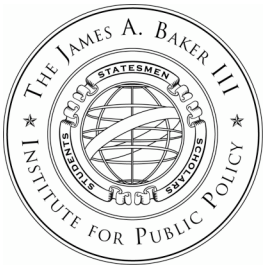

James A. Baker III Institute for Public Policy
Rice University

Keynote Address at the Conference "Emerging U.S. Climate Policy: Trans-Atlantic Approaches and Market Harmonization"

By

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Rice University

I. Welcome and Introduction

Thank you, Ambassador Djerejian, Monsieur Lalonde, ladies and gentlemen.

I would like to add my welcome to Rice University and Baker Institute and thank especially those of you who traveled long distances to be with us for this event — and of course our co-organizers and sponsors.

It is especially appropriate, I think, to have today's focus on trans-Atlantic approaches to climate change and we are very pleased to have as co-organizers, Houston's British Consulate-General and the General Consulate of France.

Europe has been a leader in helping the world understand the seriousness of global warming and climate change; and on the policy front, Europe has made commitments and begun to take action. I recognize that this has been a struggle and continues to be a work in progress. But Europe's leadership has been very important.

It would have been better had the U.S. been working with Europe and other nations, as a partner, these past eight years. But that did not happen. We now have some catching up to do, and I hope we can do so rapidly. More on that in a few minutes.

But, I want to begin with a disclaimer. I am not a climate scientist or economist. I'm a theoretical physicist who spent some time serving in the Clinton administration, where I had some involvement with climate policy, particularly during the time I served as Clinton's science adviser in the White House.

Now, I am happily back at Rice, my academic home from the 1960s, when I first joined the Rice physics faculty, and I am particularly pleased to be working with the Baker Institute on a broad range of policy areas that relate to S&T. Under the leadership of Ambassador Ed Djerejian, it is an amazing place.

My colleague, Dr. Kirstin Matthews, a molecular biologist and fellow of the Baker Institute, manages the S&T Policy Program. And we work closely with other Baker scholars and fellows, including Amy Jaffe, who runs the Baker Institute's Energy Forum and, with her staff, really put this event together.

As an example of our work together, earlier this year (Feb. 9, 2008), we jointly organized a one-day conference that was entitled "Beyond Science: The Economics and Politics of Responding to Climate Change" — and by "responding" we meant, of course, mitigation as well as adaptation.

I thought it might be most useful to our conference today if I summarized some of the discussions from that conference as a way of setting the stage for today's events. I will also share a few personal comments along the way. One nice thing about no longer being in government is the right to say whatever is on your mind.

II. Beyond Science Conference Summary — Issues and Opinions

The idea for the "Beyond Science" conference came out of a discussion I had with Malcolm Gillis, former president of Rice. Dr. Gillis is an economist who has been convinced for a long time that climate change is a serious threat. He and I were lamenting the fact that while there seemed to be many meetings in the U.S. on climate science, there did not seem to be much discussion of climate change economics and politics. So, we talked with our colleague, Amy Jaffe, who enthusiastically agreed to help put together such a conference. We were very pleased to also have the support of the Science and Innovation Section of the British Consulate-General.

The February conference agenda was very full. It included speakers on the current state of climate science, observations and model predictions; likely impacts of climate change and the range of approaches to mitigation and adaptation; pros and cons of "cap and trade," or "carbon tax," or "energy tax"; political realities; and other relevant matters.

This was not a conference to debate scientific findings or the fact that the U.S. needs to take a proactive role in what is a global problem of major proportion. Here is an excerpt from the introduction to the conference report that makes the point.

> "As the world's largest consumer of hydrocarbons and a leading emitter of greenhouse gases (GHGs), the United States must play a key role in any global effort to combat climate change. American scientists have been at the forefront of the emerging consensus view on the human role in climate change, yet U.S. policymakers, politicians, academics and the media have struggled to fashion a concrete response. So far, climate change policies have been piecemeal and relatively ineffective. Climate change is ultimately a political problem made all the more difficult by challenges that will persist for generations to come. The scope and complexity of the issue demands an equally diverse and multidimensional response. Whatever its final form, a comprehensive strategy will require global cooperation on a scale never before achieved in history."[1]

The keynote address was given by Massachusetts Senator John Kerry. Kerry, you recall, was the Democratic candidate for president in 2004 and has been a long-time advocate for policies to reduce carbon emissions — indeed, he attended last year's Bali conference and was in Poland last week.

