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**A Comparison of Climate Change Policy  
in the Senate**

**An Undergraduate Honors Thesis by**

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V449

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The concept of planet Earth warming as a result of human interaction is not new, and in recent years, linking the two has proved to be a continuing source of controversy. The United States government has been hesitant to take action with regard to the issue of global warming and climate change, perhaps in the hope that the milder winters, increased tropical storm activity, and melting ice caps will prove to be merely coincidental, or perhaps even that the globe is in some kind of massive transition. However, with a combination of mounting scientific research, international pressures, and heightened public awareness, the spotlight now focuses on the American legislative delay in addressing this politically polarizing issue, and thereby causing bureaucrats to feel the heat.

Recent media attention surrounding the newly inducted democrats and their promises for immediate legislative action suggest that the proposals to tax or cap CO<sub>2</sub> emissions, allow trading of greenhouse gas pollution permits, and fund continued research concerning global climate change are novel ideas being pushed into discussion by the fresh, left-leaning Congress. In actuality, legislative proposals now emerging from the 110<sup>th</sup> congressional body follow the lead of bureaucrats who served in the 108<sup>th</sup> Congress in 2003. While the nation is currently noticing a more publicized sense of

urgency surrounding congressional members' platforms on global warming and climate change, Capitol Hill's apparent change in attitude for addressing these issues is rooted in the past.

The Senate has shown particular trends over the years when addressing policy aimed at combating the progression of climate change and global warming through reoccurring themes reflected in numerous bills and amendments. Individuals who have promoted solutions to these areas of environmental concern have also become familiar over the years, particularly Senators John McCain of Arizona, Joseph Lieberman of Connecticut, James Jeffords of Vermont, and Jeff Bingaman of New Mexico.

But what has been created from the numerous legislative proposals made over the years besides another arena for political controversy to play out? While some parts of the world are currently taking active roles to combat the negative environmental effects resulting from global temperature rise through international agreements like the Kyoto Protocol, the United States continues to be held back by political apathy.

Uncertainty regarding human contribution to climate change has been a major reason for hesitation on the part of the United States toward joining the international effort to reduce global warming. This uncertainty exists despite evidence of significantly increased levels of carbon dioxide in the atmosphere dating back to the time of industrial revolution which has been confirmed since the late 1950's, as well as knowledge of the negative impacts on the make-up of our Earth's atmosphere by the excessive burning of coal documented in 1896 by Swedish chemist, Svante Arrhenius. (2) On the increasing amount of scientific evidence confirming human contribution to climate change, former administrator of the U.S. Environmental Protection Agency, Christine Todd Whitman,

was quoted stating, “The science now is getting to the point where it’s pretty hard to deny.” These are encouraging thoughts considering the official position our nation has chosen to take on the issue has not been up to par with foreign efforts combating global warming in the past. (16)

When negotiations to formulate an international policy agenda for combating the increase of global warming began in 1991 with the United Nations Framework Convention on Climate Change, principals were set in place with the purpose of guiding a forecasted international climate control regime. Discussions and subsequent commitments by nation states to this climate regime began in 1995 in Kyoto, Japan. While the United States did sign the agreement, we failed to ratify the protocol which would have mandated a 7% greenhouse gas emissions reduction below 1990 levels between the time of the protocol’s enactment in 2008 and end date in 2012. As justification for pulling out of the international regime, President Bush cited predictions of U.S. economic demise resulting from such stringent a reduction goal, and projected economic losses of \$400 billion together with a job-loss cost of 4.9 million. After pulling out of the treaty, Bush introduced an incentives-based plan for voluntary emissions reductions within the business community with goals of 4.5% reductions by 2010, which would be the equivalent of removing 70 million cars from the nation’s roads. (28)

With discussion of post-Kyoto regimes already occurring, foreign powers are questioning the future role of the United States, especially considering that the amount of greenhouse gas emissions the contiguous 48 states contribute globally is comparable to total emissions from the United Kingdom, Brazil, Russia, India, South Korea, and Canada, combined. (13)

(See Appendix I)

In late January 2007, concern was expressed in an article included in The Globe and Mail, media publication out of Ottawa, Canada that the United Nations efforts in battling the escalation of climate change were moving too slowly. Without the leadership from the powerful nations of the United States and Canada, initiatives like Kyoto will fall apart. (12) However, with a remaining lack of established domestic policy in the United States concerning climate change, hopes for enactment of stringent international regimes with U.S. inclusion still seem doubtful.

The executive administrative philosophy of President George W. Bush on management of environmental affairs is “focused on results” to make our air, water, and land cleaner through scientific advisement of policy decisions. (7) His approach to combating global climate change is through sustained economic growth, and the belief that a wealthy nation will have the ability to invest in a cleaner environment. In addressing policy considerations for the future of the issue, the President airs on the side of caution, “given the limits of our knowledge,” and attributes legislative inaction to meteorological variances and a continued sense of scientific uncertainty. (5) Since the enactment of the Clear Skies and Global Climate Initiative in 2002, scientific evidence of significant human contribution to the warming of the planet has only become stronger and more publicized. However, until recently a majority of scientific advisors to the republican executive denied that global warming was even in existence.

