Climate Change and Presidential Policy: A Millennial Debate Begins to Unfold

DOMINIC M. BERARDI
University of Cincinnati

An issue once salient to the American populous is now at the frontline of public debate. In the last few years global warming rose significantly on the U.S. political agenda. The Kyoto protocol, implemented under the auspices of the United Nations, was the first international attempt to tackle the problem, yet the United States and Australia refused to participate. With the treaty set to expire in 2012, the world will look to its leaders for practical and effective solutions. Despite international scrutiny, the U.S. will likely opt out again. My paper will review the evolution and eventual shortcomings of the Kyoto Treaty, the role of legislative politics in the domestic debate, and the various policy alternatives receiving serious consideration in Washington. In the long run, our civilization will face dire consequences from climate change. The debate centers on our capacity to mitigate and adapt with minimal economic interference. At the helm of the country with the most green house gas emissions, the American President is being charged by the international community, and increasingly the American people, to develop comprehensive climate change policy. Addressing this issue will require government diligence, corporate ingenuity, and the adaptation of individual citizens. I seek to identify strategic opportunities such as tax options, trade mechanisms, and voluntary technology deployment programs which will achieve policy objectives while lessening the negative effect on the U.S. economy.

International Policy Begins To Evolve

Despite the lingering debate over the human role in climate change, evidence of the link has been studied by scientists for over a century[1]. It is not a question of whether or not it is occurring, but to what extent humanity has caused it, hence our capacity to affect mitigation. In a society where the global economy is driven by consumption of natural energy resources, this proves to be a colossal undertaking.

[1] In 1895 Svante Arrhenius presented a paper to the Stockholm Physical Society titled, "On the Influence of Carbonic Acid in the Air upon the Temperature of the Ground."

Perhaps the first major international response began with the creation of the Intergovernmental Panel on Climate Change (IPCC) in 1988[2]. This panel, including thousands of scientists, is recognized as the international scientific authority for climate change research (UCS 1). After the first assessment report was released in 1990, discussion of a U.N. treaty began. In 1992 in Rio de Janeiro, Brazil a U.N. conference popularly known as the "Rio Earth Summit" showcased the U.N Framework Convention on Climate Change (UNFCCC). Passed in 1994, this treaty aims "to achieve stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent dangerous anthropogenic interference with the climate system"[3]. With IPCC assessments painting a dire picture in the 1990 and 1995 reports, international momentum began building for a serious international response[4].

The U.S. Policy Agenda

Addressing climate change is but one of many objectives of U.S. policy makers. As is common with many policy issues, the public debate generally ignores the complexities of government resolution. As our leaders debate future threats like global warming, they are faced with balancing current priorities, such as healthcare costs, the global war on terror, and providing affordable education. Adding to the difficulty; climate change is inextricably linked to energy, economic and national security priorities requiring extensive consideration of all variables. For this reason the development of U.S. climate change policy will demand strong leadership from the executive branch.

Prior to the 1970's the U.S. hadn't defined much of an energy policy other than insuring there was a continuous abundant supply to drive economic growth. Even efforts to develop such a plan from Presidents Richard Nixon, Gerald Ford, and Jimmy Carter, never came to fruition (Kraft 351). The first successful policy measure, a modest one at that, was the Energy Policy Act of 1992 adopted by President George H.W. Bush. This law, however, was based mostly on conservation programs at the household level and "did nothing…to curtail U.S. reliance on foreign oil or fossil fuels in general (Kraft 2007).

Despite innovations in renewable sources and nuclear energy, the U.S. uses fossil fuels to supply approximately 85% of total energy needs. Without a clear energy strategy, the utility and transportation infrastructure of the country

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[2] Recognizing the problem of potential global climate change, the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988.

[3] Stated objective of the UNFCCC Treaty.

[4] Referring to the 2007 release of the Third Assessment "the IPCC will say it is at least 90 percent sure that human activities, led by burning fossil fuels, are to blame for a warming over the past 50 years." (Doyle)

developed with a bias toward production of the cheapest and most plentiful source, fossil fuels. This bias creates substantial hurdles for climate change policy because it involves altering the fundamental structure of the U.S. economy, hardly an easy task.

