## \*\*\* 1AC

### 1AC—Adv 1

**Advantage One --- The Economy**

**Absent a robust PTC extension the wind manufacturing sector will collapse. Extension ensures market stability and predictability.**

**Matthews 12** (Richard, Environmental Journalist who contributes to more than fifty sites and publications including Industry Intelligence, Eco-Business.com, Environmental News Network (ENN), Green Conduct, Solar Feeds, Global Warming is Real, The Green Economy Post and Ithica School of Business, *Why Congress Must Extend the PTC for Wind Power*, March 2012, http://globalwarmingisreal.com/2012/03/07/why-congress-must-extend-the-ptc-for-wind-power/)

The expiration of the production tax credit (PTC) at the end of this year constitutes a **major obstacle** for U.S. wind energy. If the PTC is not extended by Congress, tens of thousands of jobs will be lost and **economic development** would be stymied. As stated in a report from Ernst and Young, “Failure to extend this incentive could stop wind development **in its tracks**.”

The federal renewable electricity PTC is a per-kilowatt-hour tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year. Originally enacted in 1992, the PTC has been renewed and expanded numerous times. The federal tax credit gives wind power generators 2.2 cents for every kilowatt-hour of energy produced, but it is slated to expire at the end of 2012 unless lawmakers approve a renewal.

The PTC has fueled the proliferation of wind power installations across the U.S. Since 2005, the PTC has helped to generate 47,000 megawatts of new capacity. A total of 35 percent of the new electrical generation capacity has been developed due to the PTC over the past five years. This activity is worth $60 billion in private investment.

The best wind farms in the world already produce power **as economically** as coal, gas and nuclear generators. In terms of cost efficiency, rising fuel prices mean that wind power could achieve **parity by 2016**, but this won’t happen without the PTC.

According to the U.S. Energy Information Administration’s (EIA) Annual Energy Outlook 2012, wind is one of the dominant players behind increasing U.S. renewable energy generation. Wind power now generates 3 percent of America’s electricity. Forecasts predict that wind generation will almost double between 2010 and 2035, but the growth would slow substantially if the PTC were allowed to expire.

“If Congress chooses not to renew, there is no hope for the wind industry next year,” John Graham, a BP executive, said of the tax credit. “Without it, U.S. wind projects aren’t viable.” Failure to extend the PTC would result in the loss of an estimated 40,000 jobs in the wind industry. Members of the industry supply chain are already being affected due to the uncertainty. The current PTC **uncertainty** has begun to cause layoffs and in the absence of an extension, further job losses and even plant closings will **keep accelerating**.

Despite economic headwinds, the PTC has helped the US wind market grow stronger. In 2011 the wind market improved upon the 5 GW posted in 2010. More than 7 GW of wind capacity is expected to be installed in the US in 2012 as developers of wind energy rush to complete projects before the expiration of the PTC at the end of this year. Although the wind market will experience an acceleration of installations, especially during Q1 and Q2 of 2012, if the PTC is not extended, a **major stoppage** throughout the entire US wind industry can be anticipated in the second half of 2012.

Although bipartisan contingents in both the House and Senate are calling for action, the fight over the extension of the PTC continues on Capitol Hill. U.S. Sens. Mark Udall (D-Colo.), Jerry Moran (R-Kan.) and 10 colleagues from both parties wrote to Senate Majority Leader Harry Reid (D-Nev.) and Minority Leader Mitch McConnell (R-Ky.) urging swift action on extension of the wind energy production tax credit (PTC).

In addition to Udall and Moran, the Senate letter was signed by Sens. Michael Bennet (D-Colo.), John Boozman (R-Ark.), Tom Harkin (D-Iowa), Chuck Grassley (R-Iowa), Tim Johnson (D-S.D.), John Hoeven (R-N.D.), John Kerry (D-Mass.), Scott Brown (R-Mass.), John Thune (R-S.D.), and Jon Tester (D-Mont.).

As the Senators explain in their letter, “An extension of the wind production tax credit should provide for some **long-term stability** while setting forth a path for how the wind industry can move towards **a market-based system**. While it is clear that the wind industry currently requires tax incentives like the production tax credit to compete, Congress needs to provide the wind industry with the **stability** and **predictability** to plan for the future.”

Four U.S. Representatives from the Illinois congressional delegation signed a letter to the leadership of the House and Senate calling for “a short-term Production Tax Credit extension for wind energy at the earliest opportunity in the first quarter of 2012.”

A House bill seeking to extend the PTC has 72 co-sponsors, including 18 Republicans. The bipartisan Governors’ Wind Energy Coalition, (including 23 Republican and Democratic Governors from across the U.S.), and the Western Governors’ Association also support the extension. This legislation has received the endorsement of a broad coalition of more than 370 members, including the National Association of Manufacturers, the American Farm Bureau Federation and the Edison Electric Institute. A PTC extension even has the support of the environmentally indifferent U.S. Chamber of Commerce and staunch Republicans like Governors Terry Branstad of Iowa and Sam Brownback of Kansas.

Forbes reports that a total of 15 major companies wrote to Congressional leaders urging extension of the PTC. These companies represent some of America’s biggest brands and largest purchasers of wind energy. The list includes Starbucks, Staples, Nike, Levi Strauss & Co., Campbell Soup Co. and Yahoo!. As stated in the letter, “The PTC has enabled the wind industry to slash wind energy costs – 90 percent since 1980 – a big reason why companies like ours are buying increasing amounts of wind energy.” Wind energy is increasingly attractive because it helps companies to manage costs and reduce their emissions profile while being less reliant on the price and supply volatility of foreign oil. Unlike fossil fuels, wind can offer 20-30 year fixed prices.

Opposition comes from conservatives who oppose all federal investments in energy production including members of Congress who are affiliated with the Tea Party.

In another Forbes article, Denise Bode, CEO of the American Wind Power Association wrote that wind energy is “one of **the fastest growing** new sources of US manufacturing jobs,” she said, “the PTC has driven tremendous growth in wind’s manufacturing sector.” The U.S. now has over 400 manufacturing facilities in 43 states involved in wind turbine manufacturing. That represents a 12-fold increase in domestic manufacturing over the last six years.

According to Bode, American wind power accounts for 75,000 American jobs, and can grow to almost 100,000 jobs four years from now. According to a Bush Administration study, wind can support **500,000** American jobs in less than 20 years. But these jobs won’t materialize in the absence of the PTC.

Bode quotes economic studies, which have demonstrated that Congressional inaction on the PTC will eliminate 37,000 American jobs, close plants and forego billions of dollars in private investment.

“Wind energy is an American success story and the federal Production Tax Credit (PTC) for wind is driving this success. But we need Congress to extend the PTC and keep taxes stable and low on wind in order to keep this success story going,” Bode said.

The PTC enables wind energy to compete with the heavily subsidized fossil fuel industry. Failure to extend the PTC will cripple wind power’s **competitiveness**, which will **undermine the economy** and kill one of the **greatest job creation engine**s in the United States.

**Conventional energy will destroy the economy and the manufacturing sector.**

**Sovacool 9** (Benjamin K., Assistant Professor at the Lee Kuan Yew School of Public Policy, part of the National University of Singapore. He is also a Research Fellow in the Energy Governance Program at the Centre on Asia and Globalization. He has worked in advisory and research capacities at the U.S. National Science Foundation’s Electric Power Networks Efficiency and Security Program, Virginia Tech Consortium on Energy Restructuring, Virginia Center for Coal and Energy Research, New York State Energy Research and Development Authority, Oak Ridge National Laboratory, Semiconductor Materials and Equipment International, and U.S. Department of Energy’s Climate Change Technology Program. He is the co-editor with Marilyn A. Brown of Energy and American Society: Thirteen Myths (2007) and the author of The Dirty Energy Dilemma: What’s Blocking Clean Power in the United States (2008). He is also a frequent contributor to such journals as Electricity Journal, Energy & Environment, and Energy Policy, Going Completely Renewable: Is It Possible (Let Alone Desirable)?, The Electricity Journal, Volume 22, Issue 4, May 2009, Pages 95–111)

F. Local employment and revenue

The more capital intensive a power plant is, the less embodied labor it has. Nuclear and fossil derived electricity are the most capital-intensive, and create net reductions in regional employment as ratepayers must **reduce expenditures** on other goods and services to finance construction. Renewable energy technologies such as wind and solar, however, generate three to **10 times as many jobs** per MW of installed capacity as fossil-fuel- or nuclear-based generation.26 Renewable power sources also contribute to local economic growth and provide better jobs. The manufacturing of renewable power technologies involves a **highly skilled workforce** and a modernizing of the local **industry base**. The use of renewable energy makes local businesses less dependent on imports from other regions, frees up **capital for investments** outside the energy sector, and serves as an important financial hedge against future energy price **spikes**. In some regions of the United States, such as the Southeast, electric utilities expend $8.4 billion per year importing the coal and uranium needed to fuel conventional power plants. Investments in those power plants send money out of the economy whereas investments in renewable power keep money in the economy. About 50 cents per every dollar expended on conventional electricity leaves the local economy (and in some areas 80 to 95 percent of the cost of energy leaves local economies), whereas every dollar invested in renewable electricity can produce **$1.40** of gross economic gain.27

**Wind manufacturing is the fastest growing sector. The PTC prevents its implosion.**

**Cuttino 12** (Phyllis, Director of the Clean Energy Program at the Pew Environment Group, Previously worked on the senior staffs of Sen. Brock Adams of Washington and Sen. Dianne Feinstein of California, Served as vice president of public affairs for the United Nations Foundation (UNF) and the Better World Fund, Programs developed from Ted Turner’s $1 billion gift to U.N. causes, at UNF, she oversaw communications activities as well as a $50 million grant portfolio as senior vice president at a strategic communications consulting firm in Washington, Cuttino helped Fortune 500 companies, international and domestic nongovernmental organizations and U.N. entities to influence public policy and increase awareness of critical issues, *Congress Must Act on Clean Energy*, http://energy.nationaljournal.com/2012/08/should-wind-tax-credit-stay-or.php)

In 2011, for the first time in several years, the United States led the world by investing more than $48 billion in clean energy. The clean energy sector represents one of the **fastest-growing** industries globally, with investment increasing more than 600 percent between 2004 and 2011 (excluding research and development).

We're in danger of losing our place at the top, however. To maintain our lead amid fierce international competition and to continue to attract private capital, there must be policy **certainty**. While other nations have **national policies** to encourage the adoption of clean energy, we rely on a **patchwork of state policies** and cyclical federal tax incentives, one of the most important of which is to end in a year.

The production tax credit (PTC) is an **effective tool** to keep electricity prices low and encourage the development of proven clean energy projects. While not large--about 2.2 cents per kilowatt hour--it gives American businesses the certainty they need to continue to invest, build, and deploy. But it's set to expire at the end of 2013. Uncertainty about whether Congress will act to extend the PTC has already resulted in a sharp drop in investments in wind energy production, threatening the livelihoods of the more than 78,000 people nationwide who are in wind-supported jobs.

When Congress has allowed the PTC to expire in the past, wind installations declined by 73 to 93 percent. According to a December 2011 study by Navigant, a global consulting firm known for its expertise in energy issues, 37,000 wind-supported jobs would be lost if the PTC was not extended before 2013. Congress should enact a multiyear extension of this incentive, which provides certainty to the industry and would ensure the continued growth of renewable energy industries. Our country leads the world in clean energy venture capital investment, but without such **strong policy commitments** to clean energy as the PTC, it will be challenging to scale up new innovations. If demand for these modern technologies is not created in the United States, development of the clean energy industry will suffer.

There is no lack of political support. Karl Rove, who was a senior advisor to President George W. Bush, raised eyebrows recently when he joined with Robert Gibbs, who served as President Barack Obama's press secretary, to publicly support congressional action to extend financial incentives for development of wind energy. In endorsing the policy, Rove said, "My hope is that after the election, people say, look, let's start making some priorities, and find some things that we can agree on, and maybe one of them is the production tax credit." If political party operatives such as Rove and Gibbs, Republican and Democratic governors, and the Sierra Club can agree to extend this policy, Washington lawmakers from both sides of the aisle whould be able to do so as well.

Policy matters. Nations that have strong policy commitments to clean energy already reap the economic rewards. If the United States is to **effectively compete** in the global clean energy race, Congress should extend the PTC.

**Manufacturing is the largest determinate of economic growth.**

**Vargo 3** (Franklin, Vice President for International Economic Affairs at the National Association of Manufacturers, Had a distinguished career at the United States Department of Commerce, His many positions at the Commerce Department included serving as Deputy Assistant Secretary for Asia, Deputy Assistant Secretary for WTO Affairs and for trade agreements compliance, and Deputy Assistant Secretary for Europe, Holds the President’s Distinguished Executive Award – the highest award that can be granted to a U.S. government executive, *Hearing On China’s Exchange Rate Regime and Its Effects on the U.S. Economy*, Testimony of Franklin J. Vargo Vice President, International Economic Affairs National Association of Manufacturers On Behalf of The National Association of Manufacturers Before the Subcommittee on Domestic and International Monetary Policy, Trade, and Technology of the House Committee on Financial)

MANUFACTURING: VITAL TO AMERICA

I would like to begin my statement with a review of why manufacturing is **vital to** the U.S. economy. Since manufacturing only represents about 16 percent of the nation’s output, who cares? Isn’t the United States a post-manufacturing services economy? Who needs manufacturing? The answer in brief is that the United States economy **would collapse** without manufacturing, as would our national security and our role in the world. That is because manufacturing is really **the foundation** of our economy, both in terms of innovation and production and in terms of **supporting the rest** of the economy. For example, many individuals point out that only about 3 percent of the U.S. workforce is on the farm, but they manage to feed the nation and export to the rest of the world. But how did this agricultural productivity come to be? It is because of the tractors and combines and satellite systems and fertilizers and advanced seeds, etc. that came from the genius and productivity of the manufacturing sector.

Similarly, in services -- can you envision an airline without airplanes? Fast food outlets without griddles and freezers? Insurance companies or banks without computers? Certainly not. The manufacturing industry is truly the innovation industry, without which the rest of the economy could not prosper. Manufacturing performs over 60 percent of the nation’s research and development. Additionally, it also **underlies** the technological ability of the United States to maintain its national security and its global leadership.

Manufacturing makes a disproportionately large contribution to productivity, more than twice the rate of the overall economy, and pays wages that are about 20 percent higher than in other sectors. But its most fundamental importance lies in the fact that a healthy manufacturing sector truly underlies the entire U.S. standard of living -- because it is the principal way by which the United States pays its way in the world.

Manufacturing accounts for over 80 percent of all U.S. exports of goods. America’s farmers will export somewhat over $50 billion this year, but America’s manufacturers export almost that much every month! Even when services are included, manufacturing accounts for two-thirds of all U.S. exports of goods and services.3

If the U.S. manufacturing sector were to become seriously impaired, what combination of farm products together with architectural, travel, insurance, engineering and other services could make up for the missing two-thirds of our exports represented by manufactures? The answer is “**none**.” What would happen instead is the dollar would collapse, falling precipitously -- not to the reasonable level of 1997, but far below it -- and with this collapse would come high U.S. inflation, a wrenching economic downturn and a collapse in the U.S. standard of living and the U.S. leadership role in the world. That, most basically, is why the United States cannot become a “nation of shopkeepers.”

**The US is key to the global economy.**

**Caploe 9** (David, CEO of the American Centre for Applied Liberal Arts and Humanities in Asia, *Focus still on America to lead global recovery*, April 7, The Strait Times, lexis)

IN THE aftermath of the G-20 summit, most observers seem to have missed perhaps the most crucial statement of the entire event, made by United States President Barack Obama at his pre-conference meeting with British Prime Minister Gordon Brown: 'The world has become accustomed to the US being a voracious consumer market, the engine that drives a lot of economic growth worldwide,' he said. 'If there is going to be renewed growth, it just can't be the US as the engine.' While superficially sensible, this view is deeply problematic. To begin with, it ignores the fact that the global economy has in fact been **'America-centered**' for more than 60 years. Countries - China, Japan, Canada, Brazil, Korea, Mexico and so on - either sell to the US or they sell to countries that sell to the US. This system has generally been advantageous for all concerned. America gained certain historically unprecedented benefits, but the system also enabled participating countries - first in Western Europe and Japan, and later, many in the Third World - to achieve undreamt-of prosperity. At the same time, this **deep inter-connection** between the US and the rest of the world also explains how the collapse of a relatively small sector of the US economy - 'sub-prime' housing, logarithmically exponentialised by Wall Street's ingenious chicanery - has cascaded into the worst global economic crisis since the Great Depression. To put it simply, Mr Obama doesn't seem to understand that there is **no other engine** for the world economy - and hasn't been for the last six decades. If the US does not drive global economic growth, growth is not going to happen. Thus, US policies to deal with the current crisis are critical not just domestically, but also to the entire world. Consequently, it is a matter of global concern that the Obama administration seems to be following Japan's 'model' from the 1990s: allowing major banks to avoid declaring massive losses openly and transparently, and so perpetuating 'zombie' banks - technically alive but in reality dead. As analysts like Nobel laureates Joseph Stiglitz and Paul Krugman have pointed out, the administration's unwillingness to confront US banks is the main reason why they are continuing their increasingly inexplicable credit freeze, thus ravaging the American and global economies. Team Obama seems reluctant to acknowledge the extent to which its policies at home are failing not just there but around the world as well. Which raises the question: If the US can't or won't or doesn't want to be the global economic engine, which country will? The obvious answer is China. But that is unrealistic for three reasons. First, China's economic health is more tied to America's than practically any other country in the world. Indeed, the reason China has so many dollars to invest everywhere - whether in US Treasury bonds or in Africa - is precisely that it has structured its own economy to complement America's. The only way China can serve as the engine of the global economy is if the US starts pulling it first. Second, the US-centred system began at a time when its domestic demand far outstripped that of the rest of the world. The fundamental source of its economic power is its ability to act as the global consumer of last resort. China, however, is a poor country, with low per capita income, even though it will soon pass Japan as the world's second largest economy. There are real possibilities for growth in China's domestic demand. But given its structure as an export-oriented economy, it is doubtful if even a successful Chinese stimulus plan can pull the rest of the world along unless and until China can start selling again to the US on a massive scale. Finally, the key 'system' issue for China - or for the European Union - in thinking about becoming the engine of the world economy - is monetary: What are the implications of having your domestic currency become the global reserve currency? This is an extremely complex issue that the US has struggled with, not always successfully, from 1959 to the present. Without going into detail, it can safely be said that though having the US dollar as the world's medium of exchange has given the US some tremendous advantages, it has also created huge problems, both for America and the global economic system. The Chinese leadership is certainly familiar with this history. It will try to avoid the yuan becoming an international medium of exchange until it feels much more confident in its ability to handle the manifold currency problems that the US has grappled with for decades. Given all this, the US will remain **the engine** of global economic recovery for the **foreseeable future**, even though other countries must certainly help. This crisis began in the US - and it is going to have to be solved there too.

**Economic decline causes global wars.**

**Kemp 10** (Geoffrey, Director of Regional Strategic Programs at The Nixon Center, served in the White House under Ronald Reagan, special assistant to the president for national security affairs and senior director for Near East and South Asian affairs on the National Security Council Staff, Former Director, Middle East Arms Control Project at the Carnegie Endowment for International Peace, 2010, *The East Moves West: India, China, and Asia’s Growing Presence in the Middle East*, p. 233-4)

The second scenario, called Mayhem and Chaos, is the opposite of the first scenario; everything that can go wrong does go wrong. The world economic situation weakens rather than strengthens, and **India**, **China**, and **Japan** suffer a major reduction in their growth rates, further weakening the global economy. As a result, energy demand falls and the price of fossil fuels plummets, leading to a financial crisis for the energy-producing states, which are forced to cut back dramatically on expansion programs and social welfare. Thanbt in turn leads to **political unrest**: and nurtures different **radical groups**, including, but not limited to, Islamic extremists. The **internal stability** of some countries is challenged, and there are more “failed states.” Most serious is the collapse of the democratic government in **Pakistan** and its takeover by Muslim extremists, who then take possession of a large number of nuclear weapons. The danger of war between **India** and Pakistan increases significantly. **Iran**, always worried about an extremist Pakistan, expands and weaponizes its nuclear program. That further enhances nuclear proliferation in the Middle East, with Saudi Arabia, Turkey, and Egypt joining Israel and Iran as nuclear states. Under these circumstances, the potential for nuclear terrorism increases, and the possibility of a **nuclear terrorist attack** in either the Western world or in the oil-producing states may lead to a further devastating **collapse** of the world economic market, with a tsunami-like impact on stability. In this scenario, major disruptions can be expected, with dire consequences for two-thirds of the **planet’s population**.

**We have strong statistical support.**

**Royal 10** (Jedidiah, Director of Cooperative Threat Reduction at the U.S. Department of Defense, M.Phil. Candidate at the University of New South Wales, 2010, *Economic Integration, Economic Signalling and the Problem of Economic Crises*, Economics of War and Peace: Economic, Legal and Political Perspectives, Edited by Ben Goldsmith and Jurgen Brauer, Published by Emerald Group Publishing, ISBN 0857240048, p. 213-215)

Less intuitive is how periods of economic decline may increase the likelihood of external conflict. Political science literature has contributed a moderate degree of attention to the impact of economic decline and the security and defence behaviour of interdependent states. Research in this vein has been considered at systemic, dyadic and national levels. Several notable contributions follow.

First, on the systemic level, Pollins (2008) advances Modelski and Thompson's (1996) work on leadership cycle theory, finding that rhythms in the global economy are associated with the rise and fall of a pre-eminent power and the often **bloody transition** from one pre-eminent leader to the next. As such, exogenous shocks such as economic crises could usher in a **redistribution** of relative power (see also Gilpin. 1981) that leads to **uncertainty** about power balances, increasing the risk of **miscalculation** (Feaver, 1995). Alternatively, even a relatively certain redistribution of power could lead to a permissive environment for conflict as a rising power may seek to challenge a declining power (Werner. 1999). Separately, Pollins (1996) also shows that global economic cycles combined with parallel leadership cycles impact the likelihood of conflict among major, medium and small powers, although he suggests that the causes and connections between global economic conditions and security conditions remain unknown.

Second, on a dyadic level, Copeland's (1996, 2000) theory of trade expectations suggests that 'future expectation of trade' is a significant variable in understanding economic conditions and security behaviour of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations. However, if the expectations of future trade decline, particularly for difficult [end page 213] to replace items such as energy resources, the likelihood for conflict increases, as states will be inclined to use force to gain access to those resources. Crises could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states.4

Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write,

The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favour. Moreover, the presence of a recession tends to amplify the extent to which international and external conflicts **self-reinforce** each other. (Blomberg & Hess, 2002. p. 89)

Economic decline has also been linked with an increase in the likelihood of terrorism (Blomberg, Hess, & Weerapana, 2004), which has the capacity to spill across borders and lead to external tensions.

Furthermore, crises generally reduce the popularity of a sitting government. “Diversionary theory" suggests that, when facing unpopularity arising from economic decline, sitting governments have increased incentives to **fabricate external military conflicts** to create a **'rally around the flag**' effect. Wang (1996), DeRouen (1995). and Blomberg, Hess, and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997), Miller (1999), and Kisangani and Pickering (2009) suggest that the tendency towards diversionary tactics are greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak Presidential popularity, are **statistically linked** to an increase in the use of force.

In summary, recent economic scholarship positively correlates economic integration with an increase in the frequency of economic crises, whereas political science scholarship links economic decline with external conflict at systemic, dyadic and national levels.5 This implied connection between integration, crises and armed conflict has not featured prominently in the economic-security debate and deserves more attention.

### 1AC—Adv 2

**Advantage Two --- The Environment**

**Warming is happening now due to anthropogenic causes and still reversible if we act now.**

**Nuccitelli 11** (Dana, Environmental Scientist at a Private Environmental Consulting Firm in the Sacramento – California, Bachelor's Degree in Astrophysics from the University of California at Berkeley, Master's Degree in Physics from the University of California at Davis, Active contributor to Skeptical Science, The Big Picture, Updated 2011, Originally Posted 2010, http://www.skepticalscience.com/big-picture.html)

Oftentimes we get bogged down discussing one of the many pieces of evidence behind man-made global warming, and in the process we can't see the forest from the trees. It's important to every so often take a step back and see how all of those trees comprise the forest as a whole. Skeptical Science provides an invaluable resource for examining each individual piece of climate evidence, so let's make use of these individual pieces to see how they form the big picture.

The Earth is Warming

We know **the planet is warming** from surface temperature stations and satellites measuring the temperature of the Earth's surface and lower atmosphere. We also have various tools, which have measured the warming of the Earth's oceans. Satellites have measured an energy imbalance at the top of the Earth's atmosphere. Glaciers, sea ice, and ice sheets are all receding. Sea levels are rising. Spring is arriving sooner each year. There's simply no doubt - the planet is warming (Figure 1).

Global Warming Continues

And yes, the warming is continuing. The 2000s were hotter than the 1990s, which were hotter than the 1980s, which were hotter than the 1970s. 2010 tied for the hottest year on record. The 12-month running average global temperature broke the record three times in 2010, according to NASA Goddard Institute for Space Studies (GISS) data. Sea levels are still rising, ice is still receding, spring is still coming earlier, there's still a planetary energy imbalance, etc. etc.

Contrary to what some would like us to believe, the planet has not magically stopped warming. Those who argue otherwise are confusing short-term noise with long-term global warming (Figure 2).

Foster and Rahmstorf (2011) showed that when we filter out the short-term effects of the sun, volcanoes, and El Niño cycles, the underlying man-made global warming trend becomes even more clear (Figure 3).

For as much as atmospheric temperatures are rising, the amount of energy being absorbed by the planet is even more striking when one looks into the deep oceans and the change in the global heat content (Figure 4).

Humans are Increasing Atmospheric Greenhouse Gases

The amount of greenhouse gases in the atmosphere - particularly carbon dioxide (CO2) - has been rising steadily over the past 150 years. There are a number of lines of evidence, which clearly demonstrate that this increase is due to human activities, primarily **burning fossil fuels**.

The most direct of evidence involves simple accounting. Humans are currently emitting approximately 30 billion tons of CO2 per year, and the amount in the atmosphere is increasing by about 15 billion tons per year. Our emissions have to go somewhere - half goes into the atmosphere, while the other half is absorbed by the oceans (which is causing another major problem - ocean acidification).