It was not until his 2007 State of the Union address that President Bush admitted to the negative implications human overuse of fossil fuels has had in altering the Earth’s climate, as well as using the phrase ‘Global Warming’ in reference to the problem. It was

the first time in 6 years that the environmental issue was noted in the State of the Union address, with proposals for a 20% reduction in fossil fuels over the next ten years, expansion in research and promotion of alternative fuels, and stronger fuel efficiency standards for automobiles. (6) However, the proposals included in the State of the Union address constitute merely a forecast of tentative actions upon which the President and his colleagues may choose to act, and in reflecting on previous policy agendas of years past, his executive focus seems to continually lie elsewhere.

The enthusiasm President Bush expressed for reevaluating America's energy use and freeing the nation from its "addiction to oil" might be aimed more at decreasing our expensive reliance on foreign sources, accounting for 59.8% of the country's petrol consumption in 2005, and further increasing domestic reserves demonstrated by his support of increased exploratory drilling in the Outer Continental Shelf and the Arctic National Wildlife Refuge. (29) Nevertheless, these theorized reductions signify progressive starts for the remainder of President Bush's second term, and in conjunction with his voiced a desire for the passage of bipartisan, cooperative energy legislation before leaving office, the leader of the Republican Party may show global environmental compassion after all.

President Bush still has yet to approve or initiate formal climate change policy and only encourages acts on a voluntary basis by citizens and industry to curb their own contributions to the growing surplus of greenhouse gases in our atmosphere by enacting their own control measures. (27) This lack of authoritative leadership on the issue could be just the problem with the United States government falling behind a domestic populous with a continually broadening environmental consciousness and enthusiasm for

resolute policy measures now. Michael Oppenheimer, a co-author of the newly released IPCC report believes, “the political will is there in the general population,” but a lack of confident leadership on the topic will not promote the necessary societal change. (20) Oppenheimer does however express optimism regarding those congressional representatives who are taking the initiative to form their own policy proposals, thereby straying from the uninspiring “laissez-faire” stance of White House legislative inaction on the climate change issue.

The number of members of Congress who will deny the existence of global warming and climate change is shrinking. In a February 2007 Congressional Insiders Poll recorded in the *National Journal*, 113 members of Congress provided their response as to whether or not, “...it has been proven beyond reasonable doubt that the Earth is warming because of man-made problems.” Of the 41 Democrats surveyed, 95% answered in the affirmative. One Democrat offered this anonymous opinion: “The only remaining doubt is whether we have the political will and leadership to face the challenge and responsibility of global warming.” On the Republican side, of the 31 surveyed only 13% were in agreement with the statement, and 84% found problems with the certainty of the poll question. The following opinions were offered by anonymous Republicans: “Yes (human actions have been proven to induce climate change), but there is also a natural component to the current warming trend.” “The Earth is in a warming trend, but the link to man’s activity is weak.” (8)

The November 7, 2006 congressional elections were a turning point for the legislative branch of the United States government, for the first time since Republican take-over in 1994 the Democrats regained majority in both the House of Representatives

and the Senate. After the victory, Democrats pledged their immediate attention to six major issues affecting the country, one of which being the current state of national energy. (29) With the induction of the new Democratic majority came new chairs to Senate committees related to energy and the environment. Democratic Senator Jeff Bingaman of New Mexico replaced Senator Pete Domenici, a New Mexican Republican, as chairman of the Energy and Natural Resources Committee. Senator Joseph Lieberman, Connecticut independent, replaced Republican Susan M. Collins of Maine, as chair of the Committee on Homeland Security and Government Affairs. However, possibly the most impacting change of chairmanship was in the Senate Committee on the Environment and Public Works where global warming defiant, Republican James M. Inhofe, was replaced by Californian Democrat and climate change policy enthusiast, Senator Barbara Boxer.

Historically, former chairman Senator Inhofe has been very vocal on the subject of global warming and his disbelief in the effects of human contribution to temperature and climate change. One memorable quote on the subject was Inhofe naming global warming, “the greatest hoax perpetrated on the American people.” (24) While strong science continued to accumulate evidence of human involvement in the expansion of climate change during Inhofe’s four year reign as chairman of the committee from 2003 to 2007, he held only five committee hearings concerning the topics of global warming or climate change. Additionally, of these five hearings’ notable witnesses, the most discussed testimonial supporting the disbelief of human induced climate change came from Michael Crichton, popular science-fiction author with no professional expertise on the subject. (16)

Senator Barbra Boxer's views on human induced climate change are progressive in realizing the necessary haste of effective legislative action on the subject, and the Senate's crucial role in the regulatory formation of that policy. In a letter to President Bush asking for cooperative assistance on passing legislation by the end of the year, Boxer referenced global warming as the "most pressing environmental issue currently facing mankind." (15) As the newly inducted chairman of the Environment and Public Works Committee, Senator Boxer wants the creation of climate policy to be a collaborative effort involving other committee chairs like Bingaman and Lieberman in order to assure Senate efforts will be justified with certification of a bill proposal into law. Boxer guaranteed the Democratic commitment to achieving legislative results with effective climate change policy to include economy-wide, mandatory greenhouse gas limits and the future involvement of the international community in working toward equitable global constraints. (15) Manik Roy, director of congressional affairs with the Pew Centre on Global Climate Change, was quoted after the congressional elections as saying, "Whereas Inhofe held hearings trying to prove climate change is a hoax, Boxer will create more of a rational debate that looks at the science of climate change, business realities, policy measures and how much they will cost." (14)