In his address, entitled "The Road from Bali: The Future of American Policy on Global Climate Change," Kerry stated that the threat of climate change was "truly grave and significant," and he called for immediate steps to deal with it.

Kerry recalled James Baker's first public address as secretary of state in 1989, in which Baker warned that "time will not make it [climate change] go away." Kerry added: "Those words of Jim's ring truer than ever…. Time has not made the problem go away. On the contrary, time has obviously accelerated the consequences of this issue."

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[1] Matthews, Kirstin R.W., and Lauren Smulcer. "Beyond Science: The Economics and Politics of Responding to Climate Change." Rep. Ed. Amy Myers Jaffe and Neal Lane. Houston: James A. Baker III Institute for Public Policy, 2008.

It is not possible, in a few minutes, to summarize the richness of the February conference. So, let me just briefly list some of the issues discussed and points made in the presentations and discussions.

First, regarding the state of climate science and model projections:

- The conference took as the scientific basis for our discussions the 2007 assessment report of the U.N. Intergovernmental Panel on Climate Change — the IPCC.
- The IPCC does an excellent job, in my opinion, of describing what the data tell us about how and why the earth has warmed in recent times as well as the earth's geological past and how those changes correlate with the atmospheric concentration of CO_2 and other GHGs. Of course, there is still much we don't know, and a robust international research effort in climate science should remain a very high priority.
- Those who criticize IPCC, I think, do so for three reasons: 1) responses to political pressure representing the views of a state or sector of the economy; 2) so-called "scientists" who are paid to discount the science, without regard for facts; and, or 3) genuine scientists, engineers and other thinking men and women who tend to be skeptical about everything they read, even published work in their own field. I think the climate science community needs to spend some time talking with this latter group, in particular.
- The IPCC climate model computer projections, based on the best science and a variety of economic scenarios, tell a clear story that if we continue to increase CO_2 and other GHG concentrations over the coming decades, there is no good news for anybody on the planet, including Texas and the vulnerable Gulf Coast region.
- The IPCC, using the peer reviewed literature available at the time of their review, concluded that it is likely that the average global temperature will rise 0.2° C per decade over the next two decades and 2-4° C (relative to preindustrial levels — 1750) by the end of the century. Of course, warming in some regions, especially higher latitudes, including much of the U.S. and Europe, is likely to be much greater.

Sea level, on the basis of fairly conservative assumptions, is projected to rise by about 20 inches or so by 2100 (mid-point of 2001 IPCC projection 3.5" to 35") but it could be a meter or more.

Recent research seems to point to higher estimates. Moreover, sea level will continue to go up for several hundred years, even after we stabilize carbon — the ocean is slow to absorb heat and thermally expand, and ice sheets take some time to melt as well.

The frightening thing is that many climate experts feel that much beyond the lower end of the warming range, which I believe we are almost certain to reach [2 to 2.5º C — corresponding to CO_2e concentrations of 450 to 500 ppm — note that 2005 CO_2 levels were 379 ppm and increasing at 1.9 ppm per year],[2] the earth's climate will pass a "tipping point" beyond which climate change may be irreversible — such things as the melting of the Greenland ice sheet, which could raise sea level by 7 meters (23 feet) — and the consequences could be truly catastrophic for much of the world.