Economic, and related security ramifications, are perhaps the most serious consideration given that any system affecting costs of production will lead to some degree of loss in overall production capacity. The U.S. economy has been growing rapidly over the past century providing continued prosperity and improving the standard of living of our citizens. Accordingly, increased growth has produced a greater income stream for the U.S. government to apply toward national priorities. However, the challenge arises because it is this same productive capacity which causes the U.S. to be the largest emitter of green house gases (GHG). Keeping both the rates of economic growth and GHG emissions at current levels "would require cutting back industrial production around the globe that would make the Great Depression look very small (Zakaria). It is this result that causes concern over the pace and scope of mitigation efforts. While freezing emissions at current levels may seem extreme, in the long-run annual global emissions will need to be reduced more than 80% below the current absolute level for the earth to naturally absorb them (Stern 11).

Policy Alternatives

Comprehensive climate change strategy will require a vast array of changes affecting every sector of our society. Government institutions have the power to shape many of the factors contributing to mitigation and adaptation to global climate change[5]. The first step in this process is initiating change through the enactment of a mitigation strategy. Dr. Robert J. Shapiro, a national economist notes: there are three basic approaches to reduce the Greenhouse Gas (GHG) emissions that drive climate change[6]: 1) Strict government regulation 2) Global caps and tradable permits or "Cap & Trade" 3) Taxes imposed on carbon emitting entities (Shapiro 4).

The first approach, government regulation, would require the institution of a large regulatory agency responsible for monitoring and enforcing emissions. While this may seem practical in large industrialized nations accustomed to large-scale regulation, it would be much more difficult or nearly impossible in smaller countries. Shapiro explains:

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[5] Public institutions and Policies affect technology development, resources utilization, information collection and dissemination, risk assessment, and disaster relief (Easterling)

[6] Although other programs such as clean technology research and reforestation exist, they have little impact by themselves and are only a small part of a long-term solution.

> "Traditional command and control regulation is generally recognized to be unnecessarily inefficient: By mandating the same standard across all firms – or countries--relatively low-cost and high-cost reductions are pursued equally, so emissions are lowered in a very cost-ineffective way" (Shapiro 5).

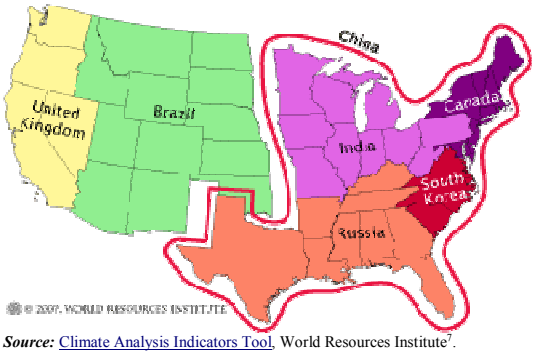
The U.S. government currently provides heavy subsidies for alternative fuel producers. According to David Wyss at Standard & Poor's Corp., "economists are generally in favor of a free market system, but occasionally you need to intervene" (Izzo). However, market intervention poses a problem because it allows the government to manipulate a market solution by picking winners and losers. Given the assumption that less government intervention is better, economist tend to favor a tax on carbon.

Taking this into consideration, it will be important for policy makers to concentrate on market-driven opportunities. Elimination of the regulatory option as the overarching framework leaves two approaches: cap-and-trade systems and a tax on carbon. The two are similar in that they function by effectively increasing the price of fossil fuels thereby decreasing demand. Increasing the cost of energy over time would give companies an incentive to invest in renewable energy, carbon sequestration, and other technologies which reduce their consumption of fossil fuels. On the surface the policies appear very similar because they the same variable, cost. Yet, a closer examination will reveal stark differences in terms of implementation feasibility and actual emissions reduction. Fueled by an overwhelming call-to-action in the European Union, the cap-and-trade approach garnered enough international support for an amendment to the UNFCCC known as the Kyoto protocol.