Senator Boxer plans to model potential legislation after measures newly passed into law in California, the first legislation in the United States acting to reduce pollution agents contributing to the increase of global warming. (9) The aggressive Global Warming Solutions Act requires a 25% emissions cut of greenhouse gases to reach 1990 emissions levels by 2020, and an 80% reduction below the 1990 levels by 2050. (4) However, Boxer realizes that any major action affecting the nation's economy by means

of taxation, emissions capping, or permit trading will have to pass through the Executive Office, which is why she has already requested presidential cooperation. Senator Boxer plans to first start with “low hanging fruit,” indirect attack procedures focused on improving energy efficiency, measures which do have presidential support, and then delve into the more controversial carbon restrictions. (10)

While the new chairs of Senate committees attempt to foster increased support for enacting nation-wide global warming legislation, seven bills on the topic of greenhouse gas emissions control have already been introduced since the start of the 110<sup>th</sup> Congress in the beginning of January 2007. Of these seven, four of the proposals have been initiated by members of the Senate, with promises of more to come in the next few months. These bills include: S. 309, the Global Warming Pollution Reduction Act sponsored by Senator Barbara Boxer herself, of California, and Senator Bernard Sanders of Vermont; S.485, the Global Warming Reduction Act sponsored by Senators John Kerry of Massachusetts and Olympia Snowe of Maine; S. 280, the Climate Stewardship and Innovation Act of 2007 sponsored by Senators John McCain of Arizona and Joseph Lieberman of Connecticut; and two proposals by Senator Jeff Bingaman of New Mexico. (18)

A comparison graph, crafted by John Larsen of the World Resources Institute, depicts the projected effects of each of these congressional proposals in terms of metric tons of carbon dioxide-equivalent emissions into the year 2050. Also illustrated by the graph are predicted growth scenarios measured in millions of metric tons of CO<sub>2</sub> emissions until 2050 under the continuation of current administrations executive policy

with no laws on carbon dioxide reduction, as well as where the nation would have been had we chosen to ratify the Kyoto Protocol with reductions starting in 2010.

(See Appendix II)

The current four proposals in the Senate differ in their stringency of emissions reductions for target years and their associated reductions amounts, however their methodologies are fairly similar. Some of the trends in the emerging proposals from Senate members include comprehensive greenhouse gas reductions measured by their computed carbon dioxide equivalent amounts, economy-wide trading programs of allotted emissions credits, a presence of “safety-valve” provisions in the trade permitting system to ease the targeted emissions caps if effects on the economy prove to be too harsh, increased funding for research and development of clean technology, and incentive mechanisms for early implementation of clean technology and voluntary emissions reductions.

Of these proposals, the Sanders-Boxer, Global Warming Reduction Act is the most stringent in terms of emissions reductions and target years, and whose goals come the closest to achieving stabilization of greenhouse gases at atmospheric levels of 450 ppm by 2050. The proposal encompasses all six-greenhouse gases under reductions, and includes a voluntary economy-wide tradable permit system, with transition assistance to companies and consumers. Additional cost controls include a cap freeze if prices are unrealistically high for current technology options, and indexing would be employed to circumvent further price increases. Provisions also include emissions standards for vehicles, power plant efficiency and renewable energy sources. The reduction targets follow a 2% reduction per year of 2010 emissions levels to achieve 1990 levels by 2020,

27% below 1990 levels by 2030, 53% below 1990 levels by 2040, and a final target of 80% below 1990 by 2050. (23)

The Kerry-Snowe, Global Warming Reduction Act is the next stringent proposal which includes reduction targets aimed at 1990 emissions levels by 2020 with a 2.5% annual reduction from 2020-2029, and a 3.5% annual reduction 2030-2050 intended to reach 60% below 1990 levels in 2050. The proposal covers all six-greenhouse gases and is economy wide, with trading permits allocated by the president. Early reductions incentives are accounted for, as well as funding for technology, research and development, and consumer impacts from adaptation. The proposal also includes required efficiency standards for vehicles, and the promotion of renewable energies. (23)

The McCain-Lieberman, Climate Stewardship and Innovation Act of 2007 targets emissions level reductions by taking incremental steps over time. Reduction goals are to reach 2004 emissions levels by 2012, 1990 levels by 2020, with a 20% reduction below 1990 levels by 2030, and a 60% further reduction below 1990 levels by 2050. The proposal accounts for all greenhouse gases, covering emissions sources “downstream” and fuels “upstream.” Allocations of the permits are to be determined by the administrator, with cost control methods of borrowing for 5-year periods with interest. Credits would be awarded for reductions attained before 2012. Additional provisions include incentives for advanced climate-related technology, and assistance with transitional periods of reducing emissions. (23)