We also know the atmospheric increase is from burning fossil fuels because of the isotopic signature of the carbon in the atmosphere. Carbon comes in three different isotopes, and plants have a preference for the lighter isotopes. So if the fraction of lighter carbon isotopes in the atmosphere is increasing, we know the increase is due to burning plants and fossil fuels, and that is what scientists observe.

The fact that humans are responsible for the increase in atmospheric CO2 is settled science. The evidence is clear-cut.

Human Greenhouse Gases are Causing Global Warming

There is overwhelming evidence that humans are the dominant cause of the recent global warming, mainly due to our greenhouse gas emissions. Based on fundamental physics and math, we can quantify the amount of warming human activity is causing, and verify that we're responsible for essentially all of the global warming over the past 3 decades. The aforementioned Foster and Rahmstorf (2011) found a 0.16°C per decade warming trend since 1979 after filtering out the short-term noise.

In fact we expect human greenhouse gas emissions to cause more warming than we've thus far seen, due to the thermal inertia of the oceans (the time it takes to heat them). Human aerosol emissions are also offsetting a significant amount of the warming by causing global dimming. Huber and Knutti (2011) found that human greenhouse gas emissions have caused 66% more global warming than has been observed since the 1950s, because the cooling effect of human aerosol emissions have offset about 44% of that warming. They found that overall, human effects are responsible for approximately 100% of the observed global warming over the past 60 years (Figure 5).

There are also numerous 'fingerprints' which we would expect to see from an increased greenhouse effect (i.e. more warming at night, at higher latitudes, upper atmosphere cooling) that we have indeed observed (Figure 6).

Climate **models have projected** the ensuing global warming to a high level of accuracy, verifying that we have a good understanding of the fundamental physics behind climate change.

Sometimes people ask "what would it take to falsify the man-made global warming theory?". Well, basically it would require that our fundamental understanding of physics be wrong, because that's what the theory is based on. This fundamental physics has been scrutinized through scientific experiments for decades to centuries.

The Warming will Continue

We also know that if we continue to emit large amounts of greenhouse gases, the planet will continue to warm. We know that the climate sensitivity to a doubling of atmospheric CO2 from the pre-industrial level of 280 parts per million by volume (ppmv) to 560 ppmv (we're currently at 390 ppmv) will cause 2–4.5°C of warming. And we're headed for 560 ppmv in the mid-to-late 21st century if we continue business-as-usual emissions.

The precise sensitivity of the climate to increasing CO2 is still fairly uncertain: 2–4.5°C is a fairly wide range of likely values. However, even if we're lucky and the climate sensitivity is just 2°C for doubled atmospheric CO2, if we continue on our current emissions path, we will commit ourselves to that amount of warming (2°C above pre-industrial levels) within the next 75 years.

The Net Result will be Bad

There will be some positive results of this continued warming. For example, an open Northwest Passage, enhanced growth for some plants and improved agriculture at high latitudes (though this will require use of more fertilizers), etc. However, the negatives will almost certainly outweigh the positives, by a long shot. We're talking decreased biodiversity, water shortages, increasing heat waves (both in frequency and intensity), decreased crop yields due to these impacts, damage to infrastructure, displacement of millions of people, etc.

Arguments to the contrary are superficial

One thing I've found in reading skeptic criticisms of climate science is that they're consistently superficial. For example, the criticisms of James Hansen's 1988 global warming projections never go beyond "he was wrong," when in reality it's important to evaluate what caused the discrepancy between his projections and actual climate changes, and what we can learn from this. And those who argue that "it's the Sun" fail to comprehend that we understand the major mechanisms by which the Sun influences the global climate, and that they cannot explain the current global warming trend. And those who argue "it's just a natural cycle" can never seem to identify exactly which natural cycle can explain the current warming, nor can they explain how our understanding of the fundamental climate physics is wrong.

There are legitimate unresolved questions

Much ado is made out of the expression "the science is settled." The science is settled in terms of knowing that the planet is warming rapidly, and that humans are the dominant cause.

There are certainly unresolved issues. As noted above, there's a big difference between a 2°C and a 4.5°C warming for a doubling of atmospheric CO2, and it's an important question to resolve, because we need to know how fast the planet will warm in order to know how fast we need to reduce our greenhouse gas emissions. There are significant uncertainties in some feedbacks which play into this question. For example, will clouds act as a net positive feedback (by trapping more heat, causing more warming) or negative feedback (by reflecting more sunlight, causing a cooling effect) as the planet continues to warm? And exactly how much global warming is being offset by human aerosol emissions?

These are the sorts of questions we should be debating, and the issues that most climate scientists are investigating. Unfortunately there is a there is a very vocal contingent of people determined to continue arguing the resolved questions for which the science has already been settled. And when climate scientists are forced to respond to the constant propagation of misinformation on these settled issues, it just detracts from our investigation of the legitimate, unresolved, important questions.

Smart Risk Management Means Taking Action

People are usually very conservative when it comes to risk management. Some of us buy fire insurance for our homes when the risk of a house fire is less than 1%, for example. When it comes to important objects like cars and homes, we would rather be **safe than sorry**.

But there is arguably no more important object than the global climate. We rely on the climate for our basic requirements, like having enough accessible food and water. Prudent risk management in this case is clear. The scientific evidence discussed above shows indisputably that there is a risk that we are headed towards very harmful climate change. There are uncertainties as to how harmful the consequences will be, but uncertainty is not a valid reason for inaction. There's very high uncertainty whether I'll ever be in a car accident, but it would be foolish of me not to prepare for that possibility by purchasing auto insurance. Moreover, **uncertainty cuts both ways**, and it's just as likely that the consequences will be worse than we expect as it is that the consequences won't be very bad.

We Can Solve the Problem

The good news is that we have the tools we need to mitigate the risk posed by climate change. A number of plans have been put forth to achieve the necessary greenhouse gas emissions cuts (i.e. here and here and here). We already have all the technology we need.

Opponents often argue that mitigating global warming will hurt the economy, but the opposite is true. Those who argue that reducing emissions will be too expensive ignore the costs of climate change - economic studies have consistently shown that mitigation is several times less costly than trying to adapt to climate change (Figure 7).

The Big Picture

The big picture is that we know the planet is warming, humans are causing it, there is a substantial risk to continuing on our current path, but we don't know exactly how large the risk is. However, uncertainty regarding the magnitude of the risk is not an excuse to ignore it. We also know that if we continue on a business-as-usual path, the risk of catastrophic consequences is very high. In fact, the larger the uncertainty, the greater the potential for the exceptionally high-risk scenario to become reality. We need to continue to decrease the uncertainty, but it's also critical to acknowledge what we know and what questions have been resolved, and that taking no action is not an option. The good news is that we know how to solve the problem, and that doing so will minimize the impact not only on the climate, but also on the economy.

The bottom line is that from every perspective - scientific, risk management, economic, etc. - there is no reason not to immediately take serious action to mitigate climate change, and failing to do so would be exceptionally foolish.

**Warming causes extinction.**

**Brandenberg 99** (John & Monica Paxson, Visiting Prof. Researcher @ Florida Space Institute, Physicist Ph.D., Science Writer, Dead Mars Dying Earth, Pg 232-233)

The ozone hole expands, driven by a monstrous synergy with global warming that puts more catalytic **ice crystals** into the stratosphere, but this affects the far north and south and not the major nations’ heartlands. The **seas rise**, the **tropics roast** but the media networks no longer cover it. The **Amazon** rainforest becomes the Amazon desert. **Oxygen levels** fall, but profits rise for those who can provide it in bottles. An equatorial high-pressure zone forms, forcing **drought** in central Africa and Brazil, the **Nile dries up** and the monsoons fail. Then inevitably, at some unlucky point in time, a major unexpected event occurs—a major volcanic eruption, a sudden and dramatic shift in ocean circulation or a large asteroid impact (those who think freakish accidents do not occur have paid little attention to life or Mars), or a **nuclear war** that starts between **Pakistan** and **India** and escalates to involve **China** and **Russia** . . . Suddenly the gradual climb in global temperatures goes on a mad excursion as the oceans warm and release large amounts of dissolved carbon dioxide from their lower depths into the atmosphere. Oxygen levels go down precipitously as oxygen replaces lost oceanic carbon dioxide. Asthma cases double and then double again. Now a third of the world fears breathing. As the oceans dump carbon dioxide, the greenhouse effect increases, which further warms the oceans, causing them to dump even more carbon. Because of the heat, **plants die** and burn in **enormous fires**, which release more carbon dioxide, and the **oceans evaporate**, adding more water vapor to the greenhouse. Soon, we are in what is termed a runaway greenhouse effect, as happened to Venus eons ago. The last two surviving scientists inevitably argue, one telling the other, “See! I told you the missing sink was in the ocean!” Earth, as we know it, dies. After this Venusian excursion in temperatures, the **oxygen disappears** into the soil, the **oceans evaporate** and are lost and the dead Earth loses its ozone layer completely. Earth is too far from the Sun for it to be the second Venus for long. Its atmosphere is slowly lost—as is its water—because of ultraviolet bombardment breaking up all the molecules apart from carbon dioxide. As the atmosphere becomes thin, the Earth becomes colder. For a short while temperatures are nearly normal, but the **ultraviolet** sears any life that tries to make a comeback. The carbon dioxide thins out to form a thin veneer with a few wispy clouds and dust devils. Earth becomes the second Mars—red, desolate, with perhaps a few hardy microbes surviving.

**Air pollution causes extinction.**

**Driesen 3** (David, Associate Professor at Syracuse University College of Law, J.D. Yale Law School, Stumbling Toward Sustainability, 1989,Fall/Spring, 10 Buff. Envt'l. L.J. 25)

Air pollution can **make life unsustainable** by harming the ecosystem upon which **all life depends** and harming the health of both future and present generations.

The Rio Declaration articulates six key principles that are relevant to air pollution. These principles can also be understood as goals, because they describe a state of affairs that is worth achieving. Agenda 21, in turn, states a program of action for realizing those goals. Between them, they aid understanding of sustainable development's meaning for air quality. The first principle is that "human beings . . . are entitled to a healthy and productive life in harmony with nature", because they are "at the center of concerns for sustainable development." While the Rio Declaration refers to human health, its reference to life "in harmony with nature" also reflects a concern about the natural environment.

Since air pollution damages both human health and the environment, air quality implicates both of these concerns. Lead, carbon monoxide, particulate, tropospheric ozone, sulfur dioxide, and nitrogen oxides have historically threatened urban air quality in the United States. This review will focus upon tropospheric ozone, particulate, and carbon monoxide, because these pollutants present the most widespread of the remaining urban air problems, and did so at the time of the earth summit. 6 Tropospheric ozone refers to ozone fairly near to the ground, as opposed to stratospheric ozone high in the atmosphere. The stratospheric ozone layer protects human health and the environment from ultraviolet radiation, and its depletion causes problems. By contrast, tropospheric ozone damages human health and the environment. 8 In the United States, the pollutants causing "urban" air quality problems also affect human health and the environment well beyond urban boundaries. Yet, the health problems these pollutants present remain most acute in urban and suburban areas.

Ozone, carbon monoxide, and particulate cause very serious public health problems

that have been well recognized for a long time. Ozone forms in the atmosphere from a reaction between volatile organic compounds, nitrogen oxides, and sunlight. Volatile organic compounds include a large number of hazardous air pollutants. Nitrogen oxides, as discussed below, also play a role in acidifying ecosystems. Ozone damages lung tissue. It plays a role in triggering asthma attacks, sending thousands to the hospital every summer. It effects young children and people engaged in heavy exercise especially severely. Particulate pollution, or soot, consists of combinations of a wide variety of pollutants. Nitrogen oxide and sulfur dioxide contribute to formation of fine particulate, which is associated with the most serious health problems. 13 Studies link particulate to tens of thousands of annual premature deaths in the United States. Like ozone it contributes to respiratory illness, but it also seems to play a [\*29] role in triggering heart attacks among the elderly. The data suggest that fine particulate, which EPA did not regulate explicitly until recently, plays a major role in these problems. 16 Health researchers have associated carbon monoxide with various types of neurological symptoms, such as visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, and difficulty in performing complex tasks. The same pollution problems causing current urban health problems also contribute to long lasting ecological problems. Ozone harms crops and trees. These harms affect ecosystems and future generations. Similarly, particulate precursors, including nitrogen oxide and sulfur dioxide, contribute to acid rain, which is not easily reversible. To address these problems, Agenda 21 recommends the adoption of national programs to reduce health risks from air pollution, including urban air pollution. These programs are to include development of "appropriate pollution control technology . . . for the introduction of environmentally sound production processes." It calls for this development "on the basis of risk assessment and epidemiological research." It also recommends development of "air pollution control capacities in large cities emphasizing enforcement programs using monitoring networks as appropriate." A second principle, the precautionary principle, provides support for the first. As stated in the Rio Declaration, the precautionary principle means that "lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" when "there are threats of serious or **irreversible damage**." Thus, lack of **complete certainty** about the adverse environmental and human health effects of air pollutants does not, by itself, provide a reason for tolerating them. Put differently, governments need to address air pollution on a precautionary basis to ensure that human’s can life a healthy and productive life. 8

**Evaluate these impacts through the lens of precaution**.

**Pittock 10** (Barrie, Led the Climate Impact Group in CSIRO until his retirement in 1999. He contributed to or was the lead author of all four major reports of the Intergovernmental Panel on Climate Change. He was awarded a Public Service Medal in 1999 and is CSIRO Honorary Fellow, Climate Change: The Science, Impacts, and Solutions, 2010, pg. 326)

It is absolutely crucial that options for reducing greenhouse gas emissions be pursued with a real sense of urgency. **Every extra tonne** of carbon dioxide placed into the atmosphere increases the very real risk of dangerous climate change, and nobody will escape the direct or indirect consequences. We are in danger of inadvertently **tripping the 'on' switch** to disaster, with an inevitably long delay before it can be turned off again. What is done now that enhances climate change cannot be easily undone, so we should err on the side of caution. But it is not all doom and gloom: we can save the day. As we have seen earlier in this book, the technology already exists to rapidly reduce emissions via large investments in energy efficiency (which saves money) and renewable base-load power (which will rapidly come down in price as it is scaled up). Supplemented later this century by large-scale carbon capture and sequestration and (if necessary) by safe nuclear power, the peak in greenhouse gas concentrations can be minimized and then brought down. We need to reduce carbon emissions, and **we need to do it fast**. Although we are facing an emergency, with an appropriate allocation of ingenuity and resources, together we can do it. We owe that, at least, to our children.

**Wind power trades off with dirty fuels --- it prevents climate change and particle pollution.**

**Sovacool 11** (Benjamin K., Assistant Professor at the Lee Kuan Yew School of Public Policy, part of the National University of Singapore. He is also a Research Fellow in the Energy Governance Program at the Centre on Asia and Globalization. He has worked in advisory and research capacities at the U.S. National Science Foundation’s Electric Power Networks Efficiency and Security Program, Virginia Tech Consortium on Energy Restructuring, Virginia Center for Coal and Energy Research, New York State Energy Research and Development Authority, Oak Ridge National Laboratory, Semiconductor Materials and Equipment International, and U.S. Department of Energy’s Climate Change Technology Program. He is the co-editor with Marilyn A. Brown of Energy and American Society: Thirteen Myths (2007) and the author of The Dirty Energy Dilemma: What’s Blocking Clean Power in the United States (2008). He is also a frequent contributor to such journals as Electricity Journal, Energy & Environment, and Energy Policy, The Hidden Factors That Make Wind Energy Cheaper than Natural Gas in the United States, The Electricity Journal, Volume 24, Issue 9, November 2011, Pages 84–95)

I. Introduction

With the Fukushima nuclear accident in Japan still lingering in the public memory, the environmental costs of coal-fired power continuing to mount, and the expense of oil-fired electricity generation maintaining cost-prohibitive levels, the true contest for new electricity facilities in the United States appears to be between wind energy and natural gas.

Total installed capacity for wind energy throughout the country exceeded 40,000 MW at the end of 2010, an increase of 15 percent over the year before, and state renewable portfolio standards continue to drive strong investment. Wind power contributed 42 percent of electric generating capacity additions in 2009, and according to the most recent data available from the U.S. Department of Energy, at the end of 2010 there were 258 GW of planned wind power capacity – more than six times current installed wind power capacity – within the transmission interconnection queues administered by independent system operators, regional transmission organizations, and electric utilities. These additions constituted more than 50 percent of all planned generating capacity, more than twice as much as the next largest source, natural gas.1 Researchers at Lawrence Berkeley National Laboratory also surveyed the actual production costs from 128 separate wind projects in the United States totaling 8,303 MW in 2007 and found they tended to produce electricity for less than 5 cents per kWh, making them more attractive than natural gas in many markets.2

The U.S. Energy Information Administration (EIA) reports, however, that natural gas use is on the rise, with electric utility consumption outweighing industrial demand for the first time ever in 2007.3 The agency states that the levelized cost of electricity in 2010 for natural-gas-fired power plants, excluding externalities, was competitive with onshore and offshore wind turbines.4 Natural gas is widely viewed as the “cleanest fossil fuel,” the United States has plentiful conventional reserves, and it can be stored in underground formations.5 Moreover, natural gas can be transported relatively easily through existing pipelines and requires no new transmission infrastructure to reach commercial markets.

Furthermore, improvements in technology have recently enabled the cheap production of unconventional forms of natural gas, with a blossoming “shale gas boom” underway in Texas and the Midwest.6 The term “shale gas” refers to natural gas extracted from gas shales, porous rocks that hold gas in pockets. Shale gas is most commonly captured by hydraulic fracturing, or fracking, a process which shatters rocks by injecting water, sand, and chemicals to release the gas.7 The EIA estimates that “technically recoverable” shale gas reserves could meet domestic natural gas consumption in the United States for more than 30 years,8 conclusions backed by independent studies.9 A few years ago experts were warning that the United States could become a net natural gas importer; with shale gas, the country in 2009 became the largest gas producer in the world.10 The Worldwatch Institute, an environmental nongovernmental organization, even concluded that “the rapid development of shale gas resources in the past few years has already dramatically affected U.S. energy markets—lowering energy prices and carbon dioxide emissions.”11

With uncertainty around natural gas and power prices as the economy recovers, wind's long-term price stability is even more valued.

Such close competition between wind and natural gas has led to some contradictory and confusing statements from energy experts. Taking just two examples, Elizabeth Salerno, director of industry data and analysis for the American Wind Energy Association, commented earlier this year that “wind's costs have dropped over the past two years, with power purchase agreements being signed in the range of 5 to 6 cents per kilowatt-hour recently. With uncertainty around natural gas and power prices as the economy recovers, wind's long-term price stability is even more valued. We expect that utilities will move to lock in more wind contracts, given the cost-competitive nature of wind in today's market.”12 Conversely, Sherle Schwenninger, director of economic growth programs at the New America Foundation, stated the opposite this summer when he said that “it makes no economic sense … to subsidize the installation of imported wind turbines when natural-gas-fired generators can produce an equivalent amount of energy for one-third to one-half the cost.”13

Which side is right? In an attempt to contribute to the debate, this study looks at a broader set of costs and benefits associated with natural gas and wind energy including human health, wildlife, and climate change implications. We compare two sources of energy at two locations: natural-gas-fired peaking plants run by Pacific Gas & Electric (PG&E) in California with the wind energy from 580 MW Altamont Pass, and combined cycle natural-gas-fired power plants operated by Idaho Power with the 12 MW Sawtooth wind farm.

As discussed below, we find that negative externalities, associated with air-pollution-related health effects and climate change, add about 2–12 cents per kWh for natural-gas-fired generation, depending on the location of the wind farms and other factors. These readily quantifiable negative externalities, while not a full accounting of all possible externalities, suggest that the cost of natural-gas-fired electricity exceeds that of wind power.

II. Human Health and Air Pollution

A significant benefit of wind power compared to natural gas is the almost complete elimination of fossil-fuel-related emissions. Natural gas combustion directly emits fine particulate matter less than 2.5 microns in diameter (PM2.5) as well as noxious gases such as **sulfur dioxide** (SO2), **nitrogen oxides** (NOx), **volatile organic carbons** (VOCs), and **ammonia** (NH3) that contribute to secondary PM2.5 and ozone formation. Both PM2.5 and ozone have serious health consequences. PM2.5 is more harmful and it is easier to model, so the present analysis focuses on PM2.5, and simply notes that our estimate of the air-pollution-related health impacts of natural gas is an underestimate to the extent that it does not include ozone.

To estimate the PM2.5-related health benefits of wind power, we relied on the Co-Benefits Risk Assessment Tool (COBRA), which is a screening instrument developed by Abt Associates for the U.S. Environmental Protection Agency to support assessments of the human health and economic benefits of air pollution reductions.14 COBRA essentially has four components.

First, it has a detailed, county-level emission inventory that EPA developed for its analysis of the Clean Air Interstate Rule.15 The inventory includes direct emissions of PM2.5, as well as precursors associated with the formation of PM2.5 in the atmosphere: NOx, SO2, VOC, and NH3.

Second, COBRA has a relatively simple, reduced-form air quality model, to estimate the impact of a change in natural gas combustion emissions on ambient PM2.5. The change in PM2.5 can then be used to estimate health impacts.

Third, COBRA has a suite of mortality and morbidity health impact functions that the EPA has used in recent regulatory benefit assessments.16 The health effects estimated include premature mortality, hospital admissions, emergency room visits, acute bronchitis, respiratory symptoms, asthma exacerbation, work loss days, and minor restricted activity days.

Finally, COBRA has valuation functions, which place a dollar value per estimated case of an adverse health effect. COBRA multiplies the number of adverse health effects with the appropriate dollar value per case to estimate the overall economic cost of adverse health impacts.

Using COBRA, we first estimated the reduction in air pollutant emissions due to wind power from the Sawtooth and Altamont wind farms compared to natural gas. This involved estimating the megawatt-hours (MWh) of power generated at both facilities, and then multiplying the estimated MWh by the estimated avoided emissions per MWh. Then, an adjustment was made to account for a small loss in efficiency due to the intermittent nature of wind power.17

To estimate the MWh of power production for the period 1987 to 2006 for Altamont, we relied on historical calculations provided by Altamont Winds Incorporated, which operates about 20 percent of the generating capacity at Altamont Pass. We presume that its operating experience is generally representative of the other companies operating turbines in Altamont Pass, as most of these companies rely on the same type of turbines. For the forecasted production period of 2012–2031, we estimate that there will be 580 MW of capacity, running at an average capacity factor of 38 percent. This translates into 1,931 GWh of electricity production annually. For the forecasted production period of 2012–2031 for Sawtooth, we assume that there will be 22.4 MW of capacity, running at a somewhat lower average capacity factor of 33 percent, due to differences in the local environment. This translates into 65 GWh of electricity production annually.

To estimate the emissions per MWh, we used facility-level SO2 and NOx emissions data from the EPA Clean Air Markets Division18, and PM2.5 emissions data from the California Air Resources Board19 and the Idaho Department of Environmental Quality.20Table 1 summarizes the estimated emissions reduction; further details can be found in two reports by McCubbin and Sovacool.21

We include in our analysis estimated emissions of PM2.5, SO2, and NOx associated with the combustion of natural gas, and we do not attempt to estimate the impact of emissions associated with the production and distribution of natural gas. Combustion-related emissions of NH3 and VOC, which have some effect on ambient PM2.5, are relatively minor, so we do not include them. In addition, while upstream emissions, particularly of NOx, are perhaps nontrivial,22 we do not include them, as it would require developing emission factors and estimating where the emissions occur, steps which are beyond the scope of the present analysis. As a result, our estimate of the impact on ambient PM2.5 will tend to be conservative.

Given an emissions reduction associated with using power generated at the Altamont and Sawtooth wind farms, as opposed to natural gas facilities, COBRA uses it reduced form air quality model to estimate the change in ambient PM2.5 levels in the continental U.S. In turn, COBRA can then use the change in ambient PM2.5 to estimate the impact on premature mortality and a variety of morbidity endpoints.

To estimate premature deaths, COBRA relies on epidemiological evidence from Pope et al.23, which is quite conservative in comparison to the results from the expert elicitation conducted for EPA.24 We also use a more recent study by Laden et al.25, which found a much larger impact of PM2.5 on mortality, one toward the upper end of the range of results from the expert elicitation.26 To estimate premature mortality in this analysis, the Pope et al. result is used in the low-impact scenario and Laden et al. is used in the high-impact scenario.

In addition to premature mortality, a variety of morbidity endpoints, including non-fatal heart attacks, hospital admissions, and asthma attacks, are estimated as well. Table 2 presents the estimated number of PM2.5-related cases of adverse health impacts. Finally, to estimate the economic benefit of the estimated change in health incidence, the number of adverse cases of a specific type of effect (e.g., mortality) is multiplied by its associated unit value and then adjusted for the estimated change in income over time and when the deaths are estimated to occur. Table 3 presents the estimated external cost per kWh of using natural gas in place of wind energy.

III. Impoverished Avian Wildlife

Unlike wind energy, the lifecycle of natural gas also involves deleterious impacts on **wildlife**. The production and extraction of natural gas, which is itself toxic, involves bringing large quantities of rock fragments, called “cuttings,” to the surface, and these cuttings are coated with drilling fluids, called “drilling muds,” which operators use to lubricate drill bits and stabilize pressure within oil and gas wells. The quantity of toxic cuttings and mud released for each facility is gargantuan, ranging between 60,000 and 300,000 gallons per day. In addition to cuttings and drilling muds, vast quantities of water contaminated with suspended and dissolved solids are also brought to the surface, creating what geologists refer to as “produced water.” The average offshore oil and gas platform in the United States releases about 400,000 gallons of produced water back into the ocean or sea every day.27 Produced water contains **lead**, **zinc**, **mercury**, **benzene**, and **toluene**, making it highly toxic and requiring operators to often treat it with chemicals, increasing its **salinity** and making it fatal to many types of **plants**, before releasing it into the environment

The U.S. Geological Survey (USGS) estimated that there are more than 2 million oil and natural gas wells in the continental United States. But the most intense areas of oil and gas production are off the shores of the Gulf of Mexico and along the northern coast of Alaska. Offshore natural gas exploration and production in the Gulf of Mexico exposes aquatic and marine wildlife to chronic, low-level releases of many toxic chemicals through the discharge and seafloor accumulation of drilling muds and cuttings, as well as the continual release of hydrocarbons around production platforms.28 Drilling operations there generate massive amounts of polluted water (an average of 180,000 gallons per well every year), releasing toxic metals including mercury, lead, and cadmium into the local environment.29 The Natural Resources Defense Council also noted that the onshore infrastructure required to sustain oil and natural gas processing in the United States has destroyed more coastal **wetlands** and **salt marsh** than can be found in the total area stretching from New Jersey through Maine, and that estimate was made before the Deepwater Horizon disaster.30

In addition, the fracking of shale gas produces liquid wastes that can contaminate surface and drinking water.31 The Worldwatch Institute reports that:

The environmental risks associated with the development of shale gas are similar to those associated with conventional onshore gas, including gas migration and groundwater contamination due to faulty well construction, blowouts, and above-ground leaks and spill of waste water and chemicals used during drilling and hydraulic fracturing.32

Another study cautioned that “residents living near shale gas drilling complain of headaches, diarrhea, nosebleeds, dizziness, blackouts, muscle spasms, and other problems,”33 implying that shale gas production, too, has negative impacts on the local environment.