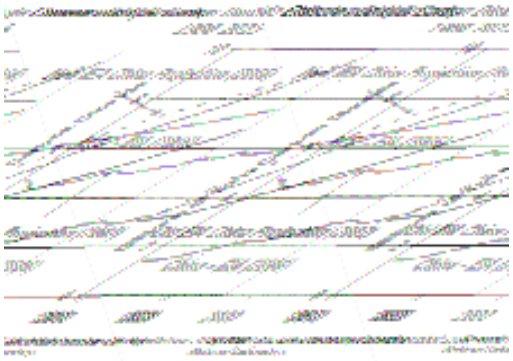
An Attempt at Cap-and-Trade: The Kyoto Amendment

The Kyoto Protocol was opened for signature on December 11, 1997. Largely because it shifted a disproportionate cost to the United States and lacked emissions standards for India and China, the U.S. Senate unanimously opposed ratification before the protocol was even finalized (Clemitt 191). Although the U.S. is the largest producer of GHG emissions, the graph below (left) illustrates that the other developing countries contribute a very significant role. In fact many studies show China could pass the U.S. in CO_2 emissions by as early as 2009 (Logan 1). As a Newsweek journalist summed up the problem:

> "These two countries (China and India) are currently building 650 coal-fired power plants. The combined CO_2 emissions of these new plants is five times the total savings of the Kyoto accords-that is, if the Kyoto targets were being adhered to by western countries, which they are not" (Zakaria)



Source: Climate Analysis Indicators Tool, World Resources Institute[7].



Despite harsh criticism by world leaders, neither the Clinton nor Bush administrations took significant steps toward ratification. Inaction on the part of both Presidents is derived in the economic analysis and advice provided by the Council of Economic Advisors (CEA) and the Energy Information Administration (EIA). The consensus of government officials appeared to be that the Kyoto Protocol would have unacceptable costs on the U.S. economy and pose a serious threat to the competitive position of the country.

Economic Consequences

Even less ambitious goals will have economic consequences. It was estimated in 2001[8] that Kyoto would cost the U.S. anywhere from .5-2% of GDP per year (see graph below). Although these figures are highly debated, even at the low end, such a change has a tremendous impact on the welfare of our society. Even one of the least stringent of current domestic proposals, a cap-and-trade proposal submitted by Sen. Jeff Bingaman (D-NM), is estimated to cost 0.26 percent of annual GDP (EIA).

According to an analysis by The American Consumer Institute, implementing a cap-and-trade program based on a targeted rate of reduction in emissions intensity will impact the economy in two ways. First, efforts to reduce GHG emissions and the requirement to hold permits for all remaining GHG emissions will raise energy prices, particularly those for fossil fuels. Second, the auctioning of permits and the sale of additional permits if the safety valve is triggered will increase revenues to the government. In turn, higher energy prices and increased government revenues will impact aggregate economic growth." (Shapiro)

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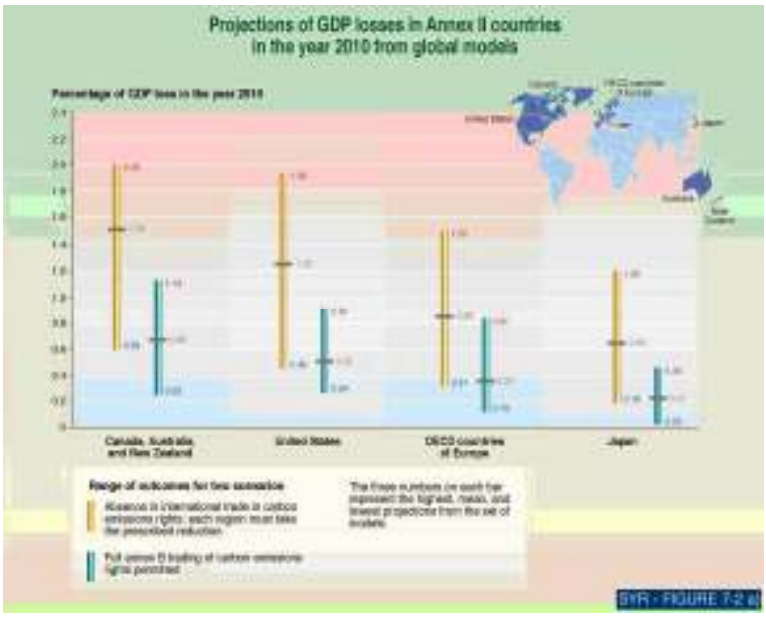
[7] Region/country equivalencies are approximations intended for illustrative purposes.
[8] IPCC Third Assessment Report



