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2013 POLICY RECOMMENDATIONS FOR THE OBAMA ADMINISTRATION

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Climate Change Policy: Recommendations for the Next Administration

By Ronald L. Sass, Ph.D.

Overview

In 2012, two-thirds of our country experienced severe to extreme drought. The period from January–August broke the year-to-date record for most acreage burned by wildfires (6,888,342 acres). In June, Tropical Cyclone Debby produced record-breaking rainfall across Florida, dropping more than 20 inches of rain in 24 hours and the derecho event slammed 700 miles of the United States with violent winds that left 22 dead and millions without power (Somerville and Masters 2012). And in late October, Hurricane Sandy devastated the Mid-Atlantic and Northeastern United States causing an estimated \$50 billion in losses and killing 43 people in New York City alone. It is time that we Americans realize the realities of climate change, and aggressively and seriously respond to them.

The world, after more than 5,000 years of relative climate stability, is now entering a period of rapid climate change—increasing temperatures, rising sea levels, intense storms, floods, and droughts. Climate change is affecting nearly every aspect of the lives of all people and its effects will only intensify in the future. Events of extreme weather this year have again demonstrated that we as a nation are less than fully prepared to deal with these changes. Furthermore, public opinion about climate change, its causes, and its effects is divided, in large part because informed public knowledge about these issues is lacking.

Many states and local governments are advancing ways of slowing down climate changes using methods that are important and worthwhile. Because both the causes and effects of climate change are global, our response must also be global, thereby making climate change a top priority of the federal government.

In order to facilitate this response, the following set of recommendations is proposed as a strategy to elevate climate change to a global priority and accelerate national discourse and action by increasing public understanding and acceptance/support of climate change, reducing emissions of greenhouse gases, and managing and adapting to rising temperatures.

- **Recommendation 1:** Establish a federal policy and governmental infrastructure for climate change that is grounded in the best available science, technical information, and advice in order to direct and coordinate resource mobilization and increase public understanding and support.

- 1.1 Recognize the consensus on the causes and effects of climate change that exists within the scientific community.
- 1.2 Begin a national conversation on climate change with all Americans, led by leaders of the science, business, security, faith, and environmental communities.
- 1.3 Create a Cabinet-level department responsible for the climate change program of the United States.
- **Recommendation 2:** Promote programs and fund research in both the public and private sectors to drive innovation and action that will prepare communities for the consequences of climate change such as extreme weather, forest fires, sea level rise, and floods.
 - 2.1 Strengthen the resilience of our communities to extreme weather events.
 - 2.2 Consider specific, localized-training with the National Guard in combating locally characteristic natural disaster threats.
- **Recommendation 3:** Develop a program for a rational transition from fossil fuel to renewal energy sources.
 - 3.1 Encourage a program in residences and businesses for a more efficient use of energy, fuel efficiency, and mass transportation.
 - 3.2 Reduce pollution from power plants and review regulations on coal-fired plants.
 - 3.3 Promote nuclear power plants as an interim low-carbon source of energy.
 - 3.4 Fund research and development of new and better methods for the storage of energy.
 - 3.5 Establish a carbon tax (or assessment) to reflect the true cost of fossil fuel usage, thereby leveling the playing field significantly and encouraging the development of alternative energy sources.

Background

The quantitative scientific analysis of climate change, although nearly 200 years old, reached an international consensus in 1985 with the declaration from the Villach Conference stating that “in the first half of the next century, a rise of global mean temperature could occur which is greater than any in man’s history” (Bolin 1986). By 2007, the Intergovernmental Panel on Climate Change (IPCC), speaking for the world’s governments and representing scientists from a majority of the world’s countries, reported the conclusion that humans were changing the climate through greenhouse gas emissions (Pachauri and Reisinger 2007). The position statement on the human impacts on climate, adopted in revised form in 2007 by the American Geophysical Union (AGU), begins with the following statement (AGU 2007):

“The Earth’s climate is now clearly out of balance and is warming. Many components of the climate system—including the temperatures of the atmosphere,

land, and ocean; the extent of sea ice and mountain glaciers; the sea level; the distribution of precipitation; and the length of seasons—are now changing at rates and in patterns that are not natural and are best explained by the increased atmospheric abundances of greenhouse gases and aerosols generated by human activity during the 20th century.”