In their review of impacts of power generation on wildlife, EBF34 noted that toxic air emissions have been associated with mortality, injury, and behavioral changes in wildlife. Olsgard et al.35 report that the immune system in kestrels was adversely affected by benzene and toluene exposure, which are common pollutants associated with natural gas extraction. Brown et al.36 report that ambient particulate matter has harmed **birds** in a variety of environments, with “significant pathology after only a short duration of exposure,” giving examples of kiwis foraging within loose dust and sand, birds living in or near desert like conditions, birds exposed to volcanic ash, and poultry exposed to aerosols in crowded production houses. Canaries were used for many years in mines to test for carbon monoxide, as they are exquisitely sensitive to certain pollutants.

To generate a preliminary estimate of the impact of ambient PM2.5 on birds, we use the relatively conservative study by Pope et al.37 as our high impact scenario estimate, and in the low-impact scenario we assume half of the estimated coefficient from the Pope et al. study. At Altamont we estimate 1,200–8,400 avoided bird deaths in 1987–2006 and 1,300–10,500 in 2012–2031, while at Sawtooth we estimate 50–350 avoided bird deaths in 2012–2031.

IV. Climate Change

Natural gas power plants contribute to climate change by emitting significant amounts of **methane** during the production process. Natural gas, when not separated from oil deposits, is often burned off at the well site, flared (combusted into carbon dioxide and water vapor), or vented directly into the atmosphere. Five percent of world natural gas production—or 150 billion cubic meters of natural gas, more than 2 billion tons of carbon dioxide equivalent (CO2-e)—is lost to flaring and venting each year, making the gas industry responsible for roughly 10 percent of annual global methane emissions.38

Methane is also a greenhouse gas 21 to **23 times more potent** than carbon dioxide on a 100-year timeframe, and its half-life is only 12 years, meaning its instantaneous impact is much larger on the climate system. Methane is already the second-largest contributor to anthropogenic greenhouse gas emissions after carbon dioxide, accounting for 16 percent of the total on a CO2-e basis.39 Researchers at the International Association of Oil and Gas Producers and the Society of Petroleum Engineers have calculated that the global average emission ratio for gas production is about 130 to 140 tons of CO2-e for every thousand tons of production—more than any other electricity fuel besides oil and coal.40

New evidence has surfaced that the lifecycle of gas is more carbon-intensive than previously thought. This refers to not just the gas produced or used in Idaho and California, but its entire lifecycle.41 Natural gas must be extracted from wells and processing plants before it enters the transmission system in the United States which includes storage systems like aquifers and salt caverns.

Previous estimates of the carbon footprint of gas did not account for losses within this system. Taking into account new information regarding methane leaks from loose pipe fittings and methane vented from gas wells, the U.S. Environmental Protection Agency doubled its previous estimate of the carbon footprint of natural gas. When included, these losses make gas as little as 25 percent cleaner than coal from a carbon standpoint.42

In addition, the EIA notes that natural gas storage operators must “boil off” significant quantities of natural gas every day to maintain adequate pressure—meaning that approximately 0.25 to 0.50 percent of their inventory is lost every day due to vaporization.43 One report from the Lawrence Berkeley National Laboratory noted that leaks in natural gas storage facilities can occur due to improper well design, construction, maintenance, and operation.44 The report cautioned that leakage from natural gas storage structures can be especially hazardous when they cause natural gas to migrate into drinking water aquifers or escape to the surface, creating a “significant safety risk.”

Natural gas storage facilities, in addition to significantly adding to the cost of natural gas infrastructure, are also inefficient and susceptible to serious accidents that can release methane and pollute the air and water of local communities. In January 2001, hundreds of explosions rocked the Yaggy field—a natural gas salt formation storage site in Hutchinson, Kan.—when natural gas escaped from one of the storage wells and erupted into a seven-mile wall of fire (burning an estimated 143 million cubic feet of natural gas). Cleanup for the disaster necessitated the construction of 57 new venting wells extending a distance of more than nine miles.45

Overpressurization (needed to enlarge gas bubbles and obtain higher delivery rates) is another main cause of leakage, as many underground natural gas storage projects tend to be operated at pressures exceeding their original designs. Such leaks can become excessively costly: the Gulf South Pipeline Company's Magnolia facility, a $234 million salt-cavern storage system, opened in 2003 only to permanently close a few months later after a well collapsed.46

Pipelines are prone to catastrophic failure, which can release methane into the atmosphere as well. Faulty joints connecting pipeline components, malfunctioning valves, operator error, and corrosion induce frequent leaks and ruptures. Looking back from 1907 to 2007, natural gas pipelines are the type of energy infrastructure most frequent to fail, accounting for 33 percent of all major energy accidents worldwide.47 The U.S. Department of Transportation has noted that gas pipelines fail so often that they expect 2,241 major accidents and an additional 16,000 spills every 10 years.48

Greater reliance on shale gas would also significantly increase the carbon footprint of natural gas power plants. Nature cautions that 0.6 to 3.2 percent of the methane in shale gas can escape directly, and that on a 20-year timeframe methane is 70 times more powerful at heating the atmosphere.49 Other studies have noted that 3.6 to 7.9 percent of methane from shale gas production escapes to the atmosphere through venting and leaks, which make methane emissions from shale gas between 30 percent more and as much as twice as great compared to conventional natural gas.50

Although the natural gas industry has fiercely contested their findings,51 these studies have noted that fugitive methane emissions escape during the completion of wells, especially the drilling stage of new reserves. Venting and equipment leaks of methane are common, too, with the typical well having 55 to 150 different connections to equipment including heaters, meters, dehydrators, and compressors, as well as vapor recovery systems that can all fail and induce leakage. Processing, where hydrocarbons and impurities such as sulfur are removed, is energy and carbon intensive, and shale gas needs more extensively processed to make it ready for existing pipelines.

Lastly, greater reliance on liquefied natural gas (LNG) imports with greater travel times and distances will also raise the carbon footprint of natural gas. LNG has three significant parts of its lifecycle that make it more carbon-intensive, and less efficient, than ordinary gas:

•The liquefaction phase is needed to cool and pressurize natural gas into LNG for transport, usually via ocean tanker;

•The LNG tankers themselves operate on oil and diesel and travel long distances;

•Regasification must occur when those tankers reach their destinations and offload the LNG so it can enter the US transmission system.

Though for much of the last decade 75 percent of LNG imported to the United States came from nearby Trinidad and Tobago, the coming decade will see more LNG from Russia, the Middle East, and Southeast Asia.52 These longer transport times equate to higher affiliated emissions. John Hritcko, the vice president for Strategy and Development for Shell U.S. Gas & Power Company, recently estimated that by 2025, the United States is expected to import the equivalent of today's global LNG trade just to satisfy its own domestic demand.53 Greenpeace recently concluded that the energy-intensive fuel cycle for LNG exacts an energy penalty of 18 to 22 percent—contributing an additional 11 to 18 percent in CO2 emissions, compared to the same amount of non-liquefied natural gas.54

Thankfully, natural gas greenhouse gas emissions are at least partially offset by cleaner forms of electricity generation such as wind power. For our comparison in this study, avoided GHG emissions are calculated as the difference between emissions from natural-gas-fired power and wind energy across resource extraction, fuel transportation, facility construction, power generation, transmission and delivery, and decommissioning. For natural-gas-fired power, the stage with the most GHG emissions is power generation. Other stages, particularly resource extraction and fuel transportation, also contribute GHGs.

The emissions associated with wind power are quite low and are associated with such activities as building the wind energy farm, maintenance, and eventual decommissioning. Lifecycle analyses by Weisser55 and Hondo56 both report cumulative CO2-e emissions across all lifecycle stages of wind power ranging between 10 and 30 g-CO2-e per kWh. In contrast, they report that cumulative lifecycle emissions from natural-gas-powered electricity can exceed 500 g-CO2-e per kWh.

To estimate CO2 emissions, we used facility-level data on CO2 emissions and megawatts generated from the EPA's Clean Air Markets Division.57 For the period 2012–2031 for both wind farms, there will likely be decreases in CO2 emissions due to improved natural gas technology and strong regulatory pressures, so it is assumed that emissions would be somewhat lower relative to 2006. We assume a loss of 1.4 percent of CH4 in the low-impact scenario, and a loss of 5.0 percent is assumed in the high-impact scenario.

Taking into account a GWP of 33, this translates into 219 lbs CO2-e/MWh in the low-impact scenario and 513 lbs CO2-e/MWh in the high-impact scenario. In addition, calculating upstream emissions associated with the production and distribution of natural gas, Meier et al.58 estimate 3.4 metric tons of CO2-e emissions per GHh, or about 7 lbs CO2-e/MWh, are emitted during plant construction, maintenance, and decommissioning. Finally, to account for wind power's lifecycle emissions, an estimated 20 g-CO2-e per kWh (44 lbs/MWh), based on work by Weisser59 and Hondo60, is subtracted across all years.

To value CO2-e emissions, we use estimates of the damage per ton of CO2, developed by the U.S. federal government in 2010 for use in cost-benefit analysis of federal regulations.61 As noted by Kopp and Mignone62, the estimates rely upon the results from three integrated assessment models examining five socio-economic scenarios and three fixed discount rates (5 percent, 3 percent, and 2.5 percent). The estimated benefits of these avoided emissions from Altamont and Sawtooth wind power generation are presented in Table 4.

In addition to valuing the CO2-e emissions, we used the work of Sovacool63 to develop a preliminary estimate of the climate change impact on bird extinctions in the United States. Assuming that natural gas has one-third (lower bound) to one-half (upper bound) of the impact of Sovacool's estimate of 4.98 deaths per GWh for “fossil fuels,” which is a mixture of coal-, oil- and natural gas-fired electricity production, we estimate that wind power from Altamont avoids 32,000–49,000 avian deaths due to reduced emissions in 1987–2006 and 62,000–93,000 in 2012–2031. At Sawtooth, we estimate 2,100–3,200 avoided bird deaths due to reduced emissions in 2012–2031.

V. Conclusion

Perhaps surprisingly, both wind farms examined have immense environmental and economic benefits that may exceed the capital costs of the wind farms themselves, externalities summarized in Table 5. The turbines at Altamont Pass have a replacement cost of about $900 million,64 and avoid anywhere from $300 million to $3.6 billion in human health and climate related externalities. Similarly, the turbines at Sawtooth have a replacement cost of about $35 million, and avoid $20 million to $110 million of human health and climate-related externalities. Translating these negative externalities into a cost per kWh of electricity, we find that the price of natural gas rises from about 9.6 cents per kWh to 11.7–20.5 cents per kWh, with a best estimate of about 15 cents per kWh. This is more than the estimated cost associated with onshore wind power of about 10.95 cents per kWh.65

Three sobering conclusions arise for readers of this Journal and those concerned about American energy policy.

First, externalities matter, perhaps much more than we commonly wish to acknowledge. Looking at only three in this study – human health, avian deaths, and climate change – dramatically changes the game in how we view both wind energy and natural gas. Society still pays for the debilitating externalities from natural gas even though they are not reflected in our electricity or energy bills. A significantly greater number of human deaths, hospital admissions, insurance damages, degraded cities, and blighted ecosystems come from greater reliance on natural-gas-fired generation. The difference between price and cost is a reminder that, sooner or later, someone will pay (although this “someone” is often in the future and not the person imposing the cost).

Second, there is good reason to suppose that the calculations presented in this study are **conservative**, and **underestimate** both the damage from natural gas and the benefits from wind energy.

Power plants in California operate under more stringent environmental regulations than most facilities around the world, meaning the benefits of wind energy are likely greater in other regions. The estimated impact on ambient PM2.5 is quite low, as we did not include upstream emissions associated with the production and distribution of natural gas; moreover, we assumed that premature mortality occurs with a conservative 20-year lag, when work by Schwartz et al. suggests that most deaths occur within the first two or three years.66 Finally, we haven’t systematically explored negative externalities associated with natural gas for vertebrate wildlife and fish, nor have we included the adverse effects caused by ozone to human health, crops, and forests.

Third, the fact that most people believe natural gas is cheaper than wind energy, and therefore a more desirable option for the U.S. electricity sector, shows just how far we need to go at educating policymakers and altering attitudes. Simply put, the misalignment of natural gas's cost with its true price means we all continue to make suboptimal and inefficient decisions about new power plants. The negative externalities associated with the lifecycle of natural gas have become normalized and accepted so that utility executives and consumers have learned to tolerate them. Making them visible again, as we have tried to do with our study, is an important first step toward devising ways that actually start saving lives, money, and wildlife.

**The most recent rigorous studies point to the necessity and sufficiency of wind power.**

**Goggin 12** (Michael, Manager of Transmission Policy at the American Wind Energy Association, Previously consulted for two environmental advocacy groups and a consulting firm supporting the U.S. Department of Energy’s renewable energy programs, Holds an undergraduate degree with honors from Harvard University, Fact check: Coverage of Argonne wind and emissions study flawed, June 2006, http://www.awea.org/blog/index.cfm? customel\_dataPageID\_1699=16631)

Other analyses using more **accurate assumptions** and more **reliable sources** have found that wind’s emissions savings are as large or larger than expected. A recent analysis using **real-world data** derived from EPA emission monitors found that in an **absolute worst case**, wind energy achieves 98.3% of the expected carbon dioxide emissions savings, and 103.3% of the expected nitrogen oxide emissions savings. An ongoing phase of that analysis, due to be completed within the next several months, is likely to show that wind’s net emissions savings are **even larger** than expected. This result occurs because wind energy tends to disproportionately displace dirtier and less flexible coal generation instead of more flexible natural gas generation, so any slight decrease in power plant efficiency is more than offset by this additional emissions savings. This result was also found in the Argonne analysis, which noted that “…increasing wind generation leads to a shift in dispatch from coal toward natural gas,” though those emissions savings were masked by the larger impact of the incorrect assumption that wind energy would displace nuclear generation. - Real-world data confirms that states that have added significant amounts of wind energy, such as Illinois, have seen fossil fuel use and emissions decline by as much as or more than expected. Department of Energy data for Colorado show that as wind energy jumped from providing 2.5% of the state’s electricity in 2007 to 6.1% of the state’s electricity in 2008, carbon dioxide emissions fell by 4.4%, nitrogen oxide and sulfur dioxide emissions fell by 6%, coal use fell by 3% (571,000 tons), and electric-sector natural gas use fell by 14%. DOE data for Texas show that as wind and other renewables’ share of Texas’s electric mix increased from 1.3% in 2005 to 4.4% in 2008, an increase in share of 3.1 percentage points. During that period, electric sector carbon dioxide emissions declined by 3.3%, even though electricity use actually increased by 2% during that time. Because of wind energy, the state of Texas was able to turn what would have been a carbon emissions increase into a decrease of 8,690,000 metric tons per year, equal to the emissions savings of taking around 1.5 million cars off the road. Similarly, thanks to the growth of wind energy in the state, Illinois saw a 0.5% decrease in CO2 emissions from 2006 to 2009, even though electricity use actually increased by 0.75% over that time period. In Minnesota, as wind energy grew from providing less than 4% of the state’s electricity in 2006 to almost 10% in 2009, electric sector carbon dioxide emissions fell by more than 10%, or 4 million metric tons per year.

As further evidence, four of the seven major independent grid operators in the U.S. have studied the emissions impact of adding wind energy to their power grids, and **all four** have found that adding wind energy drastically reduces emissions of carbon dioxide and other harmful pollutants. While the emissions savings depend somewhat on the existing share of coal-fired versus gas-fired generation in the region, as one would expect, it is **impossible to dispute** the findings of these four independent grid operators that adding wind energy to their grids has significantly reduced emissions. The results of these studies are summarized below.

Finally, analysis of readily available DOE data puts to rest the idea that wind energy has a significant negative impact on the efficiency of fossil-fired power plants. The Department of Energy collects detailed data on the amount of fossil fuels consumed at power plants, as well as the amount of electricity produced by those power plants. By comparing how the efficiency of power plants has changed in states that have added significant amounts of wind energy against how it has changed in states that have not, one can test the hypothesis that wind energy is having a negative impact on the efficiency of fossil-fired power plants. The data clearly shows that there is no such relationship, and in fact states that use more wind energy have seen greater improvements in the **efficiency** of their fossil-fired power plants than states that use less wind energy. Specifically, coal plants in the 20 states that obtain the most electricity from wind saw their efficiency decline by only 1.00% between 2005 and 2010, versus 2.65% in the 30 other states. Increases in the efficiency at natural gas power plants were virtually identical in the top 20 wind states and the other states, at 1.89% and 2.03% improvements respectively. The conclusion that adding wind energy actually increases fossil plant efficiency makes intuitive sense, because as explained above, adding wind energy to the grid displaces the output of the most expensive, and therefore least efficient, fossil-fired power plants first.

**Wind power is capable of meeting all domestic energy needs.**

**Sovacool 9** (Benjamin K., Assistant Professor at the Lee Kuan Yew School of Public Policy, part of the National University of Singapore. He is also a Research Fellow in the Energy Governance Program at the Centre on Asia and Globalization. He has worked in advisory and research capacities at the U.S. National Science Foundation’s Electric Power Networks Efficiency and Security Program, Virginia Tech Consortium on Energy Restructuring, Virginia Center for Coal and Energy Research, New York State Energy Research and Development Authority, Oak Ridge National Laboratory, Semiconductor Materials and Equipment International, and U.S. Department of Energy’s Climate Change Technology Program. He is the co-editor with Marilyn A. Brown of Energy and American Society: Thirteen Myths (2007) and the author of The Dirty Energy Dilemma: What’s Blocking Clean Power in the United States (2008). He is also a frequent contributor to such journals as Electricity Journal, Energy & Environment, and Energy Policy, Going Completely Renewable: Is It Possible (Let Alone Desirable)?, The Electricity Journal, Volume 22, Issue 4, May 2009, Pages 95–111)

B. United States

The electricity sector in the United States is a curious mix of partially restructured and deregulated markets along with a collection of states that still adhere to the classic form of monopoly regulation. In 2007, total installed capacity was slightly more than 1,000 GW composed of about 16,000 power plants sending their power through 351,000 miles of high-voltage transmission lines and 21,688 substations. These power plants generated 4,157 million MWh of electricity, with roughly two-thirds coming from fossil-fueled units, 20 percent coming from nuclear units, and the remainder (about 10 percent) coming from renewable resources (including hydroelectric facilities).

Fortuitously, the United States has an enormous cache of renewable energy resources that it has only begun to utilize. While a bit dated, a **comprehensive study** undertaken by the U.S. Department of Energy calculated that 93.2 percent of all domestically available energy was in the form of just wind, geothermal, solar, and biomass resources. The amount of renewable resources found within the country, in other words, amounted to a total resource base the equivalent of 657,000 billion barrels of oil, more than 46,800 times the annual rate of national energy consumption at that point in time.32 Perhaps an even more amazing feature of this estimate is that it was **validated by** researchers at the U.S. Geologic Survey, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Sandia National Laboratory, National Renewable Energy Laboratory, Colorado School of Mines, and Pennsylvania State University.

Compiling data from a collection of peer-reviewed reports, the United States has 3,730,721 MW of renewable energy potential presuming the utilization of existing, commercially available technologies (Table 5). Two things pop out when looking at Table 5. First, the table shows that renewable resources have the capability to provide 3.7 times the total amount of installed electricity capacity operating in 2008. Second, the country has so far harnessed only a whopping 2.9 percent of this potential generation.

As Table 5 implies, the United States possesses an **exceptional abundance** of onshore wind resources. The fuel potential for wind energy, particularly in areas with frequent and strong winds, remains largely untapped. The Midwest and the Great Plains have been called the “Saudi Arabia of wind” and theoretically hold enough technical potential to fulfill the **entire country's energy needs**. The energy potential for offshore wind is even larger, as offshore wind turbines can harness stronger, more consistent winds than those that course through mountain passes or across open plains. An abundance of available roofs, parking lots, highway walls, and buildings are available for integrated solar PV systems and the West has immense solar thermal and geothermal potential. The Midwest has very large reserves of biomass fuel in the form of crop residues and energy crops, and every state has hydroelectric capacity that could still be developed after excluding national battlefields, parks, parkways, monuments, preserves, wildlife refuges, management areas, and wilderness reserves.

### 1AC—Plan

**Plan --- The United States federal government should permanently extend the production tax credit for wind energy in the United States.**

### 1AC—Solvency

**Contention Three – Solvency**

**Only the PTC can provide investor predictability.**

**Dewey 11** (Erin, Graduated Editor in Chief of the Boston College Law Review, Sundown and You Better Take Care: Why Sunset Provisions Harm the Renewable Energy Industry and Violate Tax Principles, May, Boston College Law Review, 52 B.C. L. Rev 1105)

B. Sunsetting the Production Tax Credit

Despite disagreement among scholars regarding the value of sunset dates generally, those in the renewable **energy industry** agree that sun setting of the PTC has impacted the industry and that a permanent PTC would result in more **long-term investment** in renewable energy. n164 Despite the success of the PTC, the credit has not become a permanent feature of the Internal Revenue Code and has been subject to the current sunset trend in Congress. n165 When the PTC was originally adopted in 1992, the taxpayer could only receive the credit if the qualifying facility was placed in service after December 31, 1993 and before July 1, 1999. n166 The latter date was the sunset date, at which point Congress would decide whether to renew the PTC. n167 Taxpayers that placed a facility in service prior to the sunset date would enjoy the full ten-year credit period. n168

As such, Congress initially gave investors a six-and-a-half-year window to begin to develop and construct projects to claim the credit before [\*1126] the PTC expired on July 1, 1999. n169 Five months after the credit expired, Congress extended it for two more years; the credit then expired for a second time on January 1, 2002. n170 Two months later, in March 2002, Congress renewed the PTC for qualifying facilities placed in service before 2004. n171 Again, in January 2004, the PTC expired for a third time, and Congress renewed it in October 2004 until the end of 2005. n172 At this point, the Energy Policy Act of 2005 renewed the PTC for facilities placed in service before 2008. n173 Congress then extended it for an additional year in December of 2008. n174 Finally, the American Recovery and Reinvestment Tax Act extended the PTC once again until the end of 2012 for wind energy. n175

Therefore, beyond the initial six-and-a-half-year period, the PTC has been extended only for one to three years at a time and only with frequent expirations. n176 It was effective for two years, and then two more years, and then one year, and then two years again, and then three years. n177 On three separate occasions, in 1999, 2001, and 2003, Congress let the PTC expire. n178 Political disagreements have contributed [\*1127] to this staggered expiration and extension schedule. n179 Clearly, even though the PTC has been consistently renewed since 2005, uncertainty over its continuation still exists because each renewal in Congress has introduced political posturing and debate. n180

The American Wind Energy Association states that the "on-again, off-again" production tax credit causes uncertainty, which discourages long-term investment in wind power manufacturing and development. n181 This impact is evidenced in Table 1, below.

Notably, Table 1 demonstrates that newly installed wind capacity **dropped precipitously** in the years in which the PTC expired. n183 This drop is particularly evident in 2002 and 2004, where the newly installed capacity dropped by over 1200 megawatts each year. n184 This trend suggests that the **PTC is essential** to the wind industry. n185 Conversely, continuity [\*1128] in the availability of the PTC promoted steady growth from 2005 to 2009, albeit at an inconsistent growth rate. n186 Furthermore, one study indicates that expiration could result in **$19 billion** of lost investment and 116,000 lost jobs. n187 If the PTC expired in 2009, this study projected that only 500 megawatts of wind energy would have been produced, compared with 6500 megawatts with the PTC in place; another study projected that the lack of the PTC would result in **fifty percent less** added wind capacity by 2025. n188

Even though the PTC has spurred investment in renewable energy, it appears that the credit has been unable to reach its full potential. n189 It is possible that the drops in added capacity represent mere timing shifts, such that no change in added capacity results. n190 Nonetheless, staggered renewals have caused investors to rush to complete projects before the PTC expiration, leading to a "boom-and-bust" investment cycle, particularly since 1999, whereby the PTC was renewed only on a 1-3 year basis and was repeatedly allowed to expire. n191 As a result of this, wind production has occurred in "tight and frenzied windows of development," leading to a number of negative outcomes for the U.S. wind industry. n192

Industry experts suggest that this "boom-and-bust" cycle leads to decreased renewable energy development. n193 First, it **increases the cost** of renewable projects. n194 A "herd effect" results when all developers strive to finish renewable projects at the same time: the resulting concurrent added demand increases the cost of materials and construction services. n195 Second, this **increased cost** in manufactured components may result in greater **reliance on foreign manufacturing** and may decrease foreign investment in U.S. manufacturing facilities of renewable [\*1129] components. n196 Third, the rush to complete a project may lead to smaller projects because to meet the "placed in service" date and be eligible for the credit, developers settle for **smaller projects** that can be finished on time. n197 Currently, development has been slowing because **lenders will not loan** money if the project is not comfortably scheduled to be in service within the year the PTC sunsets. n198

Furthermore, the renewable projects suffer from the enhanced risk of sunsetting tax credits during the riskiest phase of the project. n199 Typically the first financial phase of a project is the development and permitting phase, which requires equity funding. n200 Second, the construction phase occurs upon full permitting and relies on both debt and equity. n201 Lastly, the least risky phase is operation which requires only a construction loan refinanced with long-term, low rates. n202 The first financial stage requires commitments of **high risk equity**, including tax equity investors; uncertainty over whether the PTC will be available makes **investors unwilling** to commit to the project. n203 As a result, it is unlikely that projects would receive sufficient financing at the construction or operating stages. n204

C. The Sun Rises on the Low-Income Housing Credit

This Section discusses the LIHTC, a tax credit to promote investment in low-income housing that is a useful tool for comparison to the PTC because: (1) unlike the PTC, it has become a permanent feature of the tax code and escaped the recent sunset trend in Congress, and [\*1130] (2) it incentives private investment in low-income housing, a socially beneficial but relatively unprofitable industry, like renewable energy. n205 Congress created the LIHTC in 1986, and it has since become the primary federal program to incentivize the production of affordable housing. n206 Like the PTC and renewable energy, the program has resulted in private investment in poor communities and promoted a public-private partnership in the development of low-income housing. n207 The LIHTC amounts to a certain percentage of the "qualified basis of each qualified low-income building." n208

The LIHTC was subject to a few sunset provisions during the nascent stages of the program, but it eventually became permanent. n209 Originally, it was slated to expire in 1989. n210 Subsequently, Congress extended the LIHTC program for a year at a time in 1989, 1990, and 1991. n211 Finally, in 1993, the tax provision became a permanent part of the tax code through the Omnibus Budget Reconciliation Act. n212 One expert in the program writes the following of the period prior to permanent codification of the LIHTC:

 [\*1131] Up to this point, the LIHTC program was making halting progress, given that the development community could not be sure of its future existence. With the 1993 Act, Congress finally made the program permanent. As a result, developers could begin to prepare proposals with the knowledge that the program would survive from year to year. n213

In fact, the House Committee on Ways and Means corroborated this rationale for a permanent extension, requiring the permanency of the tax credit in the interest of certainty for investment and efficiency. n214B.