Cap & Trade vs. Carbon Tax

In the long-run, increasing climate will have an immensely detrimental effect on the global economy and mitigation efforts may likely reduce the burden. Nevertheless, it is pertinent that reductions are gradual and as market-driven as possible. The policy objective of any measure should be to reduce emissions by spurring the development and use of cleaner and more efficient technologies. Given the long-term ramifications of climate change, an adequate policy needs to be comprehensive and permanent.

The real tradeoff with the two policy approaches is between price volatility and the certainty of emissions. Sustaining market efficiency in a free-market economy requires relative stable of macroeconomic variables. A carbon tax is straightforward and its effect is generally stable and predictable. This allows decision makers to plan and invest with greater confidence. A cap-and-trade scheme, on the other hand, gives rise to much more volatility in price[9]. Proponents of this approach argue, however, that the benefits of strict controls over emissions outweigh the issue of price volatility. By setting a predetermined limit of emissions, a cap, mitigation goals are concrete and easy to manipulate. Yet, controlling emissions with a carbon tax isn't as complex as it may appear. As emissions levels are monitored, the tax may need ratcheted up or down. This alternative provides a more "stable and transparent system for consumer and Industry alike" (Shapiro).

[9] In the first 22 months of CO_2 permit trading under the European Emissions Trading Scheme (ETS), with price shifts averaging 17.5% per month.

The Kyoto protocol put U.N. resources to the test and it fell far short. Though unfortunate, this outcome exposed the inability of the U.N. to monitor and regulate such an expansive program. This brings skepticism of whether global climate change is too large of a problem to address through one overarching mechanism. A Washington Post editorial explains that:

> "limiting the use of fossil fuels cannot be carried out with an unenforceable international regime, using complicated regulations that the United Nations does not have the staff or the mandate to supervise, with the help of a treaty that penalizes those who bother to abide by it" (Applebaum).

This statement is even reflected in a publication by the International Panel on Climate Change (IPCC) which stated: "it is hard to get the nations of the world to agree on anything, let alone a common approach to a difficulty which is complicated, whose consequences aren't entirely clear, and which will have its most severe effects decades and even centuries in the future"[10]. This poses the reasonable question about whether or not a complicated system of trading would work for industry or the government even if it was confined to the United States.

A carbon tax would also generate very significant revenues. Given the amount of domestic consumption, even a relatively small gasoline tax has the potential to raise Billions of dollars in tax revenue. This would allow for tax shifting: raising the tax on energy and relieving it in other places, effectively neutralizing the tax burden. For opponents of the tax who believe industry is experiencing twice the burden[11], tax revenues could be used to displace the cost of new technology or to reduce existing payroll taxes effectively increasing aggregate disposable income. And if this isn't enough incentive, perhaps financing a costly war in the Middle East, a broken social security system, or paying down the $8.7 trillion national debt would be appealing (Treasury).