Although much remains to be done to completely understand all aspects of climate change, there is no doubt that the changes in the climate now being observed are consistent with our understanding of the underlying scientific concepts. There is a very strong consensus among all climate scientists, indeed near unanimity, that continued human emissions of greenhouse gases, particularly from the combustion of fossil fuels, are seriously affecting the climate of the Earth in an adverse way. This consensus is sound enough to warrant strong political and economic response to mitigate the causes of these changes and to plan to adapt to the consequences. Some details of this response are proposed in the following recommendations.

Recommendation 1: Establish a federal policy and governmental infrastructure for climate change that is grounded in the best available science, technical information, and advice in order to direct and coordinate resource mobilization and increase public understanding and support.

1.1 Recognize the consensus on the causes and effects of climate change that exists within the scientific community.

To be effective, an American policy on climate change must be grounded in the best science available. The climate science community is in virtual agreement on the causes and effects of climate change, both current and past as well as the future. The National Research Council (2010) has maintained: “Some scientific conclusions or theories have been so thoroughly examined and tested, and supported by so many independent observations and results, that their likelihood of subsequently being found to be wrong is vanishingly small. Such conclusions and theories are then regarded as settled facts. This is the case for the conclusions that the Earth system is warming and that much of this warming is very likely due to human activities.”

1.2 Begin a national conversation on climate change with all Americans, led by leaders of the science, business, security, faith, and environmental communities.

Climate change is potentially a more important problem in the coming decades than World War II was in the 1940s. The massive news blitz then explaining the war involved all available media—radio, stage, screen, newspapers, and magazines. The case for climate change must be communicated to the American public with the same intensity so that people may be correctly informed and ready to accept responsibility for mitigation and have the will for the adaptation necessary to meet the challenge of the changing climate. The consensus for action that exists in the scientific community must be extended to include business, security, faith, and other communities. The president can, through the authority of his office, bring these groups together with scientists in order to foster a

national understanding of the daunting problems facing us with respect to the changing climate and begin to address solutions to these problems. The American public currently shows a growing concern over the increase in extreme weather events and a desire to be better informed about them. For example, a new Rasmussen Reports national telephone survey finds that 68 percent of likely U.S. voters now say global warming is at least a somewhat serious problem, including 38 percent who think it is very serious (National Resources Defense Council 2012).

1.3 Create a Cabinet-level department responsible for the climate change program of the United States.

A viable climate change program by the federal government will, over the next few decades, become bigger than any single existing governmental organization. Its cost will be in the trillions of dollars per year (Natural Resources Defense Council 2008). This fact can best be seen in a discussion of the current climate change budget. In May 2011, the Government Accountability Office (GAO), in a report to the House of Representatives' Committee on Natural Resources (GAO 2011), stated: "Climate change is a complex, crosscutting issue that poses risks to many existing environmental and economic systems, including agriculture, infrastructure, ecosystems, and human health." A 2009 assessment by the United States Global Change Research Program (USGCRP) found that climate-related changes—such as rising temperature and sea level—will combine with pollution, population growth, urbanization, and other social, economic, and environmental stresses to create larger impacts than from any of these factors alone.

