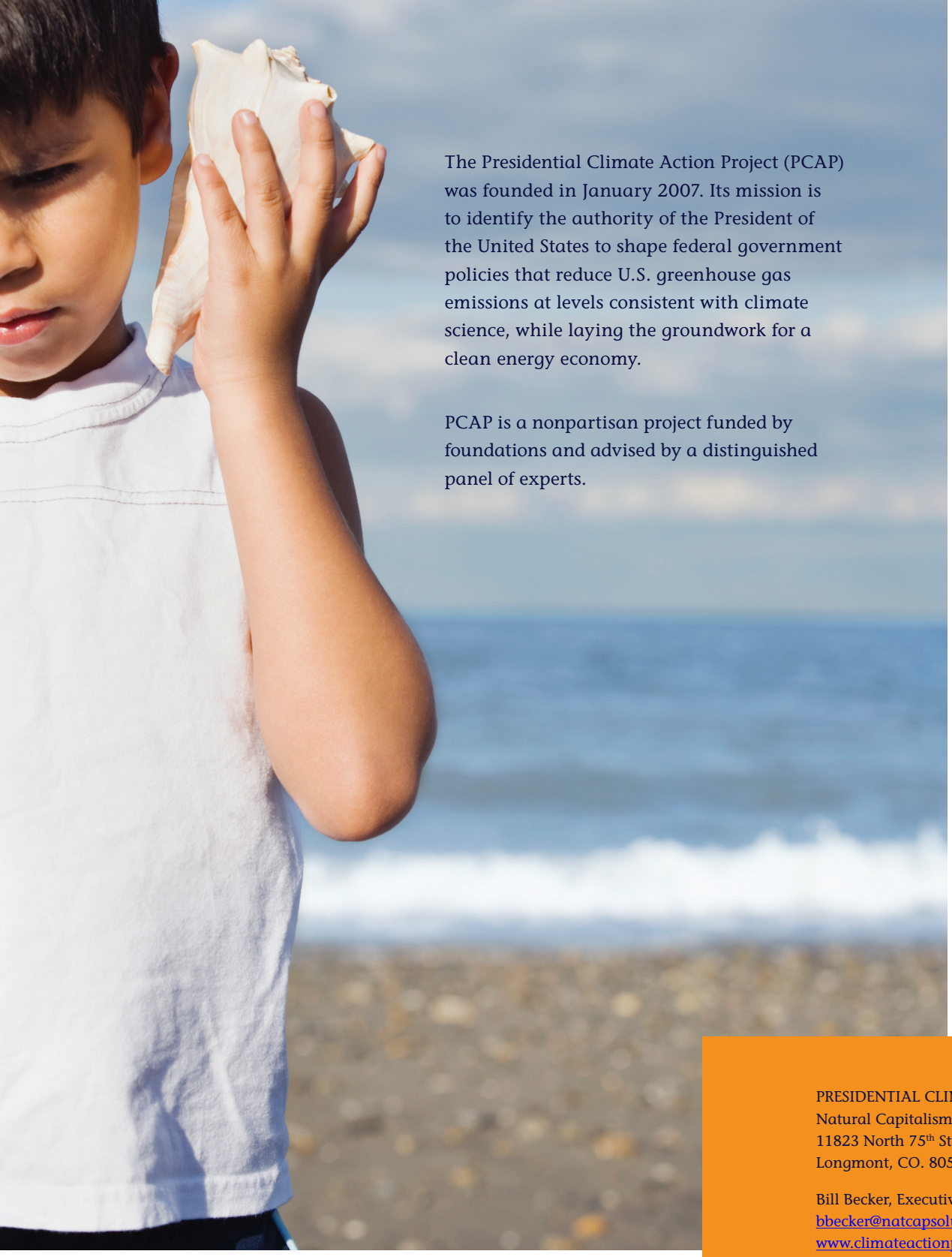
The EPA proposed to the International Maritime Organization (IMO) that parts of the Puerto Rico and US Virgin Islands coasts be designated as Emission Control Areas (ECAs). Ships operating around the Puerto Rico and US Virgin Islands coasts would be required to meet emissions standards set by the IMO in October of 2008. These standards are expected to reduce SOx emissions by 80% by 2015 and NOx emissions by 85% by 2016.

Global Methane Initiative (October 1, 2010)

The EPA announced a collaborative effort with 36 foreign governments, Mexico's Ministry of the Environment, the European Commission, the Asian Development Bank, and the Inter-American Development Bank to reduce global levels of methane. The U.S. pledged $50 million to support projects that reduce methane emissions and urged other developed countries to do the same.

Renewable Energy and Energy Efficiency Export Initiative (December 7, 2010)

Eight federal agencies launched a coordinated effort to promote renewable energy and energy efficiency exports. According to the U.S. Department of Energy, the Renewable Energy and Energy Efficiency Export Initiative is the first coordinated effort of its kind by the U.S. government. The Initiative includes 23 interagency actions to facilitate a significant increase in renewable energy and energy efficiency exports over five years. Participating agencies include the Departments of Commerce, Energy, State, and Agriculture, the Export-Import Bank of the United States, the Overseas Private Investment Corporation, the U.S. Trade and Development Agency, and the Office of the United States Trade Representative.



The Presidential Climate Action Project (PCAP) was founded in January 2007. Its mission is to identify the authority of the President of the United States to shape federal government policies that reduce U.S. greenhouse gas emissions at levels consistent with climate science, while laying the groundwork for a clean energy economy.

PCAP is a nonpartisan project funded by foundations and advised by a distinguished panel of experts.

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