The two discussion drafts by Jeff Bingaman propose emissions reduction measured by emissions intensity, reduction amounts determined by production levels in metric tons of CO<sub>2</sub> per million dollars of GDP. The measurement of reduction limits by

emissions intensity is more flexible in comparison with overall percentage emissions reductions, or reductions relative to established baseline years that are in keeping with proposals by Bingaman's Senate constituents. All greenhouse gases are included in the proposals, with an economy-wide trading system and a focus on upstream pollutants. They allow for 2.6% annual reduction in emissions intensity from 2012-2021, with a 3% annual intensity reduction starting in 2022. Bingaman does not aim at emissions stabilization with emissions level targets of previous years, but allows for continued growth. His proposal simply reduces the emissions amounts that would take place without the enactment of any greenhouse gas restrictions. The allocation of the pollution permits in his trading system would be done by increasing auction: 10% in 2012, 20% in 2021, and 65% in 2044 with some specific allocations for various sectors, such as 29-30% for most states. Early action on emissions reduction is encouraged by 1% allowances set aside between the years 2012-2021, together with funding and incentives for clean technology adoption and climate research and development. (23) Bingaman believes that due to the slower rate of emissions reductions associated with his control plans and the allowance for continued but lessened growth in emissions, the proposal is more politically viable to passage into law by members of Capitol Hill. (3)

Media hype surrounding the rapid introduction of seven bills related to global climate change in the first few months of the 110<sup>th</sup> Congress might initiate thoughts of innovation on behalf of the Democratic majority take-over. But congressional activity surrounding the issues of climate change and global warming has actually been present since the late 1990s, paralleling the amount of scientific evidence confirming their existence and continuously gaining clout. Starting with the seven global warming or

climate change related pieces of legislation proposed during the 105<sup>th</sup> Congress by the end of 1997, introductions of subsequent legislation has only continued to increase in regularity with 25 in the 106<sup>th</sup>, 80 in the 107<sup>th</sup>, and 96 in the 108<sup>th</sup>, and 106 by the end of the 109<sup>th</sup> Congress in December of 2006. (19)

With proposals submitted in the 108<sup>th</sup> Congress, legislative trends regarding the methodology of global warming and climate change resolutions started to form the base of similar legislature to follow in the next few years. Elements of these proposals included target reductions on specific greenhouse gases of NO<sub>x</sub>, SO<sub>2</sub>, Mercury, and CO<sub>2</sub>. Of the prominent legislative proposals, Senator James Jeffords of Vermont introduced the Clean Power Act of 2003, which included the implementation of a cap and trading program for utilities on CO<sub>2</sub> and NO<sub>x</sub>. Senator Thomas Carper of Delaware also introduced a proposal of similar provisions under the Clean Air Planning Act of 2003. However, the only proposal to be taken seriously in the 108<sup>th</sup> Congress was the Climate Stewardship Act of 2003, introduced by co-sponsors Senator John McCain of Arizona, and Senator Joseph Lieberman of Connecticut. This policy called for a comprehensive greenhouse gas emissions cap and trade system of equated carbon credits, a method of equating the negative atmospheric impact of other greenhouse gases with the associated levels of CO<sub>2</sub> emissions. The proposal set goals that extend into 2020, with targets of 2000 emissions levels by 2010, and 1990 emissions levels by 2016. (30)

The start of the 109<sup>th</sup> Congress in January of 2005 brought an increased drive for climate control legislation, and by the end of the congressional term, 106 legislative proposals concerning climate change or global warming had been introduced on Capital Hill. Resolutions to the issue of global climate change were offered more frequently in

the 109<sup>th</sup> due to the increased amount of scientific information supporting the need for legislative initiatives. The 2005 Energy Policy Act acted as a springboard for much debate and resulted in the Senate vote of four climate change amendments to the act, of which two passed. These consisted of a non-binding resolution expressing the Senate's acknowledgement of anthropogenic contribution to global temperature rise through greenhouse gas emissions, as well as a realization that Congress needs to enact mandatory, market-based mitigation programs to reduce U.S. contributions. (17) (31)

These 106 bills, resolutions, and amendments directly addressing the future of climate change and the presence of greenhouse gas emissions in our atmosphere fell under provisions on Greenhouse Gas Emission Limits, Greenhouse Gas Emissions Reporting, International Negotiations, Transportation Emissions, Climate Science Research, Climate-Friendly Technology Research and Development, Agriculture and Carbon Sequestration, and Nuclear Power. (31) These bills contained variations on adapted traditional policy mechanisms of "command and control" regulation on emissions, greenhouse gas emissions taxes, and market-based techniques for limiting emissions. Additional criteria of the more dominant proposals included funding for increased climate research and technology development and deployment, instituting a greenhouse gas reporting procedure and registry, multiple, or specified pollutant considerations, and emissions caps and trading allowances for all the greenhouse gases. (31)

Some of the prominent Senators proposing climate change legislation were Senator James Jeffords of Vermont with the Clean Power Act of 2005; Senator Susan Collins of Maine with the Abrupt Climate Change Research Act of 2005; Senator Chuck

Hagel of Nebraska with multiple versions of the Climate Change Technology Deployment in Developing Countries Act of 2005, the Climate Change Technology Tax Incentives Act of 2005, and the Climate Change Technology Deployment and Infrastructure Credit Act of 2005; Senator Thomas Carper of Delaware with the Air Planning Act of 2006; and Senator John McCain of Arizona with two versions of the Climate Stewardship and Innovation Act of 2005. (17) John Larsen of the World Resources Institute also compiled a comparison graph of legislative proposals concerning climate change or global warming control introduced to the 109<sup>th</sup> Congress.