- There are still scientific uncertainties in these models, although they are being steadily reduced. Targeting these uncertainties will continue to be a very high priority. But, even larger uncertainties in making projections have to do with future social and economic conditions — and alternative economic "scenarios." The current economic crisis sweeping across the planet, depending on how deep and how long in duration, presents a "scenario" we did not expect.
- As the climate models improve, particularly in providing regional projections and at decadal timescales, cities and communities will be able to plan better how to adapt to climate change and extreme weather events they will experience in the coming decades.
- Where the science does not do such a good job is predicting impacts on ecological systems, agriculture, water supply and pubic health. In the U.S., little funding has been provided for these studies. We also do not have scientific consensus on the impact of global warming on the frequency and intensity of hurricanes (of great interest here in Houston), tornados and other major weather conditions.
- One of the speakers at the conference commented on the title of our conference, saying we are not "beyond science" — there is still much research that needs to be done.

[2] Matthews, Kirstin R.W., and Lauren Smulcer. "Beyond Science: The Economics and Politics of Responding to Climate Change." Rep. Ed. Amy Myers Jaffe and Neal Lane. Houston: James A. Baker III Institute for Public Policy, 2008.

Next we turn to the likely impact of climate change and various approaches to mitigation (i.e., hold back global warming and climate change) and adaptation (i.e., respond to changes that will occur).

- At the February conference we heard a summary of a report jointly issued by the U.N. Foundation and the Sigma Xi Research honor society called "Confronting Climate Change: Avoiding the Unmanageable and Managing the Unavoidable," which made a number of sensible recommendations. But there were two clear overarching messages:
  - First, we will need adaptation as well as mitigation strategies, since the climate is changing. The only question is how fast and how much. "Thirty percent more of the world is currently in drought than it was in 1970, weather-related losses topped $375 billion in 2005, and increased flooding has occurred on every continent over the past 50 years. The IPCC has reported on more than 20,000 data sets which confirm that species are starting to shift to higher latitudes and altitudes."[3]
  - Even if we didn't put another molecule of CO_2 in the atmosphere, the temperature would continue to rise, sea level will continue to rise, the climate will continue to change, and plants and animals will relocate or die out. So we will need to adapt.
  - Second, there is no "silver bullet" approach; rather, we will need a "silver shotgun" approach, an integrated strategy of both mitigation and adaptation. Moreover, approaching the challenge in this way presents a host of opportunities for investment and economic growth
- In order to plan a mitigation strategy, one has to realize that four factors affect CO_2 buildup, resulting in global warming and climate change — and they all multiply:
  - Population: Limiting population growth will require better education, health care, reproductive rights and job opportunities for women;
  - Economic activity (GDP per capita): Could reduce this factor by lowering the standard of living for large numbers of people — not attractive option;

[3] Scientific Expert Group on Climate Change, 2007: "Confronting Climate Change: Avoiding the Unmanageable and Managing the Unavoidable," R.M. Bierbaum et al., eds. (research triangle park, N.C.: Sigma Xi and Washington, D.C.: United Nations Foundation, Washington, D.C.).

  - Energy intensity of economic activity (energy per GDP): This factor can be reduced by making more efficient use of energy — this is the low-hanging fruit for the U.S., maybe some other nations as well; and
  - The carbon intensity of energy supply (e.g. carbon emitted per unit of energy): Reducing this factor requires a shift to low-carbon energy sources and sequestering carbon. This certainly needs to be a major focus of R&D investments and regulations.
  - In addition to moving to carbon-free energy, other steps should be taken to limit the concentrations of GHGs, e.g. reducing methane emissions (e.g. natural gas flaring), reforestation (and reducing deforestation) and changing agricultural practices.
  - And, if all else fails, altering the earth's reflectivity or shielding the earth through geo-engineering, although that is likely to be extremely expensive.
- So, in short, we can reduce the world's GHG concentrations by one or more of the following: having fewer people on the planet, lowering their standard of living, using energy more efficiently, producing low-carbon energy and/or manipulating the environment.
- On the adaptation side, the fact is that few cities and communities are prepared to protect their people from increasing floods and droughts, extreme heat waves, possibly more intense storms, a meter or more of sea level rise, and the coming resurgence and redistribution of species, several of which spread infectious diseases (WNV, malaria, denge fever). Furthermore, climate change will make it much more difficult to make progress on the U.N.'s millennium goals to eradicate poverty and hunger.
- Adaptation strategies depend very much on regional and local issues. Two points are worth emphasizing:
  - Any adaptation strategy must be based on: a) credible projections of how the climate and sea level in a particular region are likely to change; and b) an assessment of how that change will affect the region. We have uncertainties in both these areas.
  - Any strategy to adapt to climate change must be integrated with a larger plan for sustainability; many adaptation measures are things the region and communities need to do in any case. Adaptation can be win-win and of real value regardless of the magnitude of future climate change and sea level rise.