III. SUNSETTING THE PTC FRUSTRATES THE POLICY GOAL OF LONG-TERM INVESTMENT

The PTC's sunset provisions frustrate the congressional policy of promoting long-term investment in renewable energy. n215 This Part first establishes that the theoretical argument favoring sunset dates as a means to promote long-term investment does not apply to the PTC and the renewable energy industry. n216 Next, this Part utilizes the LIHTC to illustrate how permanent tax credits enhance long-term investment and efficiency. n217 Other than its permanency, the LIHTC has many features analogous to the PTC: the structure of the credit, the syndication requirements, and the incentivized industry. n218 Therefore, it serves as an appropriate lens to analyze what impact the PTC's incessant sunsetting has on long-term investment. n219

A. Sunset Dates Do Not Promote Long-Term Investment in the Renewable Energy Industry

The example of the PTC contradicts any contention by tax scholars that sunset dates promote long-term investment in the renewable energy industry. n220 First, renewable energy projects are irreversible investments [\*1132] with long lead times, and therefore investors cannot easily retract their investments upon expiration of the PTC. n221 Second, the sunset dates deal with complete abrogation of the credit, not mere lessening of the incentive. n222 Finally, the PTC does not have an "illusion of certainty." n223

The argument that uncertainty in tax incentives promotes investment in reversible investments does not apply to renewable energy projects, which are not reversible investments. n224 Renewable energy investment often requires specialized syndication agreements to monetize the PTC and large amounts of debt and equity. n225 Furthermore, electricity generation is a specialized industry, rendering the equipment, property, and investments relatively illiquid. n226 Also, the length of time required to develop renewable projects, particularly wind, makes such investments irreversible. n227 Therefore, the argument that sunset dates are beneficial for reversible investments simply does not apply to the PTC. n228

The "use it or lose it" phenomenon, whereby investment increases as taxpayers seek to utilize the credit prior to expiration, also does not apply to renewable energy projects, nor to their respective tax credits. n229 Again, the assumption underlying this phenomenon is that expiration would merely revert to a less beneficial, yet still existent, tax incentive. n230 With the PTC, expiration due to sunset provisions results in the abrogation of the credit altogether; indeed, the PTC has expired on three separate occasions. n231 Such uncertainty about the actual existence of the PTC (which is required to make renewable projects cost competitive) chills private investment in the renewable energy industry. n232

The "use it or lose it" argument further does not apply because renewable energy projects typically take longer to plan and facilitate [\*1133] than the actual renewal period. n233 The behavior incentivized is not merely acquiring certain property or investing money (investment activities that can be done in a short period of time); rather, the PTC aims to incentivize placing a renewable energy project in service, an activity that entails investment, permitting, long-term contracts with utilities, construction, grid access, and NEPA review, all of which take three to seven years rather than the one to four years offered by the renewal period. n234 Furthermore, for the PTC, the electricity must be sold to a third party, which introduces more challenges. n235 Investors may endeavor to place a wind farm in service during the proper year to benefit from a tax credit, but there are a number of factors that may slow this process and prevent the ability of the investor to "use it." n236 Therefore, the unpredictability and length of renewable energy project timelines may prevent the taxpayer from "using" the credit before it sunsets. n237

The argument that sunsetted tax credits are essentially permanent does not apply to the PTC, n238 which has in fact expired on three different occasions. n239 Those in the industry continually doubt the PTC's renewal by Congress, due to political posturing during renewals. n240 Any spurring of growth that does occur may actually hurt the renewable industry as a whole due to its **irregular nature**. n241

[\*1134] The "illusion of certainty" argument is also misguided. n242 Although all investments that result from tax credits suffer from some degree of repeal risks, it is more likely that Congress will fail to renew a provision than take affirmative action to change or repeal a provision, as has been established by Calabresi. n243 Scholars refer to this tendency towards inaction as "legislative inertia." n244 After all, repeal and amendment require passage in both houses and presidential signature, whereas expiration requires no action at all. n245 As such, it is riskier for investors to rely on a tax provision with a sunset date than a permanent tax provision, even though the permanent provision is subject to repeal or revision. n246 Again, such lapse in availability is precisely what occurred with the PTC. n247

In sum, **none of the arguments** suggesting that sunset provisions actually promote long-term investment apply to the PTC and renewable energy industry. n248 Instead, the frequent sunset provisions of the PTC discourage long-term investment because those in the industry cannot rely on its continued existence; to the extent that it does spur investment, the resultant "boom-and-bust" cycle harms the industry by raising manufacturing and capital costs. n249

These concerns over long-term investment are felt by those in the renewable energy industry. n250 Many recommend a more permanent PTC to promote steadier growth. n251 The American Wind Energy Association recommends that the credit be extended for at least five more [\*1135] years. n252 The House Ways and Means Committee and the Senate Finance Committee both mirrored this recommendation in the 110th Congress. n253 Those in the industry have consistently testified to Congress regarding the importance of a predictable tax incentive policy to the industry. n254 Dean Gosselin, of Business Development for Wind Power, stated:

Unfortunately in this instance, two plus one plus one plus one does not necessarily equal five predictable years. . . . Business thrives **on the known** and fails on the unknown. The unpredictable nature of the credit has prevented the needed investment in U.S.-based facilities that will drive **economies of scale** and **efficiencies**. n255

As such, the uncertainty, despite continuous renewal, may discourage investment in the renewable industry. n256

B. Success of the Permanent LIHTC as a Lesson for the PTC

The LIHTC is a valuable tool to assess the impact of sunset provisions on the effectiveness of the PTC because it similarly incentivizes private investment in the low-income housing industry, but, unlike the PTC, has become a permanent feature of the tax code. n257   [\*1136] 1. Similarities Between the PTC and the LIHTC

Like renewable energy, low-income housing is an important social concern, particularly since the recession, as the gap has widened between the number of renting households and the availability of affordable units to rent. n258 Currently, twelve million households spend over fifty percent of household income on housing. n259 A family with only one full-time, minimum wage earner cannot afford a fair-market, two-bedroom rental anywhere in the United States. n260 The production of low-income housing is therefore necessary, much like the production of renewable energy. n261

Furthermore, affordable housing development, like renewable energy production, faces barriers to market entry. n262 Renting or selling housing units for below market rates would be a less profitable, perhaps even unprofitable, venture for developers and investors. n263 Furthermore, there tend to be many objections to siting affordable housing developments. n264

The PTC and LIHTC share many structural similarities: both require that the project comply with certain guidelines during the life of the tax credit, and both are based on production, not just initiation. n265 For the PTC, the electricity must be produced and sold, and for the LIHTC the units must be consistently occupied by low-income tenants. n266 As such, the investment is necessarily long term and irreversible for both the LIHTC and the PTC. n267

Additionally, like the renewable energy tax credits, the LIHTC requires that developers monetize the tax credits by entering financing [\*1137] agreements with tax equity investors. n268 If real estate developers do not expect to have such income tax liability and require capital investment, then tax equity investors will infuse the projects with capital and capture the tax credits during the ten-year period. n269

Finally, both programs have been successful. n270 Due to the LIHTC, millions of affordable units have been built and restored over the past twenty-five years. n271 The PTC has similarly led to increased production of renewable energy projects, and leaders in the industry opine that most such projects would not be built without the PTC program. n272  2. Promoting Permanency for Long-Term Investment

The LIHTC's success after becoming permanent supports the conclusion that permanent extension of tax credits can promote long-term investment in certain industries. n273 Both the LIHTC and the PTC, over the course of their legislative histories, have been subject to sunset provisions; unlike the PTC, which Congress continues to sunset, however, LIHTC was made permanent in 1993. n274 Those in the real estate development industry communicated the same need that those in the wind industry are communicating: certainty that the tax credit will exist is needed for long-term planning and investment. n275 Real estate developers began to make long-term plans more frequently once the LIHTC became permanent and certain. n276 In fact, the very rationale for making the LIHTC permanent was to accommodate the long-term investment interests of real estate developers. n277 A report from the House Committee on Ways and Means stated:

[T]he committee believes that a permanent extension of the low-income housing credit will provide the greater planning [\*1138] certainty needed for the efficient delivery of this Federal subsidy without sacrificing Congress's ability to exercise appropriate oversight of the administration of, and need for, programs such as the tax credit. n278

The committee addressed the need for better "planning certainty" to promote the efficiency of the credit to incentivize low-income housing. n279

Furthermore, corporate investors in low-income housing were rare before 1993, but when the program became permanent, more large-scale corporate investors began to utilize the credits. n280 Prior to 1992, most low-income projects raised equity through individual investors by way of broker-organized retail funds. n281 The permanency of the credit, however, attracted larger investors to the low-income housing market. n282

Congress renewed the LIHTC for one to three years at a time, the credit was less successful. n284 Since [\*1139] being made permanent, the total allocation has steadily increased without drastic spikes and drops. n285

Similarly, the PTC has experienced only halted and inconsistent progress due to its frequent sunset provisions. n286 Therefore, the PTC, unlike the LIHTC, has not had the opportunity to reach its full potential as a result of frequent sunset dates. n287 Production dropped during the expirations and the rate of growth has been inconsistent in the past six years. n288 To the extent that the PTC has increased renewable capacity in the United States, the "boom-and-bust" investment cycle that results from rushing projects prior to sunset dates actually harms the renewable energy industry. n289

Congress should therefore apply the same certainty and efficiency rationale to permanently extend the PTC in order to promote long-term investment. n290 The wind industry and development of renewable energy suffer from the uncertainty of the renewable tax credits due to the frequent expirations and need for renewals. n291 Furthermore, those in the renewable energy industry strongly advocate for a more permanent tax credit for planning purposes, like those in the low-income housing industry. n292

IV. THE SUNSETTING OF RENEWABLE ENERGY TAX CREDITS UNDERMINES THE GOALS OF THE TAX SYSTEM

The sunsetting feature of the PTC contravenes the underlying principles of the U.S. tax system. n293 The extensive use of sunsetting in the tax code and with respect to the PTC warrants a policy analysis. n294 This Part analyzes the frequent sunsetting of the PTC as a feature of the [\*1140] tax system within the framework of the three goals of a tax system: simplicity, equity, and economic efficiency. n295 Because budgetary manipulation and special interest involvement is the primary motivating factor of sunset provisions, the inefficiencies and complexities that these provisions create are not offset by any countervailing tax policy. n296

Analyses of tax proposals and policy, including renewable energy incentives, traditionally consider the following criteria: equity, simplicity, and efficiency. n297 Ideally, tax collection will be fair, simple to administer, and easy to understand. n298 Finally, tax collection should limit unintended distortions of the economy. n299

Creating a simple, easily understood tax system has been a public policy objective of legislators and courts for years. n300 Simplicity is typically evaluated based on the ease of taxpayer understanding and the costs of compliance. n301 Nonetheless, some scholars maintain that complexity is a necessary trade-off for achieving equity. n302 The equity analysis of tax collection falls into two categories, horizontal equity and vertical equity. n303 The former concerns equally situated taxpayers paying equal amounts of tax. n304 The latter concerns appropriate differences among taxpayers who are different. n305

 [\*1141] Finally, economic efficiency measures the extent to which a tax interferes with economic behavior. n306 Taxes reduce economic efficiency to the extent that price distortion results. n307 Some scholars, however, ascribe to the "Pigouvian" theory, whereby the tax system can achieve economic efficiency by actually correcting market inefficiencies, such as positive and negative externalities. n308 As such, a higher level of economic efficiency is attained through the tax system than through imperfect, albeit natural, market activity. n309

A. Sunset Provisions Frustrate the Simplicity Goal of the Tax System

Sunset provisions make the **tax code more complex**, violating the simplicity goal, by increasing the **costs of compliance** and frustrating taxpayer **understanding**. n310 Non-seamless extensions and retroactive renewals further impose administrative costs in the form of reissued tax forms. n311 Also, the consistent threat of expiration creates transactional waste, as interest groups must lobby for extension to realize the benefits of the tax credit. n312 For instance, the American Wind Energy Association and other renewable energy companies frequently lobby for PTC renewal. n313 Furthermore, temporal gaps result from expired and then renewed sunsetting tax provisions, further complicating the code. n314 This has occurred with the PTC: the sunset provisions complicate the investment process for renewable energy because the credits are not certain until the project has been completed, such that additional care [\*1142] and expense must be taken to ensure to the degree possible that the project is placed in service prior to the sunset date. n315

Sunset provisions complicate the code as a result of the potential multifarious **amendments** to substantive provisions each time the credits must be renewed, which creates opportunities for changes in the economic incentives themselves. n316 The PTC, particularly, has been amended seven times in the past fifteen years for renewals alone. n317 Furthermore, no trade-off in enhanced equity accompanies this increased complication; in fact, the sunset provisions create inequity, as discussed in the following Section. n318

B. The Inequity of Sunset Provisions

Frequent sunsetting of the PTC also frustrates the vertical equity goal of the tax system. n319 Sunset dates and the consistent need for renewal introduce more opportunity for lobbying, which inequitably advantages those who have more lobbying resources. n320 Often, the requirement [\*1143] for renewal creates a battle between special interest groups due to the budgetary rules. n321 The pay-as-you-go (PAYGO) budgetary rules require that Congress match each increase to the deficit with a corresponding increase in revenue or decrease in deficit. n322 As such, each renewal of a sunsetted PTC must be matched with a corresponding elimination of tax credit/subsidy or an increase in tax revenue. n323 Therefore, different policies and special interests are often pitted against each other in this budgetary battle; frequently, the group with greater lobbying power prevails. n324 For example, with respect to the sunsetted PTC, the renewable industry must be prepared to increase lobbying efforts each time a renewal date approaches and often must compete against the fossil fuel industry in this endeavor. n325 In 2007, during an attempt to renew the PTC, the bill's sponsors recommended repealing subsidies to more established energy industries, such as oil and gas. n326 This prompted a strong backlash by the powerful supporters of the oil and gas industry, resulting in a failure to renew the PTC, despite increased lobbying efforts. n327 The inequitable treatment of the renewable energy industry with respect to tax benefits is also apparent through a budgetary analysis: the total cost of the production tax credit from 1994 to 2007 amounted to $ 2.7 billion and the amount of subsidies for fossil fuels in 2006 alone amounted to $ 49 billion. n328

This result is contrary to Lowi's theory that sunsetting legislation will weaken the power of special interest groups in the legislative process--instead, sunset dates enhance the role of special interest groups. n329 Lowi hypothesized that a periodic review would disrupt special interest group influence. n330 Sunsetting tax provisions in particular, however have [\*1144] introduced more special interest group influence. n331 One scholar writes of how the increased presence of special interests results in inequity:

Sunset provisions are problematic because they demand the expenditure of resources by interested parties on a continual basis (until, of course, the law is sunsetted). Thus, the well-connected and well-resourced players have a significant advantage, which increases across time, in the competition over sunsetted legislation. Indeed, the expansive use of sunset provisions may lead to more tax legislation that, from the outset, benefits such well-financed players, because legislators will want to engage those interest groups that contribute upon each sunset date. n332

The experience of the PTC is inconsistent with Lowi's theory of sunset dates. n333 The PTC's sunset dates increase special interest lobbying inequitably because the powerful oil and gas industries can divert more lobbying resources to win budgetary battles. n334 Therefore, sunset provisions violate the vertical equity principle by failing to make appropriate differences between taxpayers who are different; instead they inequitably favor those with more resources to the detriment of the renewable energy industry. n335

C. Economic Inefficiencies of Sunset Dates

Sunset provisions in the PTC also violate the tax goal of economic efficiency. n336 Again, the "Pigouvian" theory permits the tax system to fix market inefficiencies, and therefore a tax system may attain a higher level of economic efficiency than an imperfect, albeit natural, market. n337 One such inefficiency can be the failure of the market to correct for externalities or divergences between the private costs of an activity and the social costs of an economic activity. n338

 [\*1145] The PTC, by incentivizing the production of renewable energy, promotes efficiency because of the uncorrected positive externalities in the renewable energy market and negative externalities of non-renewable energy. n339 The positive externalities of renewable energy production include cleaner, domestic energy sources for electricity, and increased job growth. n340 These social returns of renewable energy arguably dwarf the monetary returns of investment, because high costs and risks frustrate the profitability of renewable energy projects. n341 As such, the production tax credit achieves economic efficiency by "paying for" those positive externalities through a deduction in income tax liability. n342 Furthermore, pollution from non-renewable energy sources creates negative externalities because the negative social costs of environmental degradation diverge from the cost of production for such energy. n343 Therefore, incentivizing renewable energy through tax credits leads to a more efficient outcome by accounting for such positive and negative externalities and closing the divergence between these costs/benefits and the cost of production of renewable energy. n344

Sunset provisions, however, undermine this economic efficiency and decrease the potential social benefits attained by the PTC. n345 They frustrate these **market-correcting features** of the PTC, as they **discourage long-term investment** and therefore frustrate the **externality-correcting potential** of the tax credit. n346 Furthermore, the **price of renewable energy** will reflect this uncertainty, increasing the price and decreasing the efficiency-promoting function of the credit. n347 One expert writes:

[W]e can capture economic efficiency gains by permitting taxpayers to count on [the credit's] continued availability. . . . [The reflection of uncertainty in price] is a phenomenon [\*1146] clearly visible, for example, in the wind and solar power industries, which rely on a "temporary" tax subsidy for their existence. Industry participants, including suppliers like wind turbine manufacturers, are subject to violent swings of fortune as the fate of the subsidy periodically teeters: the result is that the industry is smaller, and its cost of capital is higher, than would be true if there were greater certainty in the program. n348

Thus, not only is the uncertainty of PTC availability transferred to the price of renewable energy, but also to the costs of capital and industry **manufacturing**. n349 Therefore, the credit's ability to account for positive externalities, and hence to promote economic efficiency, is offset by the increased uncertainty costs to a renewable project. n350

CONCLUSION

The permanent extension of the PTC is **necessary to promote** renewable energy in the United States and to achieve President Obama's goal of "reinventing" the nation's clean energy economy. The frequent expiration of the PTC through sunset provisions of the PTC, by contrast, **impedes these ends**. Congress rationalizes PTC sunset provisions on political gain and budgetary manipulation alone; they are not offset by any countervailing tax policy. In fact, sunset dates frustrate all fundamental goals of tax collection. The financial incentive of the PTC spurs investment in renewable energy, making it **cost-competitive** with non-renewable energy sources. Investors and those in the renewable energy industry, therefore, require certainty with regards to the PTC's continued existence. Without such certainty, renewable projects will be substantially reduced and the renewable industry as a whole harmed. The LIHTC serves as an important example of how permanency can positively affect the incentivizing feature of a tax credit. For the foregoing reasons, Congress should heed the renewable industry's recommendation to permanently extend the PTC in the interest of realizing the social and economic benefits of renewable energy.

**Federal action is needed to ensure investors.**

**Sovacool 8** (Benjamin K., Assistant Professor at the Lee Kuan Yew School of Public Policy, part of the National University of Singapore. He is also a Research Fellow in the Energy Governance Program at the Centre on Asia and Globalization. He has worked in advisory and research capacities at the U.S. National Science Foundation’s Electric Power Networks Efficiency and Security Program, Virginia Tech Consortium on Energy Restructuring, Virginia Center for Coal and Energy Research, New York State Energy Research and Development Authority, Oak Ridge National Laboratory, Semiconductor Materials and Equipment International, and U.S. Department of Energy’s Climate Change Technology Program. He is the co-editor with Marilyn A. Brown of Energy and American Society: Thirteen Myths (2007) and the author of The Dirty Energy Dilemma: What’s Blocking Clean Power in the United States (2008). He is also a frequent contributor to such journals as Electricity Journal, Energy & Environment, and Energy Policy, The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change, Stanford Environmental Law Journal, 27 Stan. Envtl. L.J. 397)

B. State Climate Change Policies

Similarly, the states have taken the initiative in addressing climate change under a devolved federalist paradigm, implementing comprehensive and crosscutting programs as well as those narrowly focused on agriculture, transportation, education, and energy. As of 2006, more than forty states have developed comprehensive greenhouse gas inventories, twenty-eight have completed climate change action plans, and fourteen have mandated greenhouse gas emissions targets. n279 The most aggressive is New York, aiming for five percent below 1990 carbon dioxide emissions levels by 2010, followed by Connecticut, Illinois, Massachusetts, Maine, New Hampshire, New Jersey, Rhode Island, and Vermont, aiming for 1990 levels by 2010. n280 Motivated to encompass a broader geographic area, eliminate duplication of work, and create more uniform regulatory environments, many states have also established regional initiatives to fight climate change such as the Western Climate Initiative on the West Coast [\*461] and the Regional Greenhouse Gas Initiative (RGGI) on the East Coast. n281

California has also tried to forge ahead in adopting greenhouse gas standards for new cars, trucks, and vans.

Effective for the 2009 model year and later, rules proposed by the California Air Resources Board (CARB) will require manufacturers to reduce emissions of carbon dioxide and other greenhouse gases by 30 percent. The standards will apply to [\*463] automakers' fleet averages, rather than each individual vehicle, and automobile manufacturers are given the option of qualifying for credits through the use of alternative compliance strategies - such as the increased use of a [sic] less greenhouse gas intensive fuels ... in certain vehicles. n284

Under increased pressure from automobile manufacturers, the EPA is currently attempting to thwart California's effort on the grounds that the Clean Air Act already establishes stringent enough regulations. n285

Furthermore, Oregon, New Hampshire, Massachusetts, and Washington, call for regulation of carbon dioxide from electric power generators. Under the ... Washington law ... new power plants must offset twenty percent of their carbon dioxide emissions by planting trees, buying natural gas-powered buses or taking other steps to cure such emissions. n286

New Hampshire and Massachusetts laws apply to existing power plants, capping emissions and allowing plants to meet the standard through energy efficiency and credit trading. n287 In their assessment of worldwide action on climate change, David G. Victor, Joshua C. House, and Sarah Joy concluded that that the "fragmented "bottom-up' approach to carbon-trading ... is pragmatic and effective." n288 Despite these impressive strides and the claims put forth from Victor and his colleagues, however, local and regional efforts to combat climate change suffer from difficulties relating to design, fairness, and legality.

1. Design.

Like RPS programs, state climate change policies lack consistency and harmony. Most states attempt to promote research, ensure economic stability, and encourage public and private cooperation. However, they tend to place very little [\*464] emphasis on mandatory standards, and they fail to create **predictable regulatory environments**. In other words, United States policy has so far provided "lots of carrots but without any sticks." n289

True to the devolved federalism thesis that states will act as laboratories of democracy, states have demonstrated great variability in addressing climate change. The states have, in short, created a "flurry of sub-federal activity" on climate change. n290 Thomas D. Peterson identified "over 200 specific policy actions with [greenhouse gas] objectives [that] are under development or have been implemented by the states... ." n291 These actions range from appliance standards to alternative fuel mandates for the transportation sector, industrial process regulations, and farm conservation programs. n292 They "use a variety of voluntary and mandatory approaches," such as codes and standards, permits, technical assistance, procurement, information, and education. n293 They also span different greenhouse-gas-emitting sources. Some focus on power supply, while others focus on transportation, land use, and waste management. n294

Even those that focus solely on particular greenhouse-gas-emitting sources such as electricity generators differ greatly. Some state standards are input-based, enabling allowances to be "auctioned to individual generators based on historical emissions or fuel input." n295 Some are load-based, allowing utilities to achieve carbon credits not from historical emissions or projections, but from real-time generation. Others are offset-based, enabling carbon-reducing actions such as the planting of trees to count. n296 Still others are set-aside-based, counting allowances retired by customers in the voluntary market through green power programs. n297

Such variability and experimentation, however, is becoming a weakness. The multitude of state greenhouse gas policies is more costly than a single, federal standard because it **creates complexity for investors**. State-by-state standards significantly increase the cost [\*465] for those attempting to conduct business in multi-state regions. n298 Statewide implementation programs also require separate inventory, monitoring, and implementation mechanisms to check progress against goals and provide feedback, adding to their cost. n299 And state programs provide incentives for local and regional actors to duplicate their research-and-development efforts on carbon-saving building technologies and energy systems, compromising efficiency. n300 Lack of a "**meaningful federal policy** on greenhouse gas emissions [also means that] investors in long-term energy assets such as power plants (the single greatest emitters of carbon dioxide) must make multibillion-dollar commitments without knowing what regulatory regime may exist in the future." n301

2. Free-riding and leakage.

State-by-state action on climate change is prone to the "free rider" phenomenon. A very high "political hurdle" exists for state-level action on climate change, mainly "because [greenhouse gases] mix globally and have global impacts, local abatement actions pose local costs, yet deliver essentially no local climate benefits." n302 Utilities operating in a region that includes states with mandatory emissions regulations and those without have an extra incentive to build new power plants only in those without. For example, PacifiCorp, a utility serving customers in the Pacific Northwest, has repeatedly attempted to build coal-fired power plants in Wyoming and Utah, states without mandatory greenhouse gas reduction targets, but not in Oregon (which has mandated a stabilization of greenhouse gas emissions by 2010) and Washington (which has mandated 1990 levels by 2020). n303 The state-by-state patchwork of climate change policies, in other words, allows stakeholders to manipulate the existing market to their advantage.