(See Appendix III)

As illustrated in the graph, the climate proposals introduced to the 109<sup>th</sup> Congress added much more variety in annual target stringency and emissions reductions levels than the previous proposals introduced to the 108<sup>th</sup> Congress. Most all of the 106 proposals were intended to start in 2006, with targets reaching either into 2020 or 2050. Among the most notable proposals within this congress was the McCain-Lieberman, Climate Stewardship and Innovation Act of 2005 that had goals of emissions stabilization at 2000 levels after 2010, and a more stringent target reduction schedule than had been previously proposed in the 2003 version of the bill. The Climate and Economy Insurance Act of 2005, a draft proposal by Jeff Bingaman was never formally introduced, but also notable and set reduction goals based on his signature policy component of emissions intensity, which is later used in his draft proposals for 2007. Also provided for were “safety-valve” caps on the price of greenhouse gas permits in the case of economic demise due to the trading program. Bingaman’s target goals still allowed for the growth of emissions, not stabilization. (17) Both of these proposals were mandatory programs intended to reduce

emissions of greenhouse gases with the implementation of an economy-wide cap and tradable permit system. However, the market-based plan for meeting mandatory emissions reductions targets increasingly prompted a debate of the associated economic costs, which delayed the passing of any significant climate control legislation. (11)

The apparent legislative trends that can be traced from the 108<sup>th</sup> Congress to the 109<sup>th</sup>, and into those bills already introduced in the 110<sup>th</sup>, fall under provisions of comprehensive greenhouse gas reductions, mandatory and economy-wide trading systems, incentives for early reductions and implementation of clean technology, and further funding of climate change science research. Growth in the comprehension of these climate policy proposals and their associated stringency of reduction targets reflects the increase in scientific study on the topic, as well as the realization by members of government regarding the necessary urgency for legislative action to reduce the expansion of global warming and its associated global consequences.

The continual increase in legislative proposals concerning climate change and global warming is demonstrative of the rise in awareness with both the public and their elected government representatives on the issue, as well as the acknowledgement of their duty to resolve the associated consequences increasing the environmental degradation of our planet. But what has been preventing climate control legislation from passing into law? Domination by a Republican party in the executive branch for the past six years, and the legislative branch for the past twelve years may have had a preventative presence in pushing forth significant legislative action regarding initiatives aimed at halting the escalation of global climate change.

House Representative and Democrat, Henry Waxman of California recounted in late January 2007, evidence of White House officials deliberately distorting federal research on climate change and global warming to fit the Presidential position of uncertainty on anthropogenic contribution to global climate change. Further investigation found advocacy group, the Union of Concerned Scientists, to have surveyed 279 climate scientists of which half admit to being asked to remove global warming or climate change reference from their research. (10) A former employee of the federal Climate Change Science Program office, Rick Plitz, even resigned in 2005 after refusing the requests by White House officials to weaken or delete language concerning evidence of global warming in official reports. (10) Additional efforts to suppress evidence of global warming were found in leaked documents from the Executive Cabinet advising Environmental Protection Agency, which revealed intentional burying of an analysis plan curbing carbon dioxide emissions. This attempt to conceal the EPA analysis was performed even with the known efforts supporting carbon control by Senators John McCain and Joseph Lieberman with their Climate Stewardship Act of 2003. (21)

The November congressional elections that replaced the moderate Republicans with moderate Democrats have members optimistic for the passage of significant legislation within next year (27). Another opinion on the future of climate change policy with the induction of the new Democratic majority found an anonymous Democrat to say, "Global warming is real. Its happening now and human pollution is to blame. For 12 years, the Republicans ignored this looming threat. Democrats will not make that same mistake." (8) This past December, David Doniger, climate policy director for the National Resources Defense Council, expressed confidence in the new bureaucratic

balance and the promise for change, “There’s a lot of momentum building for global warming legislation...and it will be done now the Democrats control Congress and control the agenda.” (14) While the Democrats now have the congressional majority, it is not as if climate legislation will now pass without obstacles. Democrats have 51 votes in the Senate, but 60 are required in order to break a filibuster, an action common to issues with this much surrounding controversy. In an Insiders Poll taken by the *National Journal* on congressional representatives concerning legislative proposals to reduce global warming, and which features would garner the most support, Republicans and Democrats remained divided. (8)

Of the 40 Democrats polled, indirect measures aimed at the goal of global warming reduction were most favored 95% by increased spending on alternative fuels, and 90% by higher fuel-efficiency standards for automobiles. These measures were followed in popularity by 88% support for mandatory limits on carbon dioxide emissions, and then a “cap-and-trade” carbon dioxide emissions control program with 83% support. The highest percentage of Republican support favored a greater reliance on nuclear energy with 90% of the 31 members surveyed, and then a subsequent gap separating the next favored measure of increased spending on alternative fuels with 71% support. Of the congressional members polled, both parties were the least supportive of a carbon tax, Democrats fostering 50% support and Republicans only 3%. (8)