- Finally, we come to the third set of topics we dealt with at the February "Beyond Science" conference — the issues that are making it so hard to make progress: policy options for reducing carbon emissions, which will depend on economics and politics.
- We recognize that in most parts of the world, the U.S. is viewed as the "bad guy" for several reasons:
  - We have put 30 percent of the carbon up there and continue to be one of the largest emitters of GHGs (about 20 percent of total emissions per year) second only to China, and the largest emitter per capita (the U.S. has only 5 percent of the world's population).
  - Vice President Al Gore signed the Kyoto Protocol in 1998 (Nov. 12), even though economists in the Clinton administration worried that the costs of compliance could be very large.
  - However, the U.S. Senate, by a vote of 95 to zero, made clear that it would not ratify any agreement that did not include China, India and other developing countries or would do serious economic harm to the United States.[4] Hence President Clinton never took it to Congress for ratification.
  - Senator Kerry, in his remarks at the "Beyond Science" conference, explained that the Senate resolution was supported by Democrats as a way of avoiding a stronger Senate action rejecting Kyoto outright.
- In the presidential campaign of 2000, George Bush, running against Al Gore, took the climate change issue off the table by promising to regulate GHG emissions as a pollutant, if elected president. After the Florida ballot fiasco and the U.S. Supreme Court decision that essentially gave the White House to Bush, he quickly did an about face on climate change, appeasing the Republican leadership in Congress and executives of many (but not all) major energy, utility and auto companies.
- Early in his administration, President G.W. Bush announced that the U.S. would ignore the Kyoto agreement, surprising even his EPA Administrator Christine Todd Whitman, who was busy negotiating emissions reductions in accordance, she believed, with the president's wishes. She resigned in 2003 after a little more than two years on the job.

[4] Byrd-Hagel resolution SRes98, July 25, 1997. http://www.nationalcenter.org/KyotoSenate.html

- From that point on, the G.W. Bush administration did everything it could to dismiss the science (even manipulating science sections of government reports) and prevent progress on further international agreements. Indeed, the position of the Bush administration was so obviously absurd that a number of U.S. states — Ambassador Djerejian mentioned California and New York — regions and cities have taken steps on their own to reduce emissions, even suing the EPA to force regulation of GHG under the "Clean Air Act." In a 5-4 decision, the U.S. Supreme Court ruled against the EPA. Action will have to come from the next administration.
- At the "Beyond Science" conference, we heard from a number of people involved in state and regional efforts who described their policy processes and pros and cons of various models. Texas, the largest producer of CO_2 emissions in the U.S., is also the largest producer of electricity from wind energy. However, with regard to climate policy, it is only beginning to wake up. Houston Mayor Bill White is very much awake!
- We also heard from a number of economists with differing views on what emissions reductions might cost — e.g. projections in the U.K. Stern report as well as the McKinsey report, to mention two prominent ones.
- The economists' panels discussed the pros and cons of three approaches to reducing CO_2 emissions:
  - cap and trade, which is viewed as most likely to reduce emissions in a predictable way and most politically palatable here in the U.S.;
  - a carbon tax, which is less predictable in terms of reducing carbon emissions and not popular with Congress, although it has the advantage of producing revenues that could be used to develop new energy technologies; and
  - an energy tax, which is also less predictable in reducing emissions but is more likely to reduce energy imports, and thus has an "energy security" advantage. So far, we are not hearing much discussion among the politicians about this being a possible option.
- There was no agreement among our economists on the panels as to which approach was best; and it was acknowledged that some hybrid model could well result over time.

III. Neal's Personal Views

So, where will we go from here? What can we expect from the U.S. after such a long dry spell?