This is exactly what is happening in RGGI. RGGI is a carbon cap-and-trade program where fossil fuel plants are allotted a [\*466] certain number of allowances that permit emission of greenhouse gases. These allowances are based on the plant's historical emissions or the input of fuel needed to generate every unit of electricity, making it an "input-or generator-based" scheme. n304 Power plants that need more allowances than they are given must purchase them from another plant that has an excess number, retrofit old equipment, sequester carbon geologically or in algae, or purchase offsets. Offsets come in five categories: landfill methane capture, reductions of sulfur hexafluoride emissions, carbon sequestration due to reforestation or afforestation, reduction of fossil fuel use due to improved energy efficiency, and avoidance of methane emissions from agricultural manure management. n305 Over time, the total number of allowances is decreased, making it harder for generators to pollute. The design of the program, however, creates perverse incentives for generators to lower emissions by purchasing energy from fossil fuel plants in neighboring states that do not have carbon restrictions. Estimates for RGGI have shown leakage rates as high as sixty to ninety percent due to the importation of electricity alone, as power plants in adjacent states have increased their output to sell into the higher-priced electricity markets in RGGI states. n306 Since carbon emitted into the atmosphere has the same warming potential regardless of its geographic source, such gaming of the system does not result in meaningful carbon reductions.

Localized climate action also sends **distorted price signals**. By lowering demand for carbon-intense products, state standards reduce the regional (and even global) price for carbon-intense fuels. But in doing so, they provide further incentives for nearby states without climate regulation to do nothing because of lowered prices. n307 Put another way, states acting on climate change depress the cost of fossil fuels and other carbon-intense commodities by lowering demand for them, and thus lowering their price. Yet reduced prices encourage over-consumption in areas without [\*467] carbon caps, decrease the incentive to enact energy efficiency and conservation measures, and discourage the adoption of alternative fuels for vehicles and renewable energy technologies. After assessing state and local climate change programs, for example, Robert B. McKinstry, Jr. noted that without coordinated action, "reduction in demand for fossil fuel in the industrial sector may keep prices down and encourage growth in the transportation sector. Similarly, in the short run, reductions required in one state may benefit competitors operating in states that do not require reductions." n308

The danger of this free riding and leakage is threefold. Most obviously, it undermines the environmental effectiveness of any restrictions on greenhouse gas emissions, and if leakage exceeds 100 percent (something possible given the experiences with RGGI), net emissions of greenhouse gases could hypothetically **increase**. n309 Even if physical leakage does not occur, the fear of leakage and its adverse effects on economic competitiveness may create political obstacles to meaningful climate change action. n310 Finally, leakage has a tendency to lock in asymmetries between carbon-intensive and climate-friendly regions and commit nonparticipants to a path of future emissions. As leakage proceeds over time, it shifts greenhouse gas emissions from regulated regions to unregulated ones. It thereby renders the unregulated region's economy more emissions-intensive than it otherwise would have been, making it more difficult to persuade communities that initially decided to avoid participation ever to commit to greenhouse gas reductions. n311

3. Legality.

As is the case with state RPSs, state action on climate change risks constitutional challenge under the Compacts Clause of the constitution (states are not permitted to form compacts with each other) and the Supremacy Clause (federal regulation preempts contradicting state law). n312 The Clean Air Act expressly prohibits [\*468] state regulation of vehicle emissions standards. n313 Likewise, by mandating national corporate fuel economy standards, the federal government preempts state regulations related to the efficiency of automobiles. This means that most states are unable to legally address carbon emissions from the transportation sector (thus the current battle between California and the EPA). n314

4. Insufficiency.

Finally, even the most aggressive climate statutes will make only a negligible contribution to offsetting greenhouse gas emissions. In the Northeast, states with mandatory greenhouse gas regulations all rank relatively low in greenhouse gas emissions, with the exceptions of New York and New Jersey (which rank ninth and seventeenth respectively). According to the EIA, by 2030, total energy-related carbon dioxide emissions in the United States will equal approximately 8.115 billion metric tons per year, equal to a sixty-two percent increase from 1990 levels with an average increase of 1.2 percent per year. n315 "Yet those states that had committed to achieving time-bounded, quantitative reduction targets for greenhouse gas emissions as of 2006 accounted for only around twenty percent of nationwide emissions in 2001." n316 Even if all attained their targets, which is not certain, state policies would result in a reduction of around just 460 million metric tons of carbon dioxide by 2020, or a reduction of 6.38 percent compared to business as usual. Furthermore, the other states would not just offset these gains; the overall growth rate still would increase at 1.06 percent each year. n317

 [\*469] A few examples help prove this point. If Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee were considered a country, it would rank fifth in the world for greenhouse gas emissions, ahead of even India and Germany - yet none of these states have mandatory greenhouse gas targets. n318 Similarly, on the West Coast, most states emit more greenhouse gases than a majority of countries on the planet: California exceeds the emissions of 211 nations; Arizona and Colorado, 174 nations each; Oregon, 151 nations; and Idaho, 129 nations. n319 The scale of the challenge is enormous, and as Scott Segal from the Electric Reliability Coordinating Council put it, "the notion that any one state or group of states could make a material contribution to solving the problem [of global climate change] is **farcical**." n320

Local and state efforts to address climate change are also inadequate in a second sense: they do nothing to significantly reduce ambient levels of carbon dioxide. Jonathan B. Wiener argues that no single city, state, or region can effectively control ambient levels of carbon dioxide and other greenhouse gases on its own. n321 Ambient concentrations of carbon dioxide are determined only by worldwide concentrations in the atmosphere. Wiener concludes that the nature of greenhouse gas emissions demonstrates why attempts to regulate carbon dioxide as a pollutant under the National Ambient Air Quality Standards and State Implementation Plans of sections 109 and 110 of the Clean Air Act will face immense challenges. **No state mechanism**, in isolation, could attain serious reductions in the ambient level of CO2 without significant international cooperation. n322

As a result, state-by-state reductions do not lower emissions quickly enough nor do they reduce ambient levels of carbon dioxide. They "are nowhere near the magnitude of reductions needed to bring the United States into compliance with the Kyoto Protocol's call for reductions of five percent below 1990 levels from 2008 to 2012 - much less the reductions needed to avert [\*470] "dangerous anthropogenic interference with the climate system.'" n323

V. Part Four: The Case for Federal Interaction

The above examples with state-based RPS and climate change policies demonstrate that there are situations in which federal interaction is desirable, or even essential, to avoid many of the shortcomings presented by centralized, devolved, and dual federalist attempts to protect the environment. As a rule of environmental policy, such examples seem to suggest that the prevalence of four distinct conditions warrant federal interaction.

First, general agreement must exist on the magnitude of the environmental problem, and existing state actions must be insufficient to prevent it. n324 Unless the worst offenders can be persuaded to join them, state and regional attempts to improve the environment, particularly when they are voluntary, will do little to substantially enhance environmental quality. As the previous section on renewable energy and climate change demonstrates, this is **especially the case** concerning renewable energy (which will grow to only four percent of national capacity by 2030 under state initiatives) and greenhouse gases (where state action will do nothing to slow, let alone equalize or reverse, emissions).

Second, the states must face constitutional challenges to dealing with the problem individually. Innovative state programs dealing with interstate spillovers will always face challenges alleging that they interfere with interstate commerce under the dormant commerce clause. Moreover, attempts to forge interstate and international cooperation face legal questions based upon the Compacts Clause and the Supremacy Clause of the Constitution. For these reasons, federal interaction is needed to remove the underlying tensions between state-by-state environmental action and the United States Constitution.

Third, the existing state regulatory environment must impose additional costs on businesses and consumers. Differing state statutes can complicate efforts to conduct business in multiple states. They risk creating incentives for multiple firms to duplicate costly research and development. And they can significantly increase transaction costs associated with enforcing and [\*471] monitoring a plethora of distinct individual programs. Federal interaction can provide investors with a level of **simplicity and clarity** needed to facilitate sound decisions. n325 Redundant and overlapping state regulation can **lead to confusion**, high compliance costs, and a drag on otherwise beneficial activities. A multiplicity of regulators that do not match well with an underlying social ill can lead to a regulatory commons problem, where neither potential regulators nor those desiring regulation know where to turn. n326

Fourth, the matching principle must illustrate that the proper scale in addressing the problem is national or international, not local. When problems are national or international in scale, the matching principle in environmental law suggests that the level of jurisdictional authority should best "match" the geographic scale of that very problem. n327 The current state-by-state approach ensures that the distribution of the costs and benefits of providing public goods remains **uneven and asymmetrical**. n328 Generally, it is more efficient and effective to address national or international environmental problems through **institutions of equivalent scope** of the problem in question. The matching principle ensures that "ecologies of scale" are created so that environmental degradation or pollution extending beyond individual state borders can be addressed. n329 When interstate spillovers or public goods are involved, federal intervention is needed to equalize disparities between upstream and downstream communities. n330

 [\*472] The **historical support** for federal interaction based on these four conditions seems strong. Examples of areas where state action made the way for an eventual federal statute include air quality, low emissions vehicles, hazardous waste, water quality, land reclamation, energy efficiency, acid rain, mercury emissions, and wetlands development. When Congress wants uniformity but still wants to enable the states to experiment, it can allow for the development of a single standard met by all of the states themselves, but should set a "floor" instead of a "ceiling." Federal floors allow for greater state stringency, as well as diversity and creativity in implementing federal regulatory standards. Especially in the setting of environmental regulation, with its developed delegated program structure, the process of setting federal floors can achieve many of the benefits of both devolution and centralization at once. n331

Congress did something similar with the Clean Air Act of 1965, which allowed California to establish air pollution emission standards for vehicles. All other states were given the opportunity to adopt California's standards or remain subject to the federal standards developed by the Environmental Protection Agency. n332 Similarly, California implemented its Low Emission Vehicle Standards (Cal LEV) in the 1990s, well before a national standard. n333 California mandated that the state phase in four categories of progressively lower-emitting vehicles. The automobile industry reacted negatively, fearing the spread of California's stringent standards. The federal government brokered a compromise in which the industry produced automobiles meeting nationally uniform standards that were less stringent than California's but more stringent than the existing ones. The states were free to adopt nationally low emission vehicles (NLEV) or Cal LEV, but not both. n334

**The free market fails to correct market imperfections.**

**Arnold 8** (Zach, Fellow at the Breakthrough Institute, Co-Chair and Communications Director of the Environmental Action Committee at Harvard University, Urban Gardener In the Cambridge School System – UN Commission on Sustainable Development, Breakthrough Responds: Why Carbon Pricing Won’t Cut It, http://thebreakthrough.org/archive/breakthrough\_responds\_why\_carb#)

Reality, part II: trouble in the market

But carbon pricing doesn't merely face political problems. "Market-driven solutions" like cap-and-trade are also subject to myriad market **inefficiencies** and **inelasticity’s**. Max highlights a few of these, but the fact is, these troublesome dynamics are everywhere. A wide variety of factors, of which price is one, influence people's decision making about how much energy they'll consume, or what sort of car, factory, or power plant they want to buy - so in most cases, simply nudging the prices in play **isn't enough**.

Generally, the phenomena I'm referring to are known as "**market failures**" - situations where, for one reason or another, people or firms don't make decisions that would be a net positive for society - or even for their own pocketbooks. These are extremely common in the areas near and dear to energy policymakers' hearts. After all (to cite one example), if people made decisions based simply on overall cost vs. benefit, then every house in America would already be outfitted with a solar water heater and decent insulation - measures that are already profitable for both individual actors and society at large, even without a carbon price. Or consider the serious dearth of energy research - total basic energy R&D in the U.S. is less than the R&D budget of one biotech company.

Market failures like these have a million causes, which perhaps explains why most cap-and-trade advocates tend to avoid talking about them beyond a generic "the government should fix them." However, not only do carbon-price proposals generally not seek to "fix them," but these failures are far more widespread than most admit.

Take electricity production, for example. As a recent article on this subject opined, "Ultimately, the belief that prices alone will solve the climate problem is **rooted in the fiction** that investors in large-scale and long-lived energy infrastructures sit on a fencewaiting for higher carbon prices to tip their decisions." Investors in power plants aren't likely to choose clean options (cogeneration, renewables, even natural gas) if there's **uncertainty** over the future price of carbon, or over the lifetime emissions of a proposed project. Moreover, insufficient **public infrastructure** (like transmission lines) and **human capital** (solar installers, wind turbine technicians) often obstruct clean energy development.

There's also pervasive inelasticity’s in the areas that carbon pricing targets. As I alluded to before, heating and transportation - which together account for over half of American emissions - have really inelastic demand, meaning that big price hikes don't translate to big changes in behavior. People drive and heat their homes because they have to, not because it's affordable.

Some of these dynamics (e.g., inelasticity) can't be changed through policy, making a carbon price somewhat irrelevant in those instances. But most market failures can. However, if legislation doesn't address a fair few of them (and I'm not aware of an existing carbon price proposal that does), then the impact of a carbon price could be seriously compromised. Were the levels of CO2 pricing currently being thrown around in legislative proposals (low double digits per ton) to be implemented directly, via a carbon tax or cap-and-trade "safety valve" mechanism, we might achieve the worst of both worlds - real financial costs to consumers, but little change in emissions. On the other hand, if the government stood firmly by the principles of cap-and-trade, limited overall emissions, and allowed the market to set its carbon price autonomously, the presence of failures would drive the price up higher and higher, bringing us back to a tricky political problem likely to result in the weakening of the regime.

Market failures don't invalidate the idea of carbon pricing per se - any energy policy will have to take them on. However, they do demonstrate that it would be unwise to focus excessively on pricing as a panacea. Max writes, "The government should stick to targets and let the market figure out how to achieve them. Government action should be targeted to address specific market failures." But when you consider the vast array of dynamics (including, but not limited to, classical market failures) that conspire to limit the impact of a carbon price, it becomes clear that a wide variety of government interventions will be necessary, and not simply a quick fix tacked on here and there. And if these interventions aren't made, as I discussed above, big problems materialize.

The alternative

Pursuing a cap-and-trade-led regime today would entail taking a massive political risk. The payoff, were it to materialize, would be a complicated regulatory regime, one whose efficacy would require costs far above the realm of the politically possible - making it an instant non-starter.

You'll forgive me for being underwhelmed.

Max is right to point out that the challenge we aim to tackle is vast, and we're going to need all the tools we can get to take it on. Would an ideally administered, quickly implemented, high carbon price (supported by various complementary policies) be a good tool to have? Sure. But debating idealized policies doesn't help anything. In the real world, the American polity and the American market are not ready for a tough carbon price. With this in mind, the proper response is not to continue to advocate an unimplementable strategy. Instead, we believe that the best way to respond to the climate challenge right now is to **massively expand** the role of the federal government in researching, developing, and deploying clean technology.

Unlike cap-and-trade, such a strategy is politically feasible; Americans are eager for an energy initiative based not on limits and regulation, but on large-scale investment and a public push for energy independence. With energy prices at the top of Americans' concerns, a policy focused on providing new, clean and affordable energy sources - rather than pricing our way to greenhouse gas emissions reductions - would stand on significantly stronger political footing.

And importantly, this strategy isn't a simple compromise, or a capitulation to the prevailing political winds. Government action can spark real change - and in fact, it always has. Stepping up public involvement to such a degree is often dismissed as "picking winners" - substituting the imperfect expertise of the government for the invisible hand of the market. However, leaving the very real imperfections of the market (not to mention every extant cap-and-trade proposal) aside, **history** indicates that the government can and almost always does play a key role in technological transition. From R&D support for civil aviation, lasers, and software to the demonstration and deployment of technologies like computer networks and modern wind turbines, direct public intervention has been essential over the past century - in every step of the development process, not simply basic research.

(As an aside: it's interesting that Max brings up the PC revolution in this context. While the U.S. government might not have subsidized the IBM 5150 (as Max dryly observes), it actually did buy copious amounts of early microchips, leading to a precipitous decline in per-unit cost and fueling the development of today's semiconductor and personal computer industries. Government deployment strategy at work!)

It's time to embrace the role the government can play. There's no doubt that a government-led investment strategy comes with many problems of its own. We are aware, for example, that public investment and continuing subsidies have all too effectively created mature fossil fuel and corn ethanol industries. But a well-designed, investment-centered policy - a policy that mobilizes public and private capital through direct funding and indirect incentives, addresses pervasive market failures, and inspires Americans to help create our new energy future - has the potential to be truly transformative. We're still working through the details of what such a policy looks like, and we'd love the help of other policy and political minds. But for now, given the circumstances of our time and the nature of the challenge we face, we're confident that this is the direction to choose.

## \*\*\* 2AC

**2AC—AT: ManU UQ**

**Manufacturing low now.**

**Belz** **1/13**/13Adam. “Report shows U.S. manufacturers continue to lag,” Minneapolis Star Tribune, http://www.startribune.com/business/186574671.html?refer=y.

American manufacturing is still falling behind its foreign competitors.

The nation's overall trade deficit widened by 16 percent in November as foreign imports of consumer goods outpaced domestic sales. And U.S. industry is losing ground at home to overseas businesses in advanced manufacturing, the making of high-value goods that has been touted as key to the future of the American economy, according to a report from the U.S. Business and Industry Council.

"Contrary to widespread optimism about an American industrial renaissance, domestic manufacturing's highest-value sectors keep falling behind foreign-based rivals," the report's author, Alan Tonelson, wrote.

Amid hopes that American manufacturers are bringing jobs back to U.S. soil as the economy recovers from the recession, Tonelson's report is a cold shot of realism.

He analyzed 106 high-tech and capital-intensive manufacturing sectors from the Census Bureau's Annual Survey of Manufacturers and found that imports accounted for 37.5 percent of the $2 trillion in high-value manufactured goods sold in the United States in 2011, a larger share than 2010.

Early indicators show foreign imports likely took a larger share of the market in 2012, the report said. U.S.-based manufacturers have gained market share against foreign competition in only eight of the more than 100 categories since 1997.

It's not that manufacturers aren't thriving. Companies that survived the recession snapped back quickly, with total U.S. manufacturing output rising 19 percent between 2009 and 2011, to $1.8 trillion. Minnesota manufacturing output rose 25 percent over the same period.

But overseas industry continues to win a larger share of the U.S. market, one reason manufacturing has failed to put together sustained job gains. In Minnesota, manufacturer hiring grew steadily in the first half of 2012 and then stalled, declining more than 2 percent between July and November, according to state job data.

"I think there is some level of [reshoring], but I don't think it's as big as the hype says it is," said Paul Skehan, director of operations for BTW Inc., a Coon Rapids firm that makes various electronics parts for other manufacturers.

BTW has grown 15 to 20 percent each of the past three years. But 90 percent of the firm's customers have no plans to bring jobs back to the United States, Skehan said. Those companies who do move production to the United States are building goods that are time-sensitive or don't fit efficiently into a shipping container.

When it comes to high-volume products that account for a huge share of the manufactured goods sold in the United States, including consumer goods, the economics of offshoring are tough to resist.

"When they're over $100 million, companies are being forced more and more to send stuff overseas," Skehan said.

In November, the U.S. trade deficit grew 16 percent from $42.1 billion to $48.7 billion, the Commerce Department said Friday.

Nationally, goods for which imports account for more than half of U.S. sales are construction equipment, electricity measuring and test equipment, turbines and turbine generator sets, metal-cutting machine tools, mining machinery and equipment, industrial process controls, and broadcast and wireless communications equipment.

Minnesota's strongest manufacturing is in computer and related electronics products, machinery and fabricated metal products. These are sectors where imports have taken a larger share of the U.S. market in recent years, Tonelson said.

Mark Thomas, CEO of Victoria-based HEI Inc., said some reshoring has occurred as Asian companies facing an improved economy dump smaller contracts.

Companies that want long-term relationships with suppliers, low inventory, design flexibility and attention to quality will pay for goods made in the United States. But those business relationships are rare and confined largely to specialty goods that command top dollar. For instance, HEI makes complex microelectronics for hearing aids, medical devices and military radios, among other things, at locations in Minnesota, Colorado and Arizona.

Even in those special cases, Thomas said, the return of manufacturing jobs to the U.S. is more exception than rule.

"We have not seen a significant amount of reshoring," Thomas said. "I think there's an element of wishful thinking."

**2AC—Gas DA**

**Volatility now.**

**Meyer 1/24**/13 (Gregory, Financial Times, Cold snap exposes natural gas volatility, http://www.ft.com/intl/cms/s/0/027b2c4a-6644-11e2-b967-00144feab49a.html#axzz2KM4rJS9f)

Wholesale natural gas in New York soared to more than 10 times benchmark prices as a cold snap hit the city, illustrating how pockets of volatility linger in a market lulled by the US shale drilling boom.

The heating fuel was $38 per million British thermal units at a hub known as Transco Zone 6 New York city gate on Thursday, more than double last week’s close, according to Platts.

Benchmark Nymex February gas futures meanwhile fell 3 per cent to $3.446.

The sharp rally brought to mind days when natural gas was one of the most volatile commodities, enabling big gains or losses for hedge funds such as Centaurus and Amaranth.

Gas is plentiful in the US as a whole, with stocks 12 per cent above average.

Drillers have unlocked new supplies in formations such as Pennsylvania’s Marcellus shale about 150 miles west of New York.

But pipeline choke points at big consumers such as New York and Boston have caused prices there to spike.

“We have a lot of gas,” said Teri Viswanath, a gas analyst at BNP Paribas in New York. “But we have a problem where we still have limited delivery into this region. When it’s really, really cold, our demand can easily surpass supply.”

The US Energy Information Administration last week warned that gas prices in the New England region “could be volatile at times” because supply pipelines are full and high international prices are keeping away cargoes of liquefied natural gas.

The rise in New York wholesale gas prices came as below-freezing temperatures gripped the city, spurring heating demand. Consumption in the metropolitan area is up 25 per cent from earlier this month to 5.01bn cubic feet per day, Bentek Energy said.

Bearing the brunt will be power plants that run on gas as generators are forced to burn fuel oil instead, analysts said. The thermal value of New York heating oil was $21 per m British thermal units on Thursday.

The Transcontinental pipeline, which delivers gas to New York, ordered penalties for shippers that did not balance gas deliveries and receipts.

“Transco has experienced below normal temperatures and significant gas demand over most of its market area,” the pipeline operator said.

Laurent Key, a gas analyst at Société Générale, said: “We have so much gas in Appalachia but not nearly enough capacity to bridge Appalachia to New York.”

Spectra Energy is building a pipeline to bring an additional 800m cubic feet per day into New York.

### 2AC—AT: No Impact

**And it collapses the earth’s oceans.**

**IANS 10** (Indo-Asian News Service, Citing Ove Hoegh-Guldberg, Professor at University of Queensland and Director of the Global Change Institute, John Bruno – Associate Professor of Marine Science at UNC, http://www.thaindian.com/newsportal/sci-tech/could-unbridled-climate-changes-lead-to-human-extinction\_100382787.html)

Sydney: Scientists have sounded alarm bells about how growing concentrations of greenhouse gases are driving irreversible and dramatic changes in the way the oceans function, providing evidence that humankind could well be on the way to the next great **extinction**. The findings of the comprehensive report: 'The impact of climate change on the world's marine ecosystems' emerged from a synthesis of recent research on the world's oceans, carried out by two of the world's leading marine scientists. One of the authors of the report is Ove Hoegh-Guldberg, professor at The University of Queensland and the director of its Global Change Institute (GCI). 'We may see sudden, unexpected changes that have serious ramifications for the overall well-being of humans, including the capacity of the planet to support people. This is further evidence that we are well on the way to the next great extinction event,' says Hoegh-Guldberg. 'The findings have enormous implications for mankind, particularly if the trend continues. The **earth's ocean**, which produces half of the oxygen we breathe and absorbs 30 per cent of human-generated carbon dioxide, is equivalent to its heart and lungs. This study shows worrying signs of ill-health. It's as if the earth has been smoking two packs of cigarettes a day!,' he added. 'We are entering a period in which the ocean services upon which humanity depends are undergoing massive change and in some cases **beginning to fail**’, he added. The 'fundamental and comprehensive' changes to marine life identified in the report include rapidly warming and acidifying oceans, changes in water circulation and expansion of dead zones within the ocean depths. These are driving major changes in marine ecosystems: less abundant coral reefs, sea grasses and mangroves (important fish nurseries); fewer, smaller fish; a breakdown in food chains; changes in the distribution of marine life; and more frequent diseases and pests among marine organisms. Study co-author John F Bruno, associate professor in marine science at The University of North Carolina, says greenhouse gas emissions are modifying many **physical and geochemical** aspects of the planet's oceans, in ways 'unprecedented in nearly a million years'. 'This is causing fundamental and comprehensive changes to the way marine ecosystems function,' Bruno warned, according to a GCI release.

### 2AC—AT: Feedbacks

**Positive feedbacks overwhelm negative ones.**

**Hansen 9** (James, Best known for bringing global warming to the world’s attention in the 1980s, when he first testified before Congress. An adjunct professor in the Department of Earth and Environmental Sciences at Columbia University and at Columbia’s Earth Institute, and director of the NASA Goddard Institute for Space Studies, he is frequently called to testify before Congress on climate issues, Storms of My Grandchildren, Published by Bloomsbury, Pg. 74)

Climate feedbacks interact with inertia. Feedbacks (as discussed in chapter 3) are responses to climate change that can either amplify or diminish the climate change. There is no inherent reason lor our climate to be dominated by amplifying feedbacks. Indeed, on very long time scales important diminishing feedbacks come into play (see chapters 8 and 10).

However, it turns out that amplifying feedbacks are **dominant** on time scales from decades to hundreds of thousands of years. Water (including water vapor, ice, and snow) plays a big role. A warmer planet has a brighter surface and absorbs less sunlight, mainly because of the high reflectivity of ice and snow surfaces. A warmer planet has more greenhouse gases in the air, especially water vapor, as well as darker vegetated land areas. Dominance of these two amplifying feedbacks, the planet's surface reflectivity and the amount of greenhouse gases in the air, is the reason climate whipsawed between glacial and interglacial states in response to small insolution changes caused by slight perturbations of Earth's orbit.