Due to the delay in nation-wide legislation placing restrictions on emitters of greenhouse gases, states have begun to take initiatives combating global climate change on their own. Of the fifty states, California has been the most aggressive by recently enacting the Global Warming Solutions Act that will require 25% greenhouse gas

emissions reductions from current levels by 2020, and 80% by 2050. (4) Other state efforts include the Regional Greenhouse Gas Initiative (RGGI) for Northeast and Mid-Atlantic states, who are in discussion of the potential implementation of a regional cap and trade program for carbon dioxide emissions from regional power plants. RGGI was started in 2003 by New York Governor George E. Pataki, and has grown to include Connecticut, Delaware, Maine, Massachusetts, New Hampshire, New Jersey, Rhode Island, and Vermont. Their initiative aims at system uniformity across participating states with hopes for expansion for additional greenhouse gas inclusion, as well as additional adoption by surrounding states. (22)

Cities have also been instrumental in taking the initiative for global warming control, discussions on various strategies in promotion of “greening cities” have taken place at the annual Conference of Mayors since 2000. In 2005, Greg Nickels of Seattle proposed the U.S. Mayors Climate Protection Agreement, a measure that would commit cities to the same emissions reduction targets of the Kyoto plan for the United States between the years of 2008 and 2012. Methods for achieving the emissions goals range from replacing incandescent bulbs in city stoplights with LEDs and converting city transportation and operating vehicles to hybrids or bio-fuel consuming vehicles, to anti-sprawl land-use policies, urban forest restoration projects, and increased public awareness campaigns. The current commitment of mayors across the country thus far, numbers 435. (25)

Efforts to get involved by industry heads have been facilitated by the United States Climate Action Partnership (USCAP), an alliance of business and environmental organizations that came together in January of 2007 with the hope of encouraging

legislative action by the federal government on the reduction of greenhouse gas emissions through carbon control. Members include Alcoa, BP America, Caterpillar Inc., Duke Energy, DuPont, FLP Group, General Electric, Lehman Brothers, PG&E Corporation, PNM Resources, Environmental Defense, Natural Resources Defense Council, the Pew Center on Global Climate Change, and the World Resources Institute. In the past few months the coalition has produced a solutions-based proposal, entitled *A Call for Action*. It is comprised of a set of recommended principals to guide the formation of a market-driven, economy-wide regulatory approach to climate change policy. (26)

The proposal is adamant about the introduction of a cap and trade program with associated policy imposing mandatory reductions on large stationary emitters as well as the abundant transportation source sector. Among the recommendations are reductions targets set for the short- and mid-term, national acceleration of research and development of cleaner technology with rapid deployment, and encouraged negotiations with international entities for global solutions affecting the developed and developing world.

The members of the USCAP, "...pledge to work with the President, the Congress, and all other stakeholders to enact an environmentally effective, economically sustainable, and fair climate change program consistent with our principles at the earliest practicable date." (26) The presence of prominent members of the business community in support of regulatory measures to restrict their own greenhouse gas emissions is demonstrative of the spread of consciousness to the economic consequences associated with the proliferation of climate change into a new realm. Acting as participatory agents in the drafting process of climate change legislation will only benefit the business and

industrial agents involved by making sure their economic benefits remain maximized under eventual legislative restrictions.

Because one of the major policy possibilities for combating global warming escalation centers on the reduction of carbon dioxide emissions, politicians are hesitant to promote legislation that could negatively jeopardize our industrial and economic sectors, large contributors to U.S. emissions. With excitement surrounding the 2008 Presidential election already beginning, candidates' outlooks on the state of our nation are being uncovered, and the issue of climate change and the future United States position domestically and internationally will undoubtedly demand a primary platform in the up-and-coming debates. The April 2007 addition of *Newsweek* magazine compared current candidates and their views on global warming and the nation. Among the Democratic candidates, Senator Hillary Clinton of New York, Senator Barack Obama of Illinois, and former North Carolina Senator John Edwards all have records of previous support for direct or indirect climate control legislative action.

Senator Clinton is currently a member of the Committee on the Environment and Public Works and sponsors the 2007 version of McCain's Climate Stewardship and Innovations Act. Her climate control plans includes the elimination of oil company tax breaks, with investments in alternative energy for the displaced funds. Senator Obama is a former member of the Committee on the Environment and Public Works, and a current member of the Committee on Homeland Security and Governmental Affairs. He is also a sponsor of the 2007 McCain bill, an advocate of increased fuel economy standards, and further integration of fuel-flex or hybrid vehicles onto our roadways, as well as promoter of clean coal technology expansion of research and deployment. Former Senator Edwards

wants to expand the opportunities for green jobs by investment in the new energy economy and is avidly against exploratory oil drilling in the Arctic National Wildlife Refuge. (1)