Domestic Political Considerations

The nature of legislative politics causes significant hurdles for both frameworks. In the case of cap-and-trade, a decision would have to be made of whether or not the policy would extend to specific sectors or industry wide. Currently several of the proposals in congress are leaning toward simply restricting emissions of heavy industry such as utility companies. It is largely feared that special interests would favor one industry over another. As one author put it:

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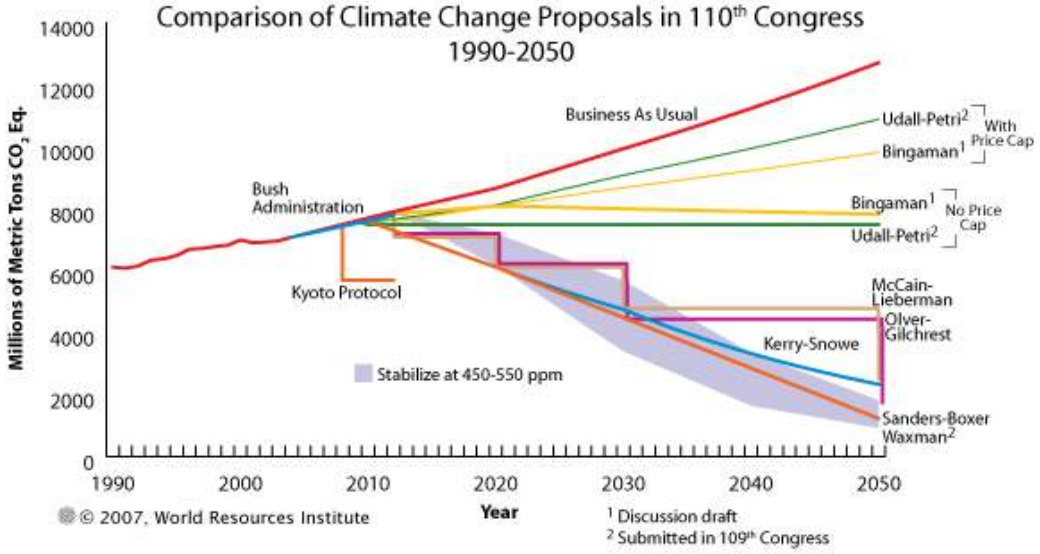
[10] Statement taken from the UNFCCC website.
<http://unfccc.int/essential_background/feeling_the_heat/items/2914.php >

[11] Business would spend money to invest in cleaner production while also paying for emissions they failed to cut.

> "So much is at stake for so many industries that the legislative process to create it (Cap & Trade) would be easily distorted by their various lobbies (Applebaum)".

The legislative environment in the last several months illustrates that this fear may be well founded. Industry giants like General Electric, DuPont, Alcoa, and Caterpillar have recently endorsed cap-and-trade proposals (Jenkins 1). With strong prospects of a "greener" competitive position in emissions regulated world, this comes as no surprise. Despite the economic advantages, the idea of drastically expanding the tax base is political poison in the U.S., especially among fiscal conservatives. Coupled with the overall political moderation of the American people and the narrowly held Democratic majorities in the legislature, the prospects of a carbon tax bill doesn't seem likely any time soon.

The previous three congresses, as well as the 110th congress, have proposed a flurry of cap & trade climate legislation ranging drastically in both stringency and implementation strategy (See graph below). This legislation along with increased public awareness has roused a debate over policy approaches which are largely divergent along party lines. Some states and their legislators, such as California, are pressing for very strict cap & trade mechanisms[12]. Most likely viewing legislation as eminent, the corporate community has come to the table to insure their lobbies play a role minimizing the damage involved with such policy. With politicization inevitable a simple yet far reaching tax policy is even more appealing.



[12] Represented by the Sanders-Boxer Bill in the Senate and Waxman Bill in the House (see WRI graph above)

Requisite Support Programs

Regardless of the overarching policy, appropriations for support programs will be vital to society's adaptation to a warmer planet. In addition to UNFCCC[13] programs, there are a wide variety of public/private partnerships, research programs, and technology deployment efforts underway. Despite skepticism that the U.S. is ignoring the problem, the federal government currently supplies the lion's share of global climate change research, activities, and related tax policies[14]. Unlike the Kyoto protocol, these activities are building the foundation for a comprehensive international strategy from the ground up rather than the reverse.