Amplifying feedbacks that were expected to occur only slowly have begun to come into play in the past few years. These feedbacks include significant reduction in ice sheets, release of greenhouse gases from melting permafrost and Arctic continental shelves, and movement of climatic zones with resulting changes in vegetation distributions. These feedbacks were not incorporated in most climate simulations, such as those of the Intergovernmental Panel on Climate Change (IPCC). Yet these "slow” feedbacks are already beg ginning to emerge in the real world.

Rats! **That is a problem**. Climate inertia causes more warming to the **in the pipeline.** Feedbacks will amplify that warming. So "inertia" was a Trojan horse-it only seemed like a friend. lt lulled us to sleep, and we did not see what was happening. Now we have a situation with big impacts on the horizon-possibly including **ice sheet collapse**, **ecosystem collapse**, and **species extinction**, the dangers of which I will discuss later.

### 2AC—AT: Food Ag

**Warming hurts yields and exacerbates hunger.**

**Cline 7** (William, Senior Fellow @ Peterson Institute for International Economcsi and Center for Global Development, International Economics, “Global warming losers: why developing world agriculture stands to suffer big time”, Vol. 21, No. 4, September 22, Lexis)

In recent years there has been a certain revisionism toward more benign diagnoses of prospective effects of global warming on agriculture. Some have argued that up to an additional 2[degrees]C or even 3[degrees]C in global mean surface temperatures would lead to global benefits rather than losses, because of improved growing conditions in cold regions and because of "carbon fertilization" from increased atmospheric concentrations of carbon dioxide (which is an input into the process of photosynthesis). At the same time, there has been a growing body of research indicating that the developing countries will be the ones to suffer most and earliest, because their predominantly low-latitude location makes their temperatures already close to or above levels at which additional warming reduces productivity. [ILLUSTRATION OMITTED] Research findings in recent years have provided a growing base of model estimates that can offer the basis for a more comprehensive andsystematic analysis of the impact of global warming on world agriculture than previously available. My new book makes such estimates for late in this century (the 2080s) at a geographically detailed level, with calculations for more than one hundred countries, regions, and sub-regions within the largest countries. This essay summarizes my findings and considers their implications for international policy. The first question is whether the world as a whole faces devastating agricultural losses. The answer turns out to be no, at least in the central estimate: there would be aggregate losses on net, but they would be modest to moderate. The second question is whether the developing countries would be at risk. The answer is a definite yes, especially in South Asia, Africa, and Latin America. Yet even here it turns out that there is a major caveat: the most important developing country of all for global warming policy, China, is about neutrally affected overall (despite potentially sizable losses in its South Centralregion). As political leaders in developing countries become more aware of these prospects, divisions could develop among them on the urgency of international action. Although the broad profile of these results is similar to the predominant evaluations in the Intergovernmental Panel on Climate Change,my study provides greater detail on a more systematic basis than previously available. It also takes account of both of the two alternative methods that have dominated past estimates, the crop-model approach and the so-called "Ricardian" agronomic estimates based on observedrelationships of land prices to climate. The first step in the analysis is to calculate detailed regional changes in temperature and precipitation to be expected from global warming. The IPCC provides data on the current climate at a detail of one-half degree latitude by one-half degree longitude (about 175,000 land-based "grid cells"). It also provides the results of six leading climate ("general circulation") models that indicate projected changes in temperature and precipitation at less-detailed geographical levels. I map each model's results to standardized detailed geographical areas and then take the averages to arrive at a "consensus climate projection." For this I use what I consider to be the most meaningful of the IPCC business-as-usual scenarios for carbon dioxide emissions ("A2," which calls for emissions to rise from about 7 billion tons of carbon annually today to about 30 billion tons by 2100 in the absenceof abatement measures). The resulting consensus estimates place average land surface warming at about 5[degrees]C by the 2080s. My estimates then apply two families of agricultural impact modelsto calculate the corresponding results for world agricultural productivity. The first comprises the crop-model estimates developed at agricultural research stations around the world and compiled by Cynthia Rosenzweig at Columbia University and her colleagues. These models take account of the faster pace of growing cycles and hence lesser grain-filling at higher temperatures, along with greater heat and water stress. They incorporate moderate adaptation, such as a change in cropmix and planting dates and increased irrigation in existing systems. The second is a set of "Ricardian" models developed by Robert Mendelsohn at Yale University and associated researchers at the World Bank. These models specifically relate net farm revenue or land price totemperature and precipitation, and include seasonal detail. The corresponding measures of change in agricultural productivity resulting from climate change are percent change in yield per hectare, in the crop models, and implied percent change in output per hectare, in the Ricardian models. A key decision in such estimates is how much benefit to allow for "carbon fertilization." Recent open-air experiments have shown only about half as much yield gain as earlier laboratory experiments. My estimates allow for a weighted-average 15 percent yield increase from the doubling of carbon dioxide in the atmosphere from today's levels by the 2080s (to 735 parts per million). My estimates take the average of the results obtained by applying the crop models and the Ricardian models to the detailed geographicalestimates of climate change by the 2080s. Aggregate world agricultural productivity would decline by an estimated 16 percent from baseline levels, if carbon fertilization is omitted, and by 3 percent if it is included (Table 1). Both sets of estimates are probably on the optimistic side, because they do not take account of losses due to increased pests or increased incidence of extreme weather events (including floods and drought). The Ricardian estimates implicitly assume that more water will be available for irrigation whereas in some regions (notably Africa) greater water scarcity is likely. Figure 1 displays the estimated impacts by country for the case without carbon fertilization. Potentially severe losses are evident in Latin America, Africa, Australia, and the Southern regions of the United States. As indicated in Table 1, the developing countries are hit much harder than the industrial countries. India shows the largest potential losses, at about 30 percent even if carbon fertilization gains are included. The typical (median) loss among developing countriesis 26 percent if carbon fertilization fails to materialize and 15 percent even if it does occur. The most intriguing exception is China, where losses are a modest 7 percent without carbon fertilization and there are comparable gainsif that effect is included. Within China, however, the regional distribution of losses is wide—as shown in Figure 1, losses could be as large as 15 percent in the South Central region in the case without carbon fertilization. In contrast to the potentially deep losses in developing countries, average effects are more moderate in industrial countries, ranging from a decline in output potential of about 6 percent without carbon fertilization but an increase of about 8 percent with carbon fertilization. So global warming will disproportionately cause damages to agriculture in developing countries. This asymmetry is amplified by the fact that agriculture constitutes a much larger fraction of GDP in developing countries than in industrial countries. The primary implication of these findings is that it would be a serious mistake to view agricultural effects of global warming as broadly benign. Some estimates, which use Ricardian models similar to those I applied, have suggested that by late in this century world agriculture could actually still be benefiting rather than experiencing losses from global warming. Close examination reveals that such estimates have tended to understate the extent of prospective warming and over-state the extent of carbon fertilization gains. It is also crucial to keep in mind that there is a lag of about thirty years between today's emissions and the time when the full extent of the resulting global warming arrives ("ocean thermal lag" associated with an initial period

 in which the deep ocean warms to reestablish equilibrium differential with surface temperatures). Indeed, my estimates are just a snapshot in time, and losses would be expected to grow more severe by early in the next century.

### 2AC—Politics DA

**No budget deal will be reached.**

**Tomasky 2/5**/13 (Michael, There Will Be No Budget Deal, http://www.thedailybeast.com/articles/2013/02/05/there-will-be-no-budget-deal.html)

We’re less than a month away now from the sequester, the beginning of the deep budget cuts that will kick in automatically if President Obama and Congress don’t come to a budget deal. I have a news flash for you: There is not going to be any deal in the next 25 days. And here’s another news flash: In the Republican tug-of-war between those who want to protect the Pentagon and those who want to cut spending and damn the consequences, it’s looking like the latter are winning. If they get their way, it’s also almost certain that the austerity the cuts induce will cost a lot of jobs and hurt the economy. So the only thing for Barack Obama to do now is **start agitating** to make sure the American public blames the right culpable party here.

First, a little info on the cuts and their predicted impact. These across-the-board cuts to defense programs and domestic discretionary programs (not to Social Security and entitlements) would start to take effect March 1, which the parties agreed to in the fiscal cliff deal. Over the next seven months, this would mean $55 billion in defense cuts and $27 billion in domestic cuts. Those are pretty steep cuts.

That’s austerity. Austerity, in difficult economic times, which these still are, is never good. Anything that takes money out of the economy isn’t good. This is the great paradox of the Republican position that “we” have to learn to live within our means. There’s never been more insidious nonsense put about the land. The only thing severe cutbacks would do is put the recovery at risk.

A New York Times editorial Monday noted that at least a million jobs might be lost, according to a Congressional Budget Office report, if the sequester cuts go into effect. To give you a point of comparison, the economy created 2.2 million jobs last year. And it was a decent year, no better. Imagine subtracting a million to 1.4 million from whatever positive number we get this year. That’s a pretty devastating hit.

Right now, though, it sounds as if that’s where the GOP wants to take us. The breadcrumbs are being dropped—senators and House members are allowing themselves to be quoted as saying that maybe this is just the medicine the country needs, even including the defense cuts.

This is an important change in momentum. Last year, Republicans generally sounded more alarmed about Pentagon cuts than about spending and the budget deficit. But now, that’s flipping. Oklahoma Sen. Tom Coburn said, “I think sequester is going to happen. I think the people want it to happen.” South Carolina GOP Congressman Mick Mulvaney said recently, “Gridlock is leading to spending reductions. If the government does nothing, spending goes down. We have to claim victory.”

There’s something quite amusing about this, as Forbes’s Loren Thompson wrote yesterday. In allowing these defense cuts to go through, Republicans would be harming their own constituents, because there are considerably more military bases and supply depots and the like in red states than in blue states. Thompson noted that there are two bases in Mulvaney’s district where thousands of employees could be furloughed or fired.

What’s going on here? Undoubtedly, they’re at the end of their rope. They came to Washington to cut spending. The sequester has been delayed twice. Enough already. This would be understandable if their positions weren’t so economically thickheaded. But it’s what they believe, or at least “believe.”

It’s hard to know what they really believe, and it’s the same old guessing game. One of two things is true. One, they so despise and distrust government spending that they really do believe no good can possibly come of it and so spending has to be sliced, and if tossing the Pentagon on the fire is the only way to get it started, well, so be it. Two, they know better, but they figure well, if the economy does tank because of our collective stupid action, Obama’s the president, he’ll get the blame.

Last year, Republicans generally sounded more alarmed about Pentagon cuts than about spending and the budget deficit. But now, that’s flipping.

On Tuesday afternoon, Obama called on the Republicans to pass a smaller package of cuts and revenues to tide us all over for a bit, and to extend the major deadline another few months. The Republicans have declared this idea dead on arrival, especially the revenue part. He did note in his remarks that inaction puts "the jobs of thousands of Americans" at risk, but he really should hammer this point home repeatedly in the coming days.

So what I would love more than anything is to see Obama go down to Mulvaney’s district in South Carolina and several other districts like it and say that if these cuts go through, it’s going to have a serious negative impact on the local economy.

Ideally, of course, there might be some kind of agreement, which I say not for anyone’s political sake but for the sake of America’s workers and the economy. The effect of these cuts would be real and bad. If nothing else, the best Obama can do is make sure that the American people know who’s at fault when the economy does tank. Not the loftiest aspiration, but it’s hard to be lofty when you’re being dragged through the sewer.

**Winners win and PC not key.**

**Hirsh 2/7**/13 (Michael, Chief correspondent for National Journal, Previously served as the senior editor and national economics correspondent for Newsweek, Overseas Press Club award for best magazine reporting from abroad in 2001 and for Newsweek’s coverage of the war on terror which also won a National Magazine Award, There’s No Such Thing as Political Capital, http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)

But the abrupt emergence of the immigration and gun control issues illustrates how suddenly shifts in mood can occur and how political interests can align in new ways just as suddenly. Indeed, the pseudo-concept of political capital masks a larger truth about Washington that is **kindergarten simple**: You just don’t know what you can do until you try. Or as Ornstein himself once wrote years ago, “**Winning wins**.” In theory, and in practice, depending on Obama’s handling of any particular issue, even in a polarized time, he could still deliver on a lot of his second-term goals, depending on his skill and the breaks. Unforeseen catalysts can appear, like Newtown. Epiphanies can dawn, such as when many Republican Party leaders suddenly woke up in panic to the huge disparity in the Hispanic vote.

Some political scientists who study the elusive calculus of how to pass legislation and run successful presidencies say that political capital is, at best, an empty concept, and that almost nothing in the academic literature successfully **quantifies or even defines it**. “It can refer to a very abstract thing, like a president’s popularity, but there’s no mechanism there. That makes it kind of useless,” says Richard Bensel, a government professor at Cornell University. Even Ornstein concedes that the calculus is far more complex than the term suggests. Winning on one issue often changes the calculation for the next issue; there is never any known amount of capital. “The idea here is, if an issue comes up where the conventional wisdom is that president is not going to get what he wants, and he gets it, then each time that happens, it changes the calculus of the other actors” Ornstein says. “If they think he’s going to win, they may change positions to get on the winning side. It’s a **bandwagon effect**.”

**Controversial fights ensure agenda success.**

**Dickerson 1/18**/13 (John, Chief Political Correspondent at the Slate, Political Director of CBS News, Covered Politics for Time Magazine for 12 Years, Previous White House Correspondent, Go for the Throat!, http://tinyurl.com/b7zvv4d)

On Monday, President Obama will preside over the grand reopening of his administration. It would be altogether fitting if he stepped to the microphone, looked down the mall, and let out a sigh: so many people expecting so much from a government that appears capable of so little. A second inaugural suggests new beginnings, but this one is being bookended by dead-end debates. Gridlock over the fiscal cliff preceded it and gridlock over the debt limit, sequester, and budget will follow. After the election, the same people are in power in all the branches of government and they don't get along. There's no indication that the president's clashes with House Republicans will end soon.

Inaugural speeches are supposed to be huge and stirring. Presidents haul our heroes onstage, from George Washington to Martin Luther King Jr. George W. Bush brought the Liberty Bell. They use history to make greatness and achievements seem like something you can just take down from the shelf. Americans are not stuck in the rut of the day.

But this might be too much for Obama’s second inaugural address: After the last four years, how do you call the nation and its elected representatives to common action while standing on the steps of a building where collective action goes to die? That **bipartisan** bag of tricks has been tried and it didn’t work. People don’t believe it. Congress' approval rating is 14 percent, the lowest in history. In a December Gallup poll, 77 percent of those asked said the way Washington works is doing “serious harm” to the country.

The challenge for President Obama’s speech is the challenge of his second term: how to be great when the **environment stinks**. Enhancing the president’s legacy requires something more than simply the clever application of predictable stratagems. Washington’s **partisan rancor**, the size of the problems facing government, and the limited amount of **time** before Obama is a lame duck all point to a single conclusion: The president who came into office speaking in lofty terms about **bipartisanship** and cooperation can only cement his legacy if he **destroys the GOP**. If he wants to transform American politics, he must **go for the throat**.

President Obama could, of course, resign himself to tending to the achievements of his first term. He'd make sure health care reform is implemented, nurse the economy back to health, and put the military on a new footing after two wars. But he's more ambitious than that. He ran for president as a one-term senator with no executive experience. In his first term, he pushed for the biggest overhaul of health care possible because, as he told his aides, he wanted to make history. He may already have made it. There's no question that he is already a president of consequence. But there's no sign he's content to ride out the second half of the game in the Barcalounger. He is approaching gun control, climate change, and immigration with wide and excited eyes. He's not going for caretaker.

How should the president proceed then, if he wants to be bold? The Barack Obama of the first administration might have approached the task by finding some Republicans to deal with and then start agreeing to some of their demands in hope that he would win some of their votes. It's the traditional approach. Perhaps he could add a good deal more schmoozing with lawmakers, too.

That's the old way. **He has abandoned that**. He doesn't think it will work and he doesn't have the time. As Obama explained in his last press conference, he thinks the Republicans are dead set on opposing him. They cannot be unchained by schmoozing. Even if Obama were wrong about Republican intransigence, other constraints will limit the chance for cooperation. Republican lawmakers worried about primary challenges in 2014 are not going to be willing partners. He probably has at most 18 months before people start dropping the lame-duck label in close proximity to his name.

Obama’s **only remaining option is to pulverize**. Whether he succeeds in passing legislation or not, given his ambitions, his goal should be to delegitimize his opponents. Through a series of **clarifying fights over controversial issues**, he can force Republicans to either side with their coalition's most extreme elements or cause a rift in the party that will leave it, at least temporarily, in disarray.

This theory of political transformation rests on the weaponization (and slight bastardization) of the work by Yale political scientist Stephen Skowronek. Skowronek has written extensively about what distinguishes transformational presidents from caretaker presidents. In order for a president to be transformational, the old order has to fall as the orthodoxies that kept it in power exhaust themselves. Obama's gambit in 2009 was to build a new post-partisan consensus. That didn't work, but by exploiting the weaknesses of today’s Republican Party, Obama has an opportunity to hasten the demise of the old order by increasing the political cost of having the GOP coalition defined by Second Amendment absolutists, **climate science deniers**, supporters of “self-deportation” and the pure no-tax wing.

### 2AC—Ice Age DA

**Plus there is no cooling.**

**Borenstein 9** (Seth, writer for the Associated Press, “Is the Earth cooling instead of warming? No way, statisticians say,” 10-31, houmatoday.com/apps/pbcs.dll/article?AID=/20091031/articles/910319962&template=printart)

Have you heard that the world is now cooling instead of warming? You may have seen some news reports on the Internet or heard about it from a provocative new book. Only one problem: It's not true, according to an analysis of the numbers done by several **independent statisticians** for The Associated Press. The case that the Earth might be cooling partly stems from recent weather. Last year was cooler than previous years. It's been a while since the super-hot years of 1998 and 2005. So is this a longer climate trend or just weather's normal ups and downs? In a blind test, the AP gave temperature data to four independent statisticians and asked them to look for trends, without telling them what the numbers represented. The experts found no true temperature declines over time. "If you look at the data and sort of cherry-pick a micro-trend within a bigger trend, that technique is particularly suspect," said John Grego, a professor of statistics at the University of South Carolina. Yet the idea that things are cooling has been repeated in opinion columns, a BBC news story posted on the Drudge Report and in a new book by the authors of the best-seller "Freakonomics." Last week, a poll by the Pew Research Center found that only 57 percent of Americans now believe there is strong scientific evidence for global warming, down from 77 percent in 2006. Global warming skeptics base their claims on an unusually hot year in 1998. Since then, they say, temperatures have dropped — thus, a cooling trend. But it's not that simple. Since 1998, temperatures have dipped, soared, fallen again and are now rising once more. Records kept by the British meteorological office and satellite data used by climate skeptics still show 1998 as the hottest year. However, data from the National Oceanic and Atmospheric Administration and NASA show 2005 has topped 1998. Published peer-reviewed scientific research generally cites temperatures measured by ground sensors, which are from NOAA, NASA and the British, more than the satellite data. The recent Internet chatter about cooling led NOAA's climate data center to re-examine its temperature data. It found no cooling trend. "The last 10 years are the warmest 10-year period of the modern record," said NOAA climate monitoring chief Deke Arndt. "Even if you analyze the trend during that 10 years, the trend is actually positive, which means warming." The AP sent expert statisticians NOAA's year-to-year ground temperature changes over 130 years and the 30 years of satellite-measured temperatures preferred by skeptics and gathered by scientists at the University of Alabama in Huntsville. Statisticians who analyzed the data found a distinct decades-long upward trend in the numbers, but could not find a significant drop in the past 10 years in either data set. The ups and downs during the last decade repeat random variability in data as far back as 1880. Saying there's a downward trend since 1998 is **not scientifically legitimate**, said David Peterson, a retired Duke University statistics professor and one of those analyzing the numbers. Identifying a downward trend is a case of "people coming at the data with preconceived notions," said Peterson, author of the book "Why Did They Do That? An Introduction to Forensic Decision Analysis." One prominent skeptic said that to find the cooling trend, the 30 years of satellite temperatures must be used. The satellite data tends to be cooler than the ground data. And key is making sure 1998 is part of the trend, he added. It's what happens within the past 10 years or so, not the overall average, that counts, contends Don Easterbrook, a Western Washington University geology professor and global warming skeptic. "I don't argue with you that the 10-year average for the past 10 years is higher than the previous 10 years," said Easterbrook, who has self-published some of his research. "We started the cooling trend after 1998. You're going to get a different line depending on which year you choose. "Should not the actual temperature be higher now than it was in 1998?" Easterbrook asked. "We can play the numbers games." That's the problem, some of the statisticians said. Grego produced three charts to show how choosing a starting date can alter perceptions. Using the skeptics' satellite data beginning in 1998, there is a "mild downward trend," he said. But doing that is "deceptive." The trend disappears if the analysis starts in 1997. And it trends upward if you begin in 1999, he said. Apart from the conflicting data analyses is the eyebrow-raising new book title from Steven D. Levitt and Stephen J. Dubner, "Super Freakonomics: Global Cooling, Patriotic Prostitutes and Why Suicide Bombers Should Buy Life Insurance." A line in the book says: "Then there's this little-discussed fact about global warming: While the drumbeat of doom has grown louder over the past several years, the average global temperature during that time has in fact decreased." That led to a sharp rebuke from the Union of Concerned Scientists, which said the book mischaracterizes climate science with "distorted statistics." Levitt, a University of Chicago economist, said he does not believe there is a cooling trend. He said the line was just an attempt to note the irony of a cool couple of years at a time of intense discussion of global warming. Levitt said he did not do any statistical analysis of temperatures, but "eyeballed" the numbers and noticed 2005 was hotter than the last couple of years. Levitt said the "cooling" reference in the book title refers more to ideas about trying to cool the Earth artificially. Statisticians say that in sizing up climate change, it's important to look at moving averages of about 10 years. They compare the average of 1999-2008 to the average of 2000-2009. In all data sets, 10-year moving averages have been higher in the last five years than in any previous years. "To talk about global cooling at the end of the hottest decade the planet has experienced in many thousands of years is **ridiculous**," said Ken Caldeira, a climate scientist at the Carnegie Institution at Stanford. Ben Santer, a climate scientist at the Department of Energy's Lawrence Livermore National Lab, called it "a concerted strategy to obfuscate and generate confusion in the minds of the public and policymakers" ahead of international climate talks in December in Copenhagen. President Barack Obama weighed in on the topic Friday at MIT. He said some opponents "make cynical claims that contradict the overwhelming scientific evidence when it comes to climate change — claims whose only purpose is to defeat or delay the change that we know is necessary." Earlier this year, climate scientists in two peer-reviewed publications statistically analyzed recent years' temperatures against claims of cooling and found them not valid. Not all skeptical scientists make the flat-out cooling argument. "It pretty much depends on when you start," wrote John Christy, the Alabama atmospheric scientist who collects the satellite data that skeptics use. He said in an e-mail that looking back 31 years, temperatures have gone up nearly three-quarters of a degree Fahrenheit (four-tenths of a degree Celsius). The last dozen years have been flat, and temperatures over the last eight years have declined a bit, he wrote. Oceans, which take longer to heat up and longer to cool, greatly influence short-term weather, causing temperatures to rise and fall temporarily on top of the overall steady warming trend, scientists say. The biggest example of that is El Nino. El Nino, a temporary warming of part of the Pacific Ocean, usually spikes global temperatures, scientists say. The two recent warm years, both 1998 and 2005, were El Nino years. The flip side of El Nino is La Nina, which lowers temperatures. A La Nina bloomed last year and temperatures slipped a bit, but 2008 was still the ninth hottest in 130 years of NOAA records. Of the 10 hottest years recorded by NOAA, eight have occurred since 2000, and after this year it will be nine because this year is on track to be the sixth-warmest on record. The current El Nino is forecast to get stronger, probably pushing global temperatures even higher next year, scientists say. NASA climate scientist Gavin Schmidt predicts 2010 may break a record, so a cooling trend "will be never talked about again."

**CO2 cant prevent an ice age.**

**Golub 1** (Leon, Senior Astrophysicist @ Harvard-Smithsonian Center for Astrophysics, and Jay Pasachoff, Director of the Hopkins Observatory @ Williams, “Nearest Star: The Surprising Science of Our Sun”, p. 215-216, Google Print)

It might be tempting to argue that, since the world is now undergoing a gradual decline in temperature based on the Milankovitch theory of ice ages, the man-made warming may prevent us from descending into another ice age. But there are several problems with this reasoning. First, the time scales involved are very different: the next ice age is coming, but it is thousands of years away, whereas the global warming due to fossil fuel burning is arriving very quickly, within a few decades. Human activity might then cause an enormous upswing in global temperature followed by a more drastic downturn than would otherwise have occurred. Moreover, the warming that is now either underway or imminent has not been intentional, but rather is a side effect of our efforts to produce energy for an industrial economy. Given our present rudimentary understanding of global climate, it would be difficult to produce a controlled, planned change. The likelihood that an unplanned, uncontrolled change would be beneficial is extremely low.