Of the announced Republican candidates, Rudy Giuliani, the former mayor of New York City, has been a proponent of energy efficiency in NYC public buildings and previously approved a plan to convert city buses to natural gas. His mission is to restore “conservation as a conservative virtue,” in attempts to remove partisan association with environmentalism. Though he remains skeptical of negative business effects on the economy due to restrictive global warming policy. Candidate John McCain, Arizona Senator since 1987 has been a continual proponent of energy policy and increased reliance on alternative energy resources. He has introduced numerous bills on climate change legislation, and promises to “tackle global warming,” with a significant national energy plan to be discussed in detail later this spring. Global warming and the protection of our environment is assured not be lost in legislative priority under his lead. The Governor of Massachusetts, Mitt Romney is not the potential presidential candidate for 2008 with the most environmentally minded campaign. He is a promoter of an economically minded environmental agenda, with a concern for national security considering our current state of foreign energy dependence, and is in favor of reexamining domestic sources for primary energy consumption. (1)

Due to the current hype in public awareness on climate change and global warming, and the need for government action regulating the reductions of our nations greenhouse gas contributions, the 2008 Presidential election promises to include definitive positions from the candidates, as well as climate control strategies. After the

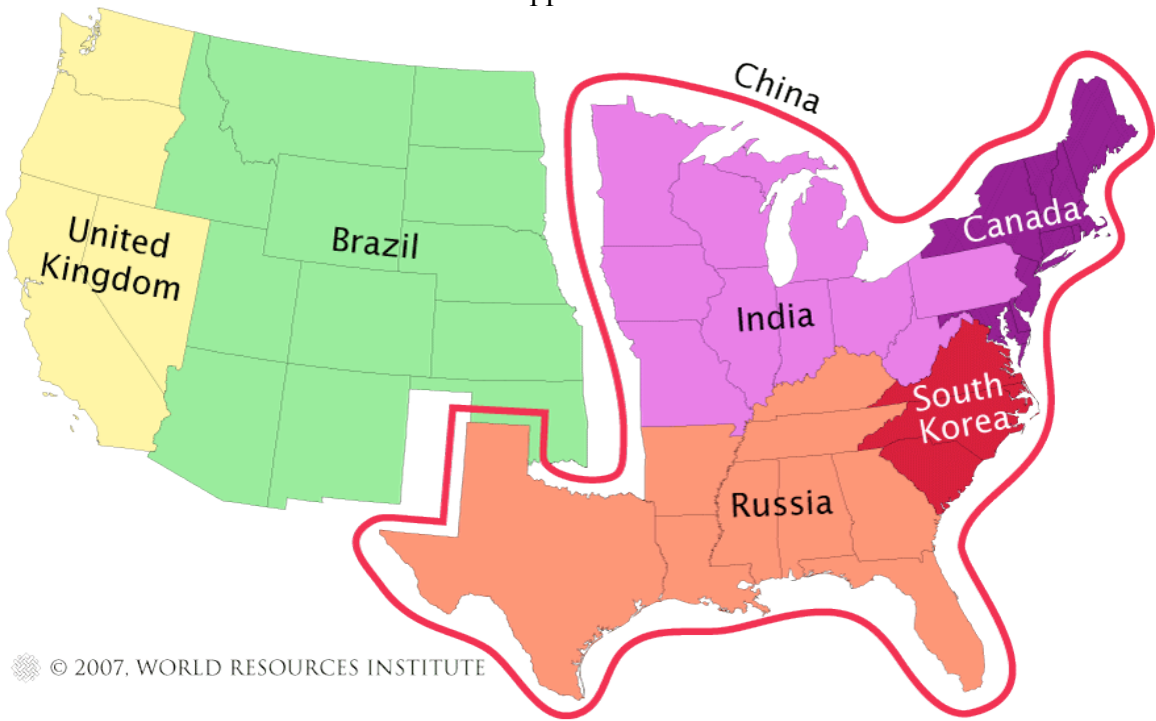
2008 election there also promises to be an aggressive demand for follow-up on campaign pledges concerning climate change, leaving no room for empty vows on government action working to stop global warming.

The outlook on global warming and climate change policy being enacted in the near future is promising considering the continual growth in scientific knowledge, legislative attention, and citizen. The legislative trends which have become apparent in climate change policy proposals starting with a base in the 108<sup>th</sup>, expanding throughout the 109<sup>th</sup>, and continuing into the 110<sup>th</sup> will only persist as further scientific knowledge is acquired and economic analysis of policy options are conducted in the years to come. The dominant presence of a cap and trade system as a method of emissions control for the United States, to cite just one of the reoccurring methods among the proposals from the 110<sup>th</sup> Senate proposals, should be an indicator of its familiarity as a front-runner in climate change solution policy. Emissions trading involves the market economy in working to achieve a better environment, a strategy that shows promise due to the creation of a profit incentive for firms to clean-up emissions or incurring a penalty requiring them to pay. State and regional initiatives are paving the way for climate control strategies, creating a base for federal legislation to extend off of, and industry support in drafting control systems will only hasten the support of accepted policy by the business sector for enactment into law.

An extensive analysis of the cap and trade methodology, as well as that of other emissions control methods, is necessary prior to the enactment of any substantial, national legislation. However, due to the rapid growth in climate change policy proposals since 1997, the outlook is positive for passage of legislation in the near future. The

importance global warming positions will demand among the 2008 Presidential candidate debates will heighten voter awareness to variations on the future of climate control policy, and it will be the voters who decide their preferred Executive administration in control of the pending future of our environment. With enthusiasm for legislative action already propelling global warming bills in the Senate, confidence should be found in future enactment of national climate policy reducing the United States contributions to global climate change and halting the expansion of associated consequences which plague our planet today.