Climate change 2001 - Synthesis report < http://www.ipcc.ch/present/graphics.htm>

The same mentality is helping to address clean development and climate goals within the U.S. Decentralized polices, implemented at the state and local level, are beginning to focus on reducing conflict between regulatory bodies and those entities being regulated. It is this cooperative mentality that is allowing clean development and climate goals to be addressed.

Another crucial piece to the policy puzzle are public/private partnerships. The flagship support program for the George W. Bush administration is the Asia Pacific Partnership (APP). Introduced at the Association of Southeast Asian Nations (ASEAN), the APP is a non-legally binding voluntary agreement between six nations: Australia, China, India, Japan, South Korea, and the United States. This strategic group of nations collectively represents 64.7% of world GDP and 48.4% of world CO_2 emissions from fossil fuel consumption[15]. Although they have signed the Kyoto Protocol; China, India, and South Korea are all exempt from any actual

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[13] U.N Framework Convention on Climate Change

[14] "The United States has played a leading role in advancing climate science and observations. Since 2001, the President has devoted nearly $29 Billion on climate-related science, technology, international assistance, and incentive programs. Since 2002 the President has spent nearly $9 Billion on climate science research-leading the world with unparalleled financial commitment (Scuderi)."

[15] Information abstracted from the International Energy Annual 2003, a government report compiled by the Energy Information Administration (EIA).

emissions reduction. In light of their rapid economic development, the goal of APP is "to collaborate to promote and create an enabling environment for the development, diffusion, deployment and transfer of existing and emerging cost-effective, cleaner technologies and practices (APP)". These efforts are intended to compliment, but not replace, the Kyoto Protocol.

Voluntary programs such as APP play a crucial role in the development of an effective global response for several reasons. As the U.S. has learned from its own rapid development, a lack of infrastructure planning can be immensely difficult to make up for later. As a result, the Asian tigers such as China and India could benefit greatly from collaboration with their more developed counterparts while forging vital institutional relationships vital. Nevertheless, cooperation isn't nearly as important among government's as it is among industrial producers, the largest sect of polluters. Almost all of the actions APP has identified "will involve business, and a number of the activities will be undertaken primarily or exclusively by companies and associations representing commercial enterprises[16]." Such privately-driven initiatives insure the benefits of the most innovative and cost-effective technologies are realized.

Adequate preparation will require the significant adaptation of society at all levels. Poor communication about policy solutions tends to skew public perception of the climate change agenda. Large scale mitigation efforts alone will not solve the problem. Public awareness campaigns need to focus on personal energy use. Although the bulk of energy is consumed by industry and commercial entities (≈50%), another 22% is consumed by households[17]. Changing the course of global warming will require individuals to make purchase decisions which reflect a conservation/sustainable mentality.

Conclusion

Climate change resulting from green house gas emissions poses a serious long-term threat to our ecosystems and the societies residing in them. Attention to the issue has fluctuated rapidly on the domestic political scene until recently. Although environmental conservationists scorn Presidents Bill Clinton and George W. Bush, their refusal to participate in the Kyoto Protocol was motivated by the preservation of U.S. competitive interest. Rightfully so, these administrations realized the far-reaching scope of the issue. Although fundamentally flawed, this cap-and-trade mechanism was the first aggressive attempt to curb green house gases on a global scale and it captured the attention of the world. As both the sole superpower, and the most successful example of democracy, the U.S. is uniquely positioned to craft an innovative climate change policy such as a tax-based program. As the expiration

[16] Abstracted from an Executive Summary of APP Taskforce Action Plans
[17] EIA Annual Energy review

date of the treaty looms closer, a unique opportunity presents itself for the American Presidency. Unlike other foreign policy issues, the whole world has a stake in addressing climate change and the American President is empowered to lead by example on the world stage.

References

Annual Energy Review 2005. *Energy Information Administration.* Washington, DC, July 2006 < http://www.eia.doe.gov/emeu/aer/contents.html>

Applebaum, Anne. "Global Warming's Simple Remedy". Washington Post. 6 Feb. 2007.