According to the Office of Management and Budget's (OMB) June 2010 report, nine of the 15 Cabinet-level executive departments, along with seven other federal agencies, received funding for climate change activities in fiscal year 2010. In addition, entities within the Executive Office of the President (EOP) such as the Office of Science and Technology Policy (OSTP) and federal interagency coordinating bodies like USGCRP work together to ensure federal climate change activities are guided by the latest climate science." As the effects of climate change become more apparent and as the cost of extreme weather events grows, it will become increasingly obvious that more and better coordination of efforts to mitigate, adapt to, and pay for climate change will be needed. This same GAO report (2011) finds that: "Federal officials do not have a shared understanding of strategic priorities. This is in part due to inconsistent messages articulated in strategic plans and other policy documents. A 2008 Congressional Research Service analysis had similarly found no 'overarching policy goal for climate change that guides the programs funded or the priorities among programs.'" Second, since mechanisms for aligning funding with priorities are nonbinding, they are limited when in conflict with agencies' own priorities. The analysis then goes on to recommend action options including: "(1) a government-wide strategic planning process that promotes a shared understanding among agencies of strategic priorities by articulating what they are expected to do within the overall federal response to climate change and (2) an integrated budget review process that better aligns these priorities with funding decisions through a more consistent method of reporting and reviewing climate change funding." The solution to these problems would best be

addressed by creating a Climate Change Department, and I believe this should be at a level comparable to that of the Department of Homeland Security.

Recommendation 2: Promote programs and fund research in both the public and private sectors to drive innovation and action that will prepare communities for the consequences of climate change, such as extreme weather, forest fires, sea level rise, and floods.

2.1 Strengthen the resilience of our communities to extreme weather events.

The one-two punch of hurricanes Irene and Sandy has demonstrated that cities in the Northeast are not equipped to cope with the destruction that resulted: flooded transit systems, downed power lines, uncontained home fires, lack of an effective evacuation plan, hospital and nursing homes without power, angry citizens. Many power company distribution systems are out-of-date, replacement equipment is often not available when needed during a crisis, coordination and supervision are frequently ineffective, and the utility may be unduly relying on antiquated technology. Even rudimentary preparations such as trimming trees to protect power lines were often not done. As a result, for example, 90 percent of the 1.1 million customers of the Long Island Power Authority lost electric power during Hurricane Sandy and not all had it restored two weeks later (Hakim, McGeehan, and Moss 2012).

All communities should have a representative organization charged with formulating plans to cope with natural disasters that are possible in their area. A regional or statewide panel should evaluate these plans and a method for funding to carry out recommended strengthening of the community's infrastructure should be required. The various state governments should coordinate and help these local organizations and report the degree of preparedness to the federal government, perhaps through the Federal Emergency Management Agency (FEMA) or a newly created Department of Climate Change. Obviously, these efforts will produce millions of jobs and strengthen the economy as well as harden infrastructure.

2.2 Consider specific, localized training with the National Guard in combating locally characteristic natural disaster threats.

Response to a natural disaster almost always requires the massive importation of manpower. For example, the Long Island Power Authority imported 11,000 workers to restore power after Hurricane Sandy. Some came from as far away as California (Hakim, McGeehan, and Moss 2012). A well-organized manpower response may be difficult to obtain as natural disasters become more intense and wider spread. One solution is to have in reserve a cadre of workers trained for disaster response. If climate change were declared to be a threat to national security, which it is, then it could fall within the authority of the National Guard to respond to climate change-related disasters. Regular training as part of the Guard's requirements would ensure that they would be prepared to carry out their mission in a professional and effective manner. Details of the chain of command between the Guard and local authorities will need to be considered.

Recommendation 3: Develop a program for a rational transition from fossil fuel to renewable energy sources.

3.1 Encourage a program for a more efficient use of energy in residences and businesses, promote motor vehicle fuel efficiency, and expand use of mass transportation.

To promote a more efficient use of fossil fuel is to pick the lowest hanging fruit. A good example of this is provided by the Department of Transportation and the Environmental Protection Agency, who required automakers to raise the average fuel efficiency of new cars and trucks to 54.5 miles per gallon by 2025. This measure alone will save trillions of dollars and reduce greenhouse gas emission by billions of tons (Sunstein 2012). As much as a 30 percent reduction in energy use can be accomplished by more effective insulation of houses and offices, as well as the use of more efficient appliances and fostering higher sun reflectivity of roofs, parking lots, and streets. Smart community planning with efficient mass transit systems will add to the quality of life as well as save energy. All such programs can be sponsored through government-encouraged initiatives with minimal or even negative cost.