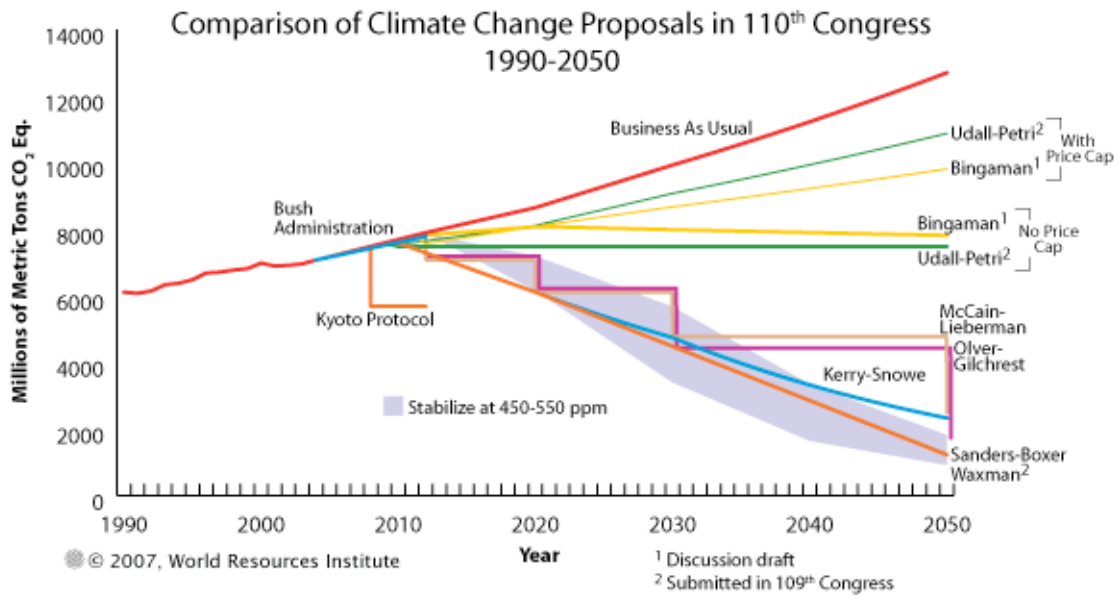
Appendix I



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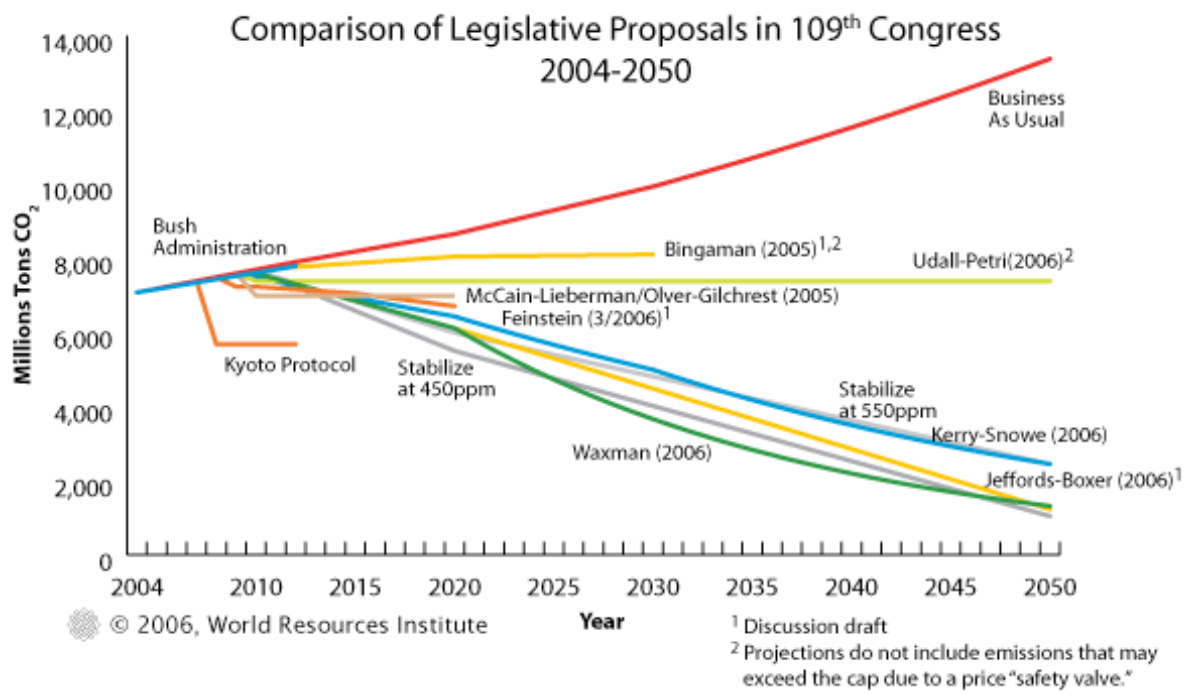
(13)

Appendix II



(18)

Appendix III



(17)

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