"About the Asia Pacific Partnership on Clean Development & Climate". *Asia Pacific Partnership on Clean Development and Climate.* <http://www.asiapacificpartnership.org/About.htm>

Bush, George W. *State of the Union Address: 2007 Policy Initiatives*. <http://www.whitehouse.gov/stateoftheunion/2007/initiatives/energy.html>

Clemmitt, Marcia. "Climate Change". CQ Researcher. 27 Jan. 2006

Doyle, Alister. "U.N. Climate Panel to Produce Wrenching Change." Reuters. 23 Jan. 2007.

Easterling, William E, Brian H. Hurd, and Joel B. Smith. "Coping with Global Climate Change: The Role of Adaptation in the U.S." *PEW Center on Global Climate Change.* June 2004

"Energy Market and Economic Impacts of a Proposal to Reduce Greenhouse Gas Intensity with a Cap and Trade System" *Energy Information Administration-U.S. Department of Energy.* Office of Integrated Analysis and Forecasting. Washington, DC. January 2007. <http://www.eia.doe.gov/oiaf/servicerpt/bllmss/pdf/sroiaf(2007)01.pdf>

"Energy Security for the 21st Century." Policies in Focus. The White House. http://www.whitehouse.gov/infocus/energy/

"Executive Summary of Task Force Action Plans". *Asia Pacific Partnership on Clean Development and Climate*. 31 October 2006

Izzo, Phil. "Is It Time for a New Tax on Energy." Wall Street Journal. 9 Feb, 2007.

"International Energy Annual 2003." *Energy Information Administration*. Washington, D.C. July 2005. <http://www.eia.doe.gov/iea/>

Jenkins, Holman W. "Decoding Climate Politics." Wall Street Journal. 24 Jan, 2007.

Kraft, Michael E. "Environmental Policy and Politics." 4th Ed. New York: Pearson-Longman. 2007.

Kraft, Michael E, and Scott R. Furlong. "Public Policy: Politics, Analysis, and Alternatives." 2nd Ed. CQ Press. 2007.

Logan, Jeff. "Surging Chinese Carbon Dioxide Emissions." EarthTrends. 20 Nov. 2006.

Morello, Lauren. "U.S. must take lead in addressing warming, Stern says." Environment and Energy Daily. Sec. On the Hill. Vol. 10 No. 9. 14 Feb. 2007.

"Projections of GDP losses in Annex II countries in the year 2010 from global models." IPCC Climate Change 2001 - Synthesis report. <http://www.ipcc.ch/present/graphics.htm>

Scuderi, Kristin. "Intergovernmental Panel on Climate Change Finalizes Report." *Office of Science and Technology Policy-Executive Office of the President*. Press Release. 2 Feb. 2007.

Shapiro, Robert J. "Addressing the Risks of Climate Change: The Environmental Effectiveness and Economic Efficiency of Emissions Caps and Tradable Permits, Compared to Carbon Taxes." The American Consumer Institute. 14 Feb. 2007.

"Svante Arrhenius (1859-1927)". On the Shoulders of Giants. NASA Earth Observatory Library. http://earthobservatory.nasa.gov/Library/Giants/Arrhenius/arrhenius_2.html

Stern, Nicholas. "Stern Review Report on the Economics of Climate Change: Executive Summary (Full)". *HM-Treasury*. U.K. Jan. 2007.

"The Debt to the Penny and Who Holds It." *U.S. Treasury Dept*. 21 Feb. 2007. <http://www.treasurydirect.gov/NP/BPDLogin?application=np>

"The IPCC: Who Are They and Why Do Their Climate Reports Matter?" *Union of Concerned Scientists*. <http://www.ucsusa.org/global_warming/science/the-ipcc.html>. Rev. 30 Jan. 2007

"United Nations Framework Convention on Climate Change." Accessed 10 February 2007 at <http://unfccc.int/resource/docs/convkp/conveng.pdf>. pp. 4.

Zakaria, Fareed. "Global Warming: Get Used to It; Even if we adopted the most far-reaching plans to combat climate change, we would still watch greenhouse gases rise for decades." Newsweek. 19 Feb. 2007. pg 43.