- It has been a very frustrating nearly eight years for the majority of Americans who believe that global warming and climate change threaten the world's people and all other things living on our planet.
- Rather than comment further on this sad and embarrassing history, I will simply say that things are going to change. President-elect Obama has made clear that his administration will take a much more progressive stance on climate change. At the moment, the economic crisis is front and center in policy discussions, as it is in other parts of the world. But, I believe that the President-elect's commitment to do something about carbon emissions is solid.
- I mentioned earlier that Senator Kerry was in Poland last week as a Congressional observer to the talks leading up to a post-Kyoto agreement, hopefully to be in place after the Copenhagen conference next December. [Kyoto expires end of 2012]
- At last week's meeting in Poland, Kerry is reported to have told the delegates that, "President Obama will be like night and day compared to President Bush." He added, "This is a challenge of leadership, and we have an enormous obligation to meet it…. The administration and Congress are on the same page…. The U.S. has to act, we must lead and we need to have mandatory emissions targets."[5] Strong words.
- Of course, Senator Kerry can't make commitments for the next president, and he does not represent the views of everyone in Congress. With that in mind, he noted that China will have to commit to "some kind of targets or we (the Senate) will not be able to ratify the agreement." I think the difference will be that the U.S. will come to the table with Europe, China and other nations, and have serious discussions and realistic proposals to offer.

[5] Rosenthal, Elisabeth. "Amid a Hopeful Mood, U.N. Talks Set Countries on Path Toward a Global Climate Treaty." The New York Times, 12 Dec. 2008. http://www.nytimes.com/2008/12/13/world/13climate.html?_r=1&scp=1&sq=december%2013%202008%20obama%20kerry&st=cse>

- President-elect Obama has emphasized that "we have one president at a time," so formal engagement with the Obama administration will have to wait until inauguration day, Jan. 20, when Barack Obama becomes our 44th president at 12 noon EST — a truly historic moment for this country.
- Last week, President-elect Obama met with Al Gore, and Thursday's papers reported the names of members of Obama's energy and environmental team, some of whom I have worked with and others I know only by reputation.
  - Steve Chu, selected to be the new secretary of energy, is a stunning choice — a Nobel laureate who knows science and engineering and has experience running one of the nation's foremost National Laboratories, LBL (Lawrence Berkeley National Laboratory), where he has been an advocate for developing innovative carbon-free energy and fuels (solar, advanced biomass that does not compete with food crops). Chu is also a strong advocate for energy efficiency. I have known Steve Chu for several decades. He has all the necessary knowledge, entrepreneurial spirit and skills to truly transform the DOE.
  - I don't know what Secretary Chu will do, but I feel confident that he will place greater emphasis on developing a portfolio of new energy technologies, not limited to biofuels. I personally believe that the U.S. needs an Apollo-type program focused on energy technologies and a national renewables standard as incentive to markets. Nothing timid is going to meet the challenge.
  - Carol Browner, selected to be the principal presidential adviser for energy and climate — the White House energy and climate "czar" — was head of EPA under Bill Clinton. I worked with Carol Browner and greatly admire her knowledge about climate change and her commitment to action. She is passionate about the environment and limiting climate change — and she is willing to go against timid naysayers, either Republicans or Democrats. And, remember, she has a secretary of state, Hillary Clinton, who knows a lot about energy and climate change.

I don't have any inside information about President-elect Obama's specific plans. But his comments before and after the election, combined with the outstanding team he is putting

together suggest the U.S. will take effective action to reduce carbon emissions, increase energy efficiency and work with other nations to confront the problem.

But it would be a mistake for anyone to assume that negotiations will be easy. The views expressed by the Senate 95 to zero vote are still held by many, and they will have to be addressed. The serious economic crisis in the U.S. and around the world will make it harder in many ways, but that cannot be allowed to stand in the way of making real progress in the next several years.

As for me, I am encouraged by what I see happening in the Obama transition and by John Kerry's comments. The U.S. will be back in the game — and this time, as a partner.

Thank you.