**Warming causes an ice age.**

**Hartmann 4** (Thomas, NYT Best-selling Author, “How Global Warming May Cause the Next Ice Age...”, <http://www.commondreams.org/views04/0130-11.htm>)

While global warming is being officially ignored by the political arm of the Bush administration, and Al Gore's recent conference on the topic during one of the coldest days of recent years provided joke fodder for conservative talk show hosts, the citizens of Europe and the Pentagon are taking a new look at the greatest danger such climate change could produce for the northern hemisphere - a sudden shift into a new ice age. What they're finding is not at all comforting. In quick summary, if enough cold, fresh water coming from the melting polar ice caps and the melting glaciers of Greenland flows into the northern Atlantic, it will shut down the Gulf Stream, which keeps Europe and northeastern North America warm. The worst-case scenario would be a full-blown return of the last ice age - in a period as short as 2 to 3 years from its onset - and the mid-case scenario would be a period like the "little ice age" of a few centuries ago that disrupted worldwide weather patterns leading to extremely harsh winters, droughts, worldwide desertification, crop failures, and wars around the world. Here's how it works. If you look at a globe, you'll see that the latitude of much of Europe and Scandinavia is the same as that of Alaska and permafrost-locked parts of northern Canada and central Siberia. Yet Europe has a climate more similar to that of the United States than northern Canada or Siberia. Why? It turns out that our warmth is the result of ocean currents that bring warm surface water up from the equator into northern regions that would otherwise be so cold that even in summer they'd be covered with ice. The current of greatest concern is often referred to as "The Great Conveyor Belt," which includes what we call the Gulf Stream. The Great Conveyor Belt, while shaped by the Coriolis effect of the Earth's rotation, is mostly driven by the greater force created by differences in water temperatures and salinity. The North Atlantic Ocean is saltier and colder than the Pacific, the result of it being so much smaller and locked into place by the Northern and Southern American Hemispheres on the west and Europe and Africa on the east. As a result, the warm water of the Great Conveyor Belt evaporates out of the North Atlantic leaving behind saltier waters, and the cold continental winds off the northern parts of North America cool the waters. Salty, cool waters settle to the bottom of the sea, most at a point a few hundred kilometers south of the southern tip of Greenland, producing a whirlpool of falling water that's 5 to 10 miles across. While the whirlpool rarely breaks the surface, during certain times of year it does produce an indentation and current in the ocean that can tilt ships and be seen from space (and may be what we see on the maps of ancient mariners). This falling column of cold, salt-laden water pours itself to the bottom of the Atlantic, where it forms an undersea river forty times larger than all the rivers on land combined, flowing south down to and around the southern tip of Africa, where it finally reaches the Pacific. Amazingly, the water is so deep and so dense (because of its cold and salinity) that it often doesn't surface in the Pacific for as much as a thousand years after it first sank in the North Atlantic off the coast of Greenland. The out-flowing undersea river of cold, salty water makes the level of the Atlantic slightly lower than that of the Pacific, drawing in a strong surface current of warm, fresher water from the Pacific to replace the outflow of the undersea river. This warmer, fresher water slides up through the South Atlantic, loops around North America where it's known as the Gulf Stream, and ends up off the coast of Europe. By the time it arrives near Greenland, it's cooled off and evaporated enough water to become cold and salty and sink to the ocean floor, providing a continuous feed for that deep-sea river flowing to the Pacific. These two flows - warm, fresher water in from the Pacific, which then grows salty and cools and sinks to form an exiting deep sea river - are known as the Great Conveyor Belt. Amazingly, the Great Conveyor Belt is only thing between comfortable summers and a permanent ice age for Europe and the eastern coast of North America. Much of this science was unknown as recently as twenty years ago. Then an international group of scientists went to Greenland and used newly developed drilling and sensing equipment to drill into some of the world's most ancient accessible glaciers. Their instruments were so sensitive that when they analyzed the ice core samples they brought up, they were able to look at individual years of snow. The results were shocking. Prior to the last decades, it was thought that the periods between glaciations and warmer times in North America, Europe, and North Asia were gradual. We knew from the fossil record that the Great Ice Age period began a few million years ago, and during those years there were times where for hundreds or thousands of years North America, Europe, and Siberia were covered with thick sheets of ice year-round. In between these icy times, there were periods when the glaciers thawed, bare land was exposed, forests grew, and land animals (including early humans) moved into these northern regions. Most scientists figured the transition time from icy to warm was gradual, lasting dozens to hundreds of years, and nobody was sure exactly what had caused it. (Variations in solar radiation were suspected, as were volcanic activity, along with early theories about the Great Conveyor Belt, which, until recently, was a poorly understood phenomenon.) Looking at the ice cores, however, scientists were shocked to discover that the transitions from ice age-like weather to contemporary-type weather usually took only two or three years. Something was flipping the weather of the planet back and forth with a rapidity that was startling. It turns out that the ice age versus temperate weather patterns weren't part of a smooth and linear process, like a dimmer slider for an overhead light bulb. They are part of a delicately balanced teeter-totter, which can exist in one state or the other, but transits through the middle stage almost overnight. They more resemble a light switch, which is off as you gradually and slowly lift it, until it hits a mid-point threshold or "breakover point" where suddenly the state is flipped from off to on and the light comes on. It appears that small (less that .1 percent) variations in solar energy happen in roughly 1500-year cycles. This cycle, for example, is what brought us the "Little Ice Age" that started around the year 1400 and dramatically cooled North America and Europe (we're now in the warming phase, recovering from that). When the ice in the Arctic Ocean is frozen solid and locked up, and the glaciers on Greenland are relatively stable, this variation warms and cools the Earth in a very small way, but doesn't affect the operation of the Great Conveyor Belt that brings moderating warm water into the North Atlantic. In millennia past, however, before the Arctic totally froze and locked up, and before some critical threshold amount of fresh water was locked up in the Greenland and other glaciers, these 1500-year variations in solar energy didn't just slightly warm up or cool down the weather for the landmasses bracketing the North Atlantic. They flipped on and off periods of total glaciation and periods of temperate weather. And these changes came suddenly. For early humans living in Europe 30,000 years ago - when the cave paintings in France were produced - the weather would be pretty much like it is today for well over a thousand years, giving people a chance to build culture to the point where they could produce art and reach across large territories. And then a particularly hard winter would hit. The spring would come late, and summer would never seem to really arrive, with the winter snows appearing as early as September. The next winter would be brutally cold, and the next spring didn't happen at all, with above-freezing temperatures only being reached for a few days during August and the snow never completely melting. After that, the summer never returned: for 1500 years the snow simply accumulated and accumulated, deeper and deeper, as the continent came to be covered with glaciers and humans either fled or died out. (Neanderthals, who dominated Europe until the end of these cycles, appear to have been better adapted to cold weather than Homo sapiens.) What brought on this sudden "disappearance of summer" period was that the warm-water currents of the Great Conveyor Belt had shut down. Once the Gulf Stream was no longer flowing, it only took a year or three for the last of the residual heat held in the North Atlantic Ocean to dissipate into the air over Europe, and then there was no more warmth to moderate the northern latitudes. When the summer stopped in the north, the rains stopped around the equator: At the same time Europe was plunged into an Ice Age, the Middle East and Africa were ravaged by drought and wind-driven firestorms. If the Great Conveyor Belt, which includes the Gulf Stream, were to stop flowing today, the result would be sudden and dramatic. Winter would set in for the eastern half of North America and all of Europe and Siberia, and never go away. Within three years, those regions would become uninhabitable and nearly two billion humans would starve, freeze to death, or have to relocate. Civilization as we know it probably couldn't withstand the impact of such a crushing blow. And, incredibly, the Great Conveyor Belt has hesitated a few times in the past decade. As William H. Calvin points out in one of the best books available on this topic ("A Brain For All Seasons: human evolution & abrupt climate change"): ".the abrupt cooling in the last warm period shows that a flip can occur in situations much like the present one. What could possibly halt the salt-conveyor belt that brings tropical heat so much farther north and limits the formation of ice sheets? Oceanographers are busy studying present-day failures of annual flushing, which give some perspective on the catastrophic failures of the past. "In the Labrador Sea, flushing failed during the 1970s, was strong again by 1990, and is now declining. In the Greenland Sea over the 1980s salt sinking declined by 80 percent. Obviously, local failures can occur without catastrophe - it's a question of how often and how widespread the failures are - but the present state of decline is not very reassuring." Most scientists involved in research on this topic agree that the culprit is global warming, melting the icebergs on Greenland and the Arctic icepack and thus flushing cold, fresh water down into the Greenland Sea from the north. When a critical threshold is reached, the climate will suddenly switch to an ice age that could last minimally 700 or so years, and maximally over 100,000 years. And when might that threshold be reached? Nobody knows - the action of the Great Conveyor Belt in defining ice ages was discovered only in the last decade. Preliminary computer models and scientists willing to speculate suggest the switch could flip as early as next year, or it may be generations from now. It may be wobbling right now, producing the extremes of weather we've seen in the past few years. What's almost certain is that if nothing is done about global warming, it will happen sooner rather than later.

**China won't invade the Russian Far East.**

**Harding, ‘9** [Luke, Writer for the Observer, "Russia fears embrace of giant eastern neighbour," 8/2, <http://www.guardian.co.uk/world/2009/aug/02/china-russia-relationship>]

Most experts believe China's own strategic goals do not include Russia's far east, or primitive territorial expansion. Instead Beijing's priorities lie elsewhere. They include development, reunification with Taiwan and internal stability, which experts suggest is more of a priority than ever following last month's ethnic riots against Han Chinese in Xinjiang. According to Dr Bobo Lo, a lecturer on Chinese-Russian relations at the Centre for European Reform, Beijing's real challenge to Moscow is rather different. He argues that the rise of China will lead to the "steady marginalisation of Russia from regional and global decision-making". The Chinese do not want to invade Russia militarily because, he points out, they would lose.

**China isn’t trying to retake the far east. This is just a paranoid fantasy.**

**The Guardian ‘9** (“Russia fears embrace of giant eastern neighbour”, 8-2, http://www.guardian.co.uk/world/2009/aug/02/china-russia-relationship)

Russia's far east has always been the most strategically vulnerable part of Moscow's fissiparous imperium, in what is the world's biggest country. Some 6,100km (3,800 miles) and an eight-hour flight from Moscow, the far east is home to just 6.5 million Russian citizens. Next door, across the Amur river in north-eastern China, there are 107 million Chinese. Given this demographic imbalance, there is a primordial fear in the Russian imagination that China will eventually try to steal back the Europe-sized far east of Russia - a region rich in mineral resources, trees, coal and fish. The salmon alone are an attractive target. A quarter of the world's Pacific salmon spawn in the volcanic Kamchatka peninsula. According to the Russian TV scenario, Beijing is furtively plotting to undo the Russian colonisation of the Pacific coastal region, started in the 18th century by tsarist-era adventurers. The area's original inhabitants were Chinese. These early nomads eked out a meagre living while dodging the tigers that still haunt the Sikhote-Alin mountains. In reality, the relationship is far more fascinating than the baseless fears of Russia's nationalists. Over the past decade the number of Chinese migrants working in Russia's far east has actually fallen. In Moscow, the authorities have recently shut down the capital's enormous Cherkizovsky market, turfing thousands of Chinese out of a job. The huge bazaar was home to Chinese traders selling billions of dollars-worth of grey-sector goods. (According to China's Xinhua agency, losses from Wenzhou in Zhejiang province alone amount to more than $800m, after Russian police confiscated their stocks.) Some 150 Chinese workers have been deported since the market was closed on 29 June. Most experts believe China's own strategic goals do not include Russia's far east, or primitive territorial expansion. Instead Beijing's priorities lie elsewhere. They include development, reunification with Taiwan and internal stability, which experts suggest is more of a priority than ever following last month's ethnic riots against Han Chinese in Xinjiang. According to Dr Bobo Lo, a lecturer on Chinese-Russian relations at the Centre for European Reform, Beijing's real challenge to Moscow is rather different. He argues that the rise of China will lead to the "steady marginalisation of Russia from regional and global decision-making". The Chinese do not want to invade Russia militarily because, he points out, they would lose.

**2AC—Security K**

**No prior questions.**

**Owen 2** (David, Reader of Political Theory at the University of Southampton, Reader of Political Theory at the Univ. of Southampton, Millennium Vol 31 No 3 p. 655-657)

Commenting on the ‘philosophical turn’ in IR, Wæver remarks that ‘[a] frenzy for words like “epistemology” and “ontology” often signals this philosophical turn’, although he goes on to comment that these terms are often used loosely.4 However, loosely deployed or not, it is clear that debates concerning ontology and epistemology play a central role in the contemporary IR theory wars. In one respect, this is unsurprising since it is a characteristic feature of the social sciences that periods of disciplinary disorientation involve recourse to reflection on the philosophical commitments of different theoretical approaches, and there is no doubt that such reflection can play a valuable role in making explicit the commitments that characterise (and help individuate) diverse theoretical positions. Yet, such a philosophical turn is not without its dangers and I will briefly mention three before turning to consider a confusion that has, I will suggest, helped to promote the IR theory wars by motivating this philosophical turn. The first danger with the philosophical turn is that it has an inbuilt tendency to **prioritize** issues of ontology and epistemology over explanatory and/or interpretive power as if the latter two were merely a **simple function** of the former. But while the explanatory and/or interpretive power of a theoretical account is not wholly independent of its ontological and/or epistemological commitments (otherwise criticism of these features would not be a criticism that had any value), it is by no means clear that it is, in contrast, wholly dependent on these philosophical commitme

nts. Thus, for example, one need not be sympathetic to rational choice theory to recognise that it can provide powerful accounts of certain kinds of problems, such as the tragedy of the commons in which dilemmas of collective action are foregrounded. It may, of course, be the case that the advocates of rational choice theory cannot give a good account of why this type of theory is powerful in accounting for this class of problems (i.e., how it is that the relevant actors come to exhibit features in these circumstances that approximate the assumptions of rational choice theory) and, if this is the case, it is a philosophical weakness—but this **does not undermine** the point that, for a certain class of problems, rational choice theory may **provide the best account** available to us.In other words, while the critical judgement of theoretical accounts in terms of their ontological and/or epistemological sophistication is one kind of critical judgement, it is not the only or even necessarily the **most important** kind. The second danger run by the philosophical turn is that because prioritisation of ontology and epistemology promotes theory-construction from philosophical first principles,it cultivates **a theory-driven** rather than problem-driven approach to IR. Paraphrasing Ian Shapiro, the point can be put like this: since it is the case that there is always a plurality of possible true descriptions of a given action, event or phenomenon, the challenge is to decide which is the most apt in terms of getting a perspicuous grip ontheaction**,** event or phenomenon in question given the purposes of the inquiry; yet, from this standpoint, ‘theory-driven work is part of a **reductionist program’** in that it ‘dictates always opting for the description that calls for the explanation that flows from the preferred modelor theory’. 5 The justification offered for this strategy rests on the mistaken belief that it is necessary for social science because general explanations are required to characterise the classes of phenomena studied in similar terms. However, as Shapiro points out,this is to misunderstand the enterprise of science since ‘whether there are general explanations for classes of phenomena is a question for social-scientific inquiry, not to be prejudgedbefore conducting that inquiry’.6 Moreover, this strategy easily slips into the promotion of the pursuit of **generality** overthat of empirical validity**.** The third danger is that the preceding two combine to encourage the formation of a particular image of disciplinary debate in IR—what might be called (only slightly tongue in cheek) ‘the Highlander view’—namely, an image of warring theoretical approaches with each, despite occasional temporary tactical alliances, dedicated to the strategic achievement of sovereignty over the disciplinary field. It encourages this view because the turn to, and prioritisation of, ontology and epistemology stimulates the idea that there can only be one theoretical approach which gets things right, namely, the theoretical approach that gets its ontology and epistemology right. This image feeds back into IR exacerbating the first and second dangers, and so a potentially **vicious circle arises.**

**Reps don't shape reality.**

**Balzacq 5** (Thierry, Professor of Political Science and International Relations at Namur University, “The Three Faces of Securitization: Political Agency, Audience and Context” European Journal of International Relations, London: Jun 2005, Volume 11, Issue 2)

However, despite important insights, this position remains highly disputable. The reason behind this qualification is not hard to understand. With great trepidation my contention is that one of the main distinctions we need to take into account while examining securitization is that between 'institutional' and 'brute' threats. In its attempts to follow a more radical approach to security problems wherein threats are institutional, that is, mere products of communicative relations between agents, the CS has neglected the importance of 'external or brute threats', that is, threats that **do not depend** on language mediation to be what they are - hazards for human life. In methodological terms, however, any framework over-emphasizing either institutional or brute threat risks losing sight of important aspects of a **multifaceted phenomenon**. Indeed, securitization, as suggested earlier, is successful when the securitizing agent and the audience reach a common structured perception of an ominous development. In this scheme, there is no security problem except through the language game. Therefore, how problems are 'out there' is exclusively contingent upon how we linguistically depict them. This is not always true. For one, language **does not construct** reality; at best, it shapes our perception of it. Moreover, it is **not theoretically useful** nor is it **empirically credible** to hold that what we say about a problem would determine its essence. For instance, what I say about a typhoon would not change its essence. The consequence of this position, which would require a deeper articulation, is that some security problems are the attribute of the development itself. In short, threats are not only institutional; some of them can actually wreck entire political communities **regardless of** the use of language. Analyzing security problems then becomes a matter of understanding how external contexts, including external objective developments, affect securitization. Thus, far from being a departure from constructivist approaches to security, external developments are central to it.

**The perm solves and the alt does not.**

**Murry 97** (Alastair J.H., Professor of Politics at the University of Wales, *Reconstructing Realism: Between Power Politics and Cosmopolitan Ethics*, p. 193-196)

For realism, man remains, in the final analysis, limited by himself. As such, it emphasizes caution, and focuses not merely upon the achievement of long-term objectives, but also upon the resolution of more immediate difficulties. Given that, in the absence of a resolution of such difficulties, longer-term objectives are liable to be unachievable, realism would seem to offer a more effective strategy of transition than reflectivism itself. Whereas, in constructivism, such strategies are divorced from the current realities of international politics altogether, realism’s emphasis on first addressing the **immediate obstacles** to development ensures that it at least generates strategies which offer us a **tangible path** to follow. If these strategies perhaps lack the visionary appeal of reflectivist proposals, emphasizing simply the necessity of a restrained, moderate diplomacy in order to ameliorate conflicts between states, to foster a degree of mutual understanding in international relations, and, ultimately, to develop a sense of community which might underlie a more comprehensive international society, they at least seek to take advantage of the possibilities of reform in the current international system without jeopardizing the possibilities of order. Realism’s gradualist reformism, the careful tending of what it regards as an essentially organic process, ultimately suggests the basis for a more sustainable strategy for reform than reflectivist perspectives, however dramatic, can offer. For the realist, then, if rationalist theories prove so conservative as to make their adoption problematic, critical theories prove so progressive as to make their **adoption unattractive**. If the former can justifiably be criticized for seeking to make a far from ideal order work more efficiently, thus perpetuating its existence and legitimating its errors, reflectivist theory can equally be criticized for searching for a tomorrow which **may never exist**, thereby endangering the possibility of establishing any form of stable order in the here and now. Realism’s distinctive contribution thus lies in its attempt to drive **a path between the two**, a path which, in the process, suggests the basis on which some form of **synthesis** between rationalism and reflectivism might be achieved. Oriented in its genesis towards addressing the shortcomings in an idealist transformatory project, it is centrally motivated by concern to reconcile vision with practicality, to relate utopia and reality. Unifying technical and a practical stance, it combines aspects of the positivist methodology employed by problem-solving theory with the interpretative stance adopted by critical theory, avoiding the monism of perspective which leads to the self-destructive conflict between the two. Ultimately, it can simultaneously acknowledge the possibility of change in the structure of the international system and the need to probe the limits of the possible, and yet also question the proximity of any international transformation, emphasize the persistence of problems after such a transformation, and serve as a reminder of the need to grasp whatever semblance of order can be obtained in the mean time. Indeed, it is possible to say that realism is uniquely suited to serve as such an orientation. Simultaneously to critique contemporary resolutions of the problem of political authority as unsatisfactory and yet to support them as an attainable measure of order in an unstable world involves one in a contradiction which is difficult to accept. Yet, because it grasps the essential ambiguity of the political, and adopts imperfectionism as its dominant motif, realism can relate these two tasks in a way which allows neither to predominate, achieving, if not a reconciliation, that is at least a viable synthesis. Perhaps the most famous realist refrain is that all politics are power politics. It is the all that is important here. Realism lays claim to a relevance across systems, and because it relies on a conception of human nature, rather than a historically specific structure of world politics, it can make good on this claim. If its observations about human nature are even remotely accurate, the problems that it addresses will transcend contingent formulations of the problem of political order. Even in a genuine cosmopolis, conflict might become technical, but it would not be eliminated altogether.67 The primary manifestations of power might become more economic or institutional rather than (para) military but, where disagreements occur and power exists, the employment of the one to ensure the satisfactory resolution of the other is inevitable short of a wholesale transformation of human behaviour. Power is ultimately of the essence of politics; it is not something which can be banished, only tamed and restrained. As a result, realism achieves a universal relevance to the problem of political action which allows it to relate the reformist zeal of critical theory, without which advance would be impossible, with the problem-solver’s **sensible caution** that, before reform is attempted, whatever measure of security is possible under contemporary conditions must first be ensured.

### 2AC—Navy Impact

**Sea level rise destroys Naval power projection.**

**Morello 11** (Lauren and Dina Fine Maron, Reporter at E&E Publishing, March 11, 2011, “Climate Change Poses Arctic Challenge for U.S. Navy,” <http://www.scientificamerican.com/article.cfm?id=climate-change-arctic-challenge-us-navy>)

Climate change will pose **major new hurdles** for U.S. naval forces, forcing the military to grapple with an emerging Arctic frontier, increasing demand for humanitarian aid and creating rising seas that could threaten **low-lying bases**, the National Academy of Sciences said yesterday. "Even the most moderate current trends in climate, if continued, will present new **national** [**security**](http://www.scientificamerican.com/topic.cfm?id=security) **challenges** for the the U.S. Navy, Marine Corps and Coast Guard," concludes a new academy report. "While the timing, degree and consequence of future climate change impacts remain uncertain, many changes are already underway in regions around the world ... and call for action by U.S. naval leadership in response." The analysis, conducted at the Navy's request, echoes similar reports authored by the Defense Department, the intelligence community and the Navy's own Task Force Climate Change. Much of its focus is on the far north, where rising temperatures are decreasing the portion of the oil- and gas- rich Arctic Ocean that is covered by sea ice. By 2030, ice-free periods during late summer could be long enough to create new sea lanes through the polar region, the new report says. Handling the expected crush of shipping and tourist traffic, along with increased oil and gas exploration and military activity by other nations, will require U.S. naval forces to **transform their fleets**, from officer training to the mix of ships they employ. That will be especially challenging because the United States' capacity to operate in the harsh polar environment has degraded since the end of the Cold War, the NAS report says. A case in point: the United States' aging fleet of of just three icebreakers capable of operating in the Arctic. Few ice-capable ships and no training One ship, the *Polar Star*, sits in a Seattle dock in "caretaker" status, undergoing repairs. The Coast Guard hopes to have the vessel back at sea by the end of 2013. The service plans to decommission another ship that is now operating, the Polar Sea, because needed engine repairs would be cost-prohibitive. Decommissioning the *Polar Sea* will also free up money needed to finish the *Polar Star*'s repairs. "As old as they are, and with what it costs to maintain and keep them up, we had to make some difficult choices," said a Coast Guard spokesman, Lt. Paul Rhynard. "With the funding we were given to fix them both, we could only effectively fix one." The service expects to take the *Polar Star* out of service at some point before the *Polar Sea* is seaworthy, leaving only one icebreaker, the *Healy*, in use. That ship was designed as a scientific research vessel and is less useful for military missions. The new report also calls for new programs to train Marine Corps units to survive and sustain themselves in the Arctic. "To my knowledge, we have almost backed out of this cold-[weather](http://www.scientificamerican.com/topic.cfm?id=weather) training," said Frank Bowman, a retired Navy admiral and co-chairman of the committee that wrote the science academy report. Opening up the Arctic isn't necessarily a recipe for increased conflict, the report says, but the prospect of tapping the region's oil and gas deposits, fisheries and potential new shipping lanes has created a "**complex and nuanced**" geopolitical situation. Several Arctic countries are entangled in long-running disputes over their maritime boundaries, including Canada and the United States, Canada and Denmark, and Norway and Russia.