3.2 Reduce pollution from power plants and review regulations on coal-fired plants.

Many of the extant coal-fired power plants across the United States are nearing the end of their lifetimes and should either be decommissioned or upgraded to gas to reduce pollution and increase efficiency. Ideally, new methods of reducing carbon emissions will be introduced, such as natural gas, carbon capture and sequestration, and conversion of coal to synfuels.

3.3 Promote nuclear power plants as an interim low-carbon source of energy.

Replacing coal-fired power plants with nuclear power is a useful bridging solution on the road to a carbonless future. However, a substantial increase in the use of nuclear power plants will require the restoration of public confidence in safety and waste disposal, as well as international security requirements governing uranium enrichment and plutonium production. The time between proposing the building of a nuclear power plant and actual power production can easily stretch to between 15 and 20 years. One path for speeding up the process is to agree on a single reactor type for all power production. Development and production applications would be standardized and thus applications would be easier to evaluate. If that reactor type were a breeder reactor, much of the waste disposal problem would also be solved. Required increased security at the reactor site would replace current security needs at waste sites. These problems are solvable but require an educated and informed public that has confidence in their government.

3.4 Fund research and development of new and better methods for the storage and transport of energy.

Currently, electrical energy must be created and delivered on demand. Utility companies do an amazing job making this happen, but the systems are overtaxed and outdated. A major block to the use of wind and solar power is the fact that the wind does not always blow and the sun does not always shine. Research on, and development of, better storage

systems for electricity and larger and more efficient smart grids for the transport of electricity are absolute requirements for a successful transition to wind and solar power. A worldwide grid would be ideal if it were practical. Electricity could be generated anywhere and used anywhere else. A second-best solution would be to run the grid at least across the entire North American continent, starting with the United States. A good first step is Order No. 1000 of the Federal Energy Regulatory Commission (FERC 2012), requiring transmission planning at the regional level to consider and evaluate possible transmission alternatives and produce a regional transmission plan.

3.5 Establish a carbon tax (or assessment) to reflect the true cost of fossil fuel usage, thereby leveling the playing field significantly and encouraging the development of alternative energy sources.

Although the switch from fossil fuel to renewables is intellectually necessary to reduce climate change, the driving force for this change is not scientific but rather, economic. One economic move would be to remove tax incentives from fossil fuel producers and give them to providers of renewable energy forms. That can and should be considered. Another way of encouraging the use of renewable forms of energy is to establish a carbon tax on fossil fuels. Probably the best way of doing this is to assess the cost at the point of production rather than downstream toward the consumer. This removes a good deal of the ambiguity found in some current carbon tax proposals. The tax becomes part of the cost of production and can easily be passed on to distributors and users. Taxing at the source will also make leakage losses of fuel more expensive and thereby help prevent them. I believe that a carbon tax is better than a cap-and-trade plan. Cap-and-trade may or may not reduce carbon emissions. What it does is establish another commodities market that may lead to more abuse than good. The income from the tax can then be used to develop new renewable energy sources, establish funding to promote the development and production of new power transmission systems, and create new energy storage cells.

Conclusions

Heat records are being broken with alarming frequency, droughts and floods are affecting larger areas of the world, and abnormal weather extremes are persisting. As the 21st century begins, the effects of climate change are becoming more and more apparent and are most visible as an increasing occurrence of intense weather events. How do we as Americans respond to the challenges presented by these changes? There are three categories of response to the threat of climate change: mitigation, adaptation, and suffering. The above recommendations to you as our president include both mitigation and adaptation options. They are presented with the hope that through your direct actions and the positive responses, the future suffering of your constituents will be minimized.

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