**The Navy makes conflict impossible.**

**Conway 7** (James – General, US Marine Corps, Commandant of the Marine Corps, Gary Roughead – Admiral, U.S. Navy, Chief of Naval Operations, Thad Allen – Admiral, U.S. Coast Guard, Commandant of the Coast Guard, A Cooperative Strategy for 21st Century Seapower, http://www.navy.mil/maritime/MaritimeStrategy.pdf)

The world economy is tightly interconnected. Over the past four decades, total sea borne trade has more than quadrupled: 90% of world trade and two-thirds of its petroleum are transported by sea. The sea-lanes and supporting shore infrastructure are the lifelines of the modern global economy, visible and vulnerable symbols of the modern distribution system that relies on free transit through increasingly urbanized littoral regions. Expansion of the global system has increased the prosperity of many nations. Yet their continued growth may create increasing competition for resources and capital with other economic powers, transnational corporations and international organizations. Heightened popular expectations and increased competition for resources, coupled with scarcity, may encourage nations to exert wider claims of sovereignty over greater expanses of ocean, waterways, and natural resources—potentially **resulting in conflict**. Technology is rapidly expanding marine activities such as energy development, resource extraction, and other commercial activity in and under the oceans. Climate change is gradually opening up the waters of the Arctic, not only to new resource development, but also to new shipping routes that may reshape the global transport system. While these developments offer opportunities for growth, they are potential sources of competition and conflict for access and natural resources. Globalization is also shaping human migration patterns, health, education, culture, and the conduct of conflict. Conflicts are increasingly characterized by a hybrid blend of traditional and irregular tactics, decentralized planning and execution, and non-state actors using both simple and sophisticated technologies in innovative ways. Weak or corrupt governments, growing dissatisfaction among the disenfranchised, religious extremism, ethnic nationalism, and changing demographics—often spurred on by the uneven and sometimes unwelcome advances of globalization—exacerbate tensions and are contributors to conflict. Concurrently, a rising number of transnational actors and rogue states, emboldened and enabled with unprecedented access to the global stage, can cause systemic disruptions in an effort to increase their power and influence. Their actions, often designed to purposely incite conflict between other parties, will complicate attempts to defuse and allay regional conflict. Proliferation of weapons technology and information has increased the capacity of nation-states and transnational actors to challenge maritime access, evade accountability for attacks, and manipulate public perception. Asymmetric use of technology will pose a range of threats to the United States and its partners. Even more worrisome, the appetite for **nuclear** and other **weapons** of mass destruction is growing among nations and non-state antagonists. At the same time, attacks on legal, financial, and cyber systems can be equally, if not more, disruptive than kinetic weapons. The vast majority of the world’s population lives within a few hundred miles of the oceans. Social instability in increasingly crowded cities, many of which exist in already unstable parts of the world, has the potential to create significant disruptions. The effects of climate change may also amplify human suffering through catastrophic storms, loss of arable lands, and coastal flooding, could lead to loss of life, involuntary migration, social instability, and regional crises. Mass communications will highlight the drama of human suffering, and disadvantaged populations will be ever more painfully aware and less tolerant of their conditions. Extremist ideologies will become increasingly attractive to those in despair and bereft of opportunity. Criminal elements will also exploit this social instability. These conditions combine to create an uncertain future and cause us to think anew about how we view **seapower**. No one nation has the resources required to provide safety and security throughout the entire maritime domain. Increasingly, governments, non-governmental organizations, international organizations, and the private sector will form partnerships of common interest to counter these emerging threats. Maritime Strategic Concept This strategy reaffirms the use of seapower to influence actions and activities at sea and ashore. The expeditionary character and versatility of maritime forces provide the U.S. the asymmetric advantage of enlarging or contracting its military footprint in areas where access is denied or limited. Permanent or prolonged basing of our military forces overseas often has unintended economic, social or political repercussions. The sea is a vast maneuver space, where the presence of maritime forces can be adjusted as conditions dictate to enable flexible approaches to escalation, **de-escalation** and **deterrence of conflicts**. The speed, flexibility, agility and scalability of maritime forces provide joint or combined force commanders a range of options for responding to crises. Additionally, integrated maritime operations, either within formal alliance structures (such as the North Atlantic Treaty Organization) or more informal arrangements (such as the Global Maritime Partnership initiative), send powerful messages to would-be aggressors that we will act with others to ensure collective security and prosperity. United States seapower will be globally postured to secure our homeland and citizens from direct attack and to advance our interests around the world. As our security and prosperity are inextricably linked with those of others, U.S. maritime forces will be deployed to protect and sustain the **peaceful global system** comprised of interdependent networks of trade, finance, information, law, people and governance. We will employ the global reach, persistent presence, and operational flexibility inherent in U.S. seapower to accomplish six key tasks, or strategic imperatives. Where tensions are high or where we wish to demonstrate to our friends and allies our commitment to security and stability, U.S. maritime forces will be characterized by regionally concentrated, forward-deployed task forces with the combat power to **limit regional conflict**, **deter major power war,** and should deterrence fail, win our Nation’s wars as part of a joint or combined campaign. In addition, persistent, mission-tailored maritime forces will be globally distributed in order to contribute to homeland defense-in-depth, foster and sustain cooperative relationships with an expanding set of international partners, and prevent or mitigate disruptions and crises. Regionally Concentrated, Credible Combat Power Credible combat power will be continuously postured in the Western Pacific and the Arabian Gulf/Indian Ocean to protect our vital interests, assure our friends and allies of our continuing commitment to regional security, and deter and dissuade potential adversaries and peer competitors. This combat power can be selectively and rapidly repositioned to meet contingencies that may arise elsewhere. These forces will be sized and postured to fulfill the following strategic imperatives: Limit regional conflict with forward deployed, decisive maritime power. Today regional conflict has ramifications far beyond the area of conflict. Humanitarian crises, violence spreading across borders, pandemics, and the interruption of vital resources are all possible when regional crises erupt. While this strategy advocates a wide dispersal of networked maritime forces, we cannot be everywhere, and we cannot act to mitigate all regional conflict. Where conflict threatens the global system and our national interests, maritime forces will be ready to respond alongside other elements of national and multi-national power, to give political leaders a range of options for deterrence, escalation and de-escalation. Maritime forces that are persistently present and combat-ready provide the Nation’s primary forcible entry option in an era of declining access, even as they provide the means for this Nation to respond quickly to other crises. Whether over the horizon or powerfully arrayed in plain sight, maritime forces can deter the ambitions of regional aggressors, assure friends and allies, gain and maintain access, and protect our citizens while working to sustain the global order. Critical to this notion is the maintenance of a powerful fleet—ships, aircraft, Marine forces, and shore-based fleet activities—capable of selectively controlling the seas, projecting power ashore, and protecting friendly forces and civilian populations from attack. Deter major power war. No other disruption is as potentially disastrous to global stability as war among major powers. Maintenance and extension of this Nation’s comparative seapower advantage is a **key component** of **deterring major power war**. While war with another great power strikes many as improbable, the near-certainty of its ruinous effects demands that it be actively deterred using all elements of national power. The expeditionary character of maritime forces—our lethality, global reach, speed, endurance, ability to overcome barriers to access, and operational agility—provide the joint commander with a range of deterrent options. We will pursue an approach to deterrence that includes a credible and scalable ability to retaliate against aggressors conventionally, unconventionally, and with nuclear forces. Win our Nation’s wars. In times of war, our ability to impose local sea control, overcome challenges to access, force entry, and project and sustain power ashore, makes our maritime forces an **indispensable element** of the joint or combined force. This expeditionary advantage must be maintained because it provides joint and combined force commanders with freedom of maneuver. Reinforced by a robust sealift capability that can concentrate and sustain forces, sea control and power projection enable extended campaigns ashore.

## \*\*\* 1AR

### Ice Age

#### It's happened — warming is what puts us on the brink

**ABC Premium News in ‘7**

(Ashley Hall, “New northern ice age could send refugees to Aust", 10-5, L/N)

Australia is firming as the destination of choice for what are becoming known as climate change refugees. A new study from the Australian National University (ANU) has found that this country may not be as severely affected by a new ice age as countries in the Northern Hemisphere. ANU paleoclimatologist Timothy Barrows and his fellow researchers used a new dating technique that measures the radioactive elements in some rocks. Dr Barrows explains that Europe is at risk of a new ice age as a result of global warming. "There are some fears that warming in the Northern Hemisphere, particularly around the Greenland ice sheet, might cause quite a bit of meltwater to come into the North Atlantic Ocean," he said. "That might change the salinity of the water there and stop what's called 'the great conveyor belt of the oceans' forming deep water that releases an enormous amount of heat that keeps Europe out of an ice age, essentially. "So if global warming does stop this circulation from occurring, then we could potentially have a new ice age in Europe." Dr Barrows says this effect is similar to what happened about 12,900 years ago, when the earth experienced rapid cooling. "There was a collapse of an ice sheet over North America, which slowed this circulation down, and caused a mini ice age for 1,500 years in Europe," he said. He says a new ice age in the Northern Hemisphere is not far off. "You'd begin to feel the effects almost immediately and certainly within a century," he said.

#### We’ve already burned enough carbon to stave off the ice age — emissions reductions won’t help

**AFP in ‘7**

(“Global warming could delay next ice age: study”, 8-29, <http://www.terradaily.com/reports/Global_warming_could_delay_next_ice_age_study_999.html>)

Burning fossil fuels could postpone the next ice age by up to half a million years, researchers at a British university said Wednesday. Rising carbon dioxide levels in the atmosphere caused by burning fuels such as coal and oil may cause enough residual global warming to prevent its onset, said scientists from the University of Southampton in southern England. The world's oceans are absorbing carbon dioxide from the atmosphere but in doing so they are becoming more acidic, said a team led by Doctor Toby Tyrrell, which conducted research based on marine chemistry. This, in turn, dissolves the calcium carbonate in the shells produced by surface-dwelling marine organisms, adding even more carbon to the oceans. The outcome is elevated carbon dioxide levels for far longer than previously assumed, the scientists argued. Carbon dioxide stays in the atmosphere for between five and 200 years before being absorbed by the oceans, reckons the United Nations' Intergovernmental Panel on Climate Change. However, up to one-tenth of the carbon dioxide currently being emitted will remain in the air for at least 100,000 years, argued Tyrrell. "Our research shows why atmospheric carbon dioxide will not return to pre-industrial levels after we stop burning fossil fuels," said Tyrrell. "It shows that it if we use up all known fossil fuels it doesn't matter at what rate we burn them. "The result would be the same if we burned them at present rates or at more moderate rates; we would still get the same eventual ice-age-prevention result."

### 1AR—Economy

**Best polling proves.**

**Margolin 2/7**/13 (Emma, GOP base: Never compromise!, http://tv.msnbc.com/2013/02/07/gop-base-bucks-support-of-compromise/)

Pew Research Center poll, Jan 9-13, 2013. Q22. Just 36% of Republicans are for compromise, while 55% prefer leaders who stick to their positions.

Hats off to National Journal’s Ron Fournier, who on Thursday pointed out a staggering statistic that explains Washington’s partisan gridlock and the GOP’s rising unpopularity.

Only 36% of Republicans say they like elected officials who make compromises, reveals a Pew Research Center poll released last month. Another 55% say they like elected officials who stick to their positions.

These figures are largely unchanged from two years ago, before congressional gridlock brought the U.S. economy to the brink with protracted fights over the debt ceiling, the fiscal cliff, and now, over looming sequestration cuts. So it seems that those Republicans polled were either unaware of the last two years’ events in Washington, or were just unfazed by them.

But scarier still is that among conservative Republicans, about twice as many prefer politicians who stick to their positions as opposed to those who are willing to compromise (60% vs. 31%.)

“What these findings suggest,” writes Fournier, “is that the Republican Party is hostage to a hard-headed electorate that won’t let its leaders practice the basic art of politics.”

Public opinion of congressional Republicans has steadily soured since the GOP took the House in 2010, and launched into a seemingly never-ending fiscal war. Last month’s NBC News/Wall Street Journal poll found that 49% hold a negative view of the GOP–its highest negative rating in the survey since 2008. But given the party’s strong “no-compromise” coalition, maybe the Republican leadership isn’t entirely to blame.

“The sturdy no-compromise wing of the GOP has put its leadership in a destructive Catch-22,” writes Fournier. “Republican leaders fear that if they work with Democrats to fix the nation’s problems, GOP voters will punish them. But if they don’t compromise, President Obama and other Democratic leaders justifiably cast the GOP as obstructionist, and independent voters flee.”

**No incentive to compromise now.**

**Klein 2/5**/13 [Senior Editorial Writer The Washington Examiner [Philip Klein, Obama blinks on the sequester, GOP finally has upper hand, <http://washingtonexaminer.com/obama-blinks-on-the-sequester-gop-finally-has-upper-hand/article/2520598>]

In November 2011, President Obama lamented that “some in Congress are trying to undo these automatic spending cuts” that were part of that August’s deal to raise the debt limit. “My message to them is simple: No. I will veto any effort to get rid of those automatic spending cuts to domestic and defense spending. There will be no easy off ramps on this one.”

Now, it’s Obama who is looking for an off ramp. With the automatic spending cuts about to go into effect, the Associated Press reports, “President Barack Obama will ask Congress to come up with tens of billions of dollars in short-term spending cuts and tax revenue to put off the automatic across the board cuts that are scheduled to kick in March 1, White House officials said Tuesday.”

Ever since the election, Republicans have been frustrated by their lack of leverage against Obama. Taxes would have gone up by $4.5 trillion on Jan. 1 if nothing was done, so Republicans were forced to agree to limit the damage. If there were no increase in the debt limit, any economic chaos that followed would have allowed Obama to blame Republicans and distract attention from the problems posed by the nation’s mounting debt, so they agreed to suspend it — a strategy I had described as Maneuver X.

Now Republicans have turned the tables on Obama. If nothing happens by March 1, about $1 trillion worth of spending cuts will go into effect automatically. Ideally, Republicans don’t want the military spending cuts, and they have voted in the House to replace them with other cuts. But they can live with them if nothing happens. Coming off the fourth quarter in which the economy contracted by 0.1 percent and was hurt by defense cuts, Obama doesn’t want to have headlines of defense contractor layoffs eroding his political capital in the short window he has to advance his second term agenda.

His suggestion that Republicans agree to raise taxes again to delay the sequester is laughable — they have zero reason to do it. Either he agrees to spending cuts of an equal amount, or the sequester will kick in.

### 1AR—Winners Win

**Alternate theories of agenda success ignore key facts.**

**Dickerson 13** (John, Chief Political Correspondent at the Slate, Political Director of CBS News, Covered Politics for Time Magazine for 12 Years, Previous White House Correspondent, They Hate Me, They Really Hate Me, http://tinyurl.com/arlxupq)

When you are on the Fox News’ ticker for the wrong reasons, it's time to put things into context.

On the eve of the president's inauguration, I wrote a piece about what President Obama needs to do to be a transformational rather than caretaker president. I was using a very specific definition of transformational presidencies based on my reading of a theory of **political science** and the **president's own words** about transformational presidencies from the 2008 campaign. It was also based on these givens: The president is ambitious, has picked politically controversial goals, has little time to operate before he is dubbed a lame-duck president, and has written off working with Republicans. "Bloodier-minded when it comes to beating Republicans,” is how Jodi Kantor put it in the New York Times. Given **these facts**, there is **only one logical conclusion** for a president who wants to transform American politics: He must take on Republicans—aggressively.

For me, this was a **math problem** with an **unmistakable conclusion**. Some people thought I was giving the president my personal advice. No. My goal was to make a compelling argument based on the facts. I used words like "war" and “pulverize,” and some have responded with threats to me and my family. (“Go for his throat!” some have counseled, echoing the headline.) These words have also liberated some correspondents (USUALLY THE ONES THAT TYPE IN ALL CAPS!!!!) from reading the piece or reading it in the spirit in which it was written. But there were also almost 2,000 other words in the piece, which should put that provocative language in context. What's been lost in the news ticker and Twitter threats is the argument of the piece: This is the **only plausible path** for a bold, game-changing second term for a president who has positioned himself the way President Obama has. Indeed, the piece accurately anticipated the forceful line the president ultimately took in his inaugural address with his call for collective action and failure to reach out to Republicans. Brit Hume said Obama’s speech confirms for all time the president’s essential liberalism. The New Republic’s Noam Scheiber precisely identified the speech not merely as liberal but an argument for liberalism.

Some correspondents have asked why I didn't advocate that Obama embrace House GOP spending plans or some other immediate compromise, a more pleasant outcome than the prospect of even more conflict in Washington. There's **no evidence**, however, that the president is in a compromising mood. (Again, see second inaugural.) This piece was written from the viewpoint of the reality as it stands, not a more pleasing future we would all prefer to inhabit. That reality (and the initial piece) includes an unpleasant fact to some Republicans: The GOP is in a state of disequilibrium. For evidence of that disarray, I rely on Rep. Tom Cole, Sen. Rand Paul, participants at the House GOP retreat, and Ramesh Ponnuru at the National Review. (As I mentioned in the piece, Democrats have their own tensions, too.)

**Our argument is based in academia and cites empirics.**

**Dickerson 13** (John, Chief Political Correspondent at the Slate, Political Director of CBS News, Covered Politics for Time Magazine for 12 Years, Previous White House Correspondent, Go for the Throat!, http://tinyurl.com/b7zvv4d)

Obama’s only remaining option is to pulverize. Whether he succeeds in passing legislation or not, given his ambitions, his goal should be to delegitimize his opponents. Through a series of clarifying fights over controversial issues, he can force Republicans to either side with their coalition's most extreme elements or cause a rift in the party that will leave it, at least temporarily, in disarray.

This theory of political transformation rests on the weaponization (and slight bastardization) of the work by **Yale political scientist** Stephen Skowronek. Skowronek has written extensively about what distinguishes transformational presidents from caretaker presidents. In order for a president to be transformational, the old order has to fall as the orthodoxies that kept it in power exhaust themselves. Obama's gambit in 2009 was to build a new post-partisan consensus. That didn't work, but by exploiting the weaknesses of today’s Republican Party, Obama has an opportunity to hasten the demise of the old order by increasing the political cost of having the GOP coalition defined by Second Amendment absolutists, climate science deniers, supporters of “self-deportation” and the pure no-tax wing.

The president has the ambition and has picked a second-term agenda that can lead to clarifying fights. The next necessary condition for this theory to work rests on the Republican response. Obama needs two things from the GOP: overreaction and charismatic dissenters. They’re not going to give this to him willingly, of course, but mounting pressures in the party and the personal ambitions of individual players may offer it to him anyway. Indeed, Republicans are serving him some of this recipe already on gun control, immigration, and the broader issue of fiscal policy.

On gun control, the National Rifle Association has overreached. Its Web video mentioning the president's children crossed a line.\* The group’s dissembling about the point of the video and its message compounds the error. (The video was also wrong). The NRA is whipping up its members, closing ranks, and lashing out. This solidifies its base, but is not a strategy for wooing those who are not already engaged in the gun rights debate. It only appeals to those who already think the worst of the president. Republicans who want to oppose the president on policy grounds now have to make a decision: Do they want to be associated with a group that opposes, in such impolitic ways, measures like universal background checks that 70 to 80 percent of the public supports? Polling also suggests that women are more open to gun control measures than men. The NRA, by close association, risks further defining the Republican Party as the party of angry, white Southern men.

The president is also getting help from Republicans who are calling out the most extreme members of the coalition. New Jersey Gov. Chris Christie called the NRA video "reprehensible." Others who have national ambitions are going to have to follow suit. The president can rail about and call the GOP bad names, but that doesn't mean people are going to listen. He needs members inside the Republican tent to ratify his positions—or at least to stop marching in lockstep with the most controversial members of the GOP club. When Republicans with national ambitions make public splits with their party, this helps the president.

(There is a corollary: The president can’t lose the support of Democratic senators facing tough races in 2014. Opposition from within his own ranks undermines his attempt to paint the GOP as beyond the pale.)

If the Republican Party finds itself destabilized right now, it is in part because the president has already **implemented a version** of this strategy. In the 2012 campaign, the president successfully transformed the most intense conservative positions into liabilities on immigration and the role of government. Mitt Romney won the GOP nomination on a platform of “self-deportation” for illegal immigrants—and the Obama team never let Hispanics forget it. The Obama campaign also branded Republicans with Romney's ill-chosen words about 47 percent of Americans as the party of uncaring millionaires.

Now Republican presidential hopefuls like Chris Christie, Marco Rubio, and Bobby Jindal are trying to fix the party's image. There is a general scramble going on as the GOP looks for a formula to move from a party that relies on older white voters to one that can attract minorities and younger voters.

Out of fear for the long-term prospects of the GOP, some Republicans may be willing to partner with the president. That would actually mean progress on important issues facing the country, which would enhance Obama’s legacy. If not, the president will stir up a fracas between those in the Republican Party who believe it must show evolution on issues like immigration, gun control, or **climate change** and those who accuse those people of betraying party principles.

That fight will be loud and in the open—and in the short term unproductive. The president can stir up these fights by poking the fear among Republicans that the party is becoming defined by its most extreme elements, which will in turn provoke fear among the most faithful conservatives that weak-willed conservatives are bending to the popular mood. That will lead to more tin-eared, dooming declarations of absolutism like those made by conservatives who sought to define the difference between legitimate and illegitimate rape—and handed control of the Senate to Democrats along the way. For the public watching from the sidelines, these intramural fights will look confused and disconnected from their daily lives. (Lip-smacking Democrats don’t get too excited: This internal battle is the necessary precondition for a GOP rebirth, and the Democratic Party has its own tensions.)

This approach is not a path of gentle engagement. It **requires confrontation** and bright lines and tactics that are more aggressive than the president demonstrated in the first term. He can't turn into a snarling hack. The posture is probably one similar to his official second-term photograph: smiling, but with arms crossed.

The president already appears to be headed down this path. He has admitted he’s not going to spend much time improving his schmoozing skills; he's going to get outside of Washington to ratchet up public pressure on Republicans. He is transforming his successful political operation into a governing operation. It will have his legacy and agenda in mind—and it won’t be affiliated with the Democratic National Committee, so it will be able to accept essentially unlimited donations. The president tried to use his political arm this way after the 2008 election, but he was constrained by re-election and his early promises of bipartisanship. No more. Those days are done.

Presidents don’t usually sow discord in their inaugural addresses, though the challenge of writing a speech in which the call for compromise doesn’t evaporate faster than the air out of the president’s mouth might inspire him to shake things up a bit. If it doesn’t, and he tries to conjure our better angels or summon past American heroes, then it will be among the most forgettable speeches, because the next day he’s going to return to pitched political battle. He has no time to waste.

**This is uniquely true in the current political environment.**

**Hirsh 2/7**/13 (Michael, Chief correspondent for National Journal, Previously served as the senior editor and national economics correspondent for Newsweek, Overseas Press Club award for best magazine reporting from abroad in 2001 and for Newsweek’s coverage of the war on terror which also won a National Magazine Award, There’s No Such Thing as Political Capital, http://www.nationaljournal.com/magazine/there-s-no-such-thing-as-political-capital-20130207)

On Tuesday, in his State of the Union address, President Obama will do what every president does this time of year. For about 60 minutes, he will lay out a sprawling and ambitious wish list highlighted by gun control and immigration reform, climate change and debt reduction. In response, the pundits will do what they always do this time of year: They will talk about how unrealistic most of the proposals are, discussions often informed by sagacious reckonings of how much “political capital” Obama possesses to push his program through.

Most of this talk **will have no bearing** on what actually happens over the next four years.

Consider this: Three months ago, just before the November election, if someone had talked seriously about Obama having enough political capital to oversee passage of both immigration reform and ***gun-control*** legislation at the beginning of his second term—even after winning the election by 4 percentage points and 5 million votes (the actual final tally)—this person would have been called crazy and stripped of his pundit’s license. (It doesn’t exist, but it ought to.) In his first term, in a starkly polarized country, the president had been so frustrated by GOP resistance that he finally issued a limited executive order last August permitting immigrants who entered the country illegally as children to work without fear of deportation for at least two years. Obama didn’t dare to even bring up gun control, a Democratic “third rail” that has cost the party elections and that actually might have been even less popular on the right than the president’s health care law. And yet, for reasons that have very little to do with Obama’s personal prestige or popularity—variously put in terms of a “mandate” or “political capital”—chances are fair that both will now happen.

What changed? In the case of gun control, of course, it wasn’t the election. It was the horror of the 20 first-graders who were slaughtered in Newtown, Conn., in mid-December. The sickening reality of little girls and boys riddled with bullets from a high-capacity assault weapon seemed to precipitate a sudden tipping point in the national conscience. One thing changed after another. Wayne LaPierre of the National Rifle Association marginalized himself with poorly chosen comments soon after the massacre. The pro-gun lobby, once a phalanx of opposition, began to fissure into reasonables and crazies. Former Rep. Gabrielle Giffords, D-Ariz., who was shot in the head two years ago and is still struggling to speak and walk, started a PAC with her husband to appeal to the moderate middle of gun owners. Then she gave riveting and poignant testimony to the Senate, challenging lawmakers: “Be bold.”

As a result, momentum has appeared to build around some kind of a plan to curtail sales of the most dangerous weapons and ammunition and the way people are permitted to buy them. It’s impossible to say now whether such a bill will pass and, if it does, whether it will make anything more than cosmetic changes to gun laws. But one thing is clear: The political tectonics have shifted dramatically **in very little time**. Whole new possibilities exist now that didn’t a few weeks ago.

Meanwhile, the Republican members of the Senate’s so-called Gang of Eight are pushing hard for a new spirit of compromise on ***immigration*** reform, a sharp change after an election year in which the GOP standard-bearer declared he would make life so miserable for the 11 million illegal immigrants in the U.S. that they would “self-deport.” But this turnaround has very little to do with Obama’s personal influence—his political mandate, as it were. It has almost entirely to do with just two numbers: 71 and 27. That’s 71 percent for Obama, 27 percent for Mitt Romney, the breakdown of the Hispanic vote in the 2012 presidential election. Obama drove home his advantage by giving a speech on immigration reform on Jan. 29 at a Hispanic-dominated high school in Nevada, a swing state he won by a surprising 8 percentage points in November. But the movement on immigration has mainly come out of the Republican Party’s recent introspection, and the realization by its more thoughtful members, such as Sen. Marco Rubio of Florida and Gov. Bobby Jindal of Louisiana, that without such a shift the party may be facing demographic death in a country where the 2010 census showed, for the first time, that white births have fallen into the minority. It’s got nothing to do with Obama’s political capital or, indeed, Obama at all.

The point is not that “political capital” is a meaningless term. Often it is a synonym for “mandate” or “momentum” in the aftermath of a decisive election—and just about every politician ever elected has tried to claim more of a mandate than he actually has. Certainly, Obama can say that because he was elected and Romney wasn’t, he has a better claim on the country’s mood and direction. Many pundits still defend political capital as a useful metaphor at least. “It’s an unquantifiable but meaningful concept,” says Norman Ornstein of the American Enterprise Institute. “You can’t really look at a president and say he’s got 37 ounces of political capital. But the fact is, it’s a concept that matters, if you have popularity and some momentum on your side.”

The real problem is that the idea of political capital—or mandates, or momentum—is so poorly defined that presidents and pundits often get it wrong. “Presidents usually over-estimate it,” says George Edwards, a presidential scholar at Texas A&M University. “The best kind of political capital—some sense of an electoral mandate to do something—is very rare. It almost never happens. In 1964, maybe. And to some degree in 1980.” For that reason, political capital is a concept that misleads far more than it enlightens. It is distortionary. It conveys the idea that we know more than we really do about the ever-elusive concept of political power, and it discounts the way unforeseen events can suddenly change everything. Instead, it suggests, erroneously, that a political figure has a concrete amount of political capital to invest, just as someone might have real investment capital—that a particular leader can bank his gains, and the size of his account determines what he can do at any given moment in history.

Naturally, any president has practical and electoral limits. Does he have a majority in both chambers of Congress and a cohesive coalition behind him? Obama has neither at present. And unless a surge in the economy—at the moment, still stuck—or some other great victory gives him more momentum, it is inevitable that the closer Obama gets to the 2014 election, the less he will be able to get done. Going into the midterms, Republicans will increasingly avoid any concessions that make him (and the Democrats) stronger.

But the abrupt emergence of the immigration and gun-control issues illustrates how suddenly shifts in mood can occur and how political interests can align in new ways just as suddenly. Indeed, the pseudo-concept of political capital masks a larger truth about Washington that is kindergarten simple: You just don’t know what you can do until you try. Or as Ornstein himself once wrote years ago, “Winning wins.” In theory, and in practice, depending on Obama’s handling of any particular issue, even in a polarized time, he could still deliver on a lot of his second-term goals, depending on his skill and the breaks. Unforeseen catalysts can appear, like Newtown. Epiphanies can dawn, such as when many Republican Party leaders suddenly woke up in panic to the huge disparity in the Hispanic vote.

Some political scientists who study the elusive calculus of how to pass legislation and run successful presidencies say that political capital is, at best, an empty concept, and that almost nothing in the academic literature successfully quantifies or even defines it. “It can refer to a very abstract thing, like a president’s popularity, but there’s no mechanism there. That makes it kind of useless,” says Richard Bensel, a government professor at Cornell University. Even Ornstein concedes that the calculus is far more complex than the term suggests. Winning on one issue often changes the calculation for the next issue; there is never any known amount of capital. “The idea here is, if an issue comes up where the conventional wisdom is that president is not going to get what he wants, and he gets it, then each time that happens, it changes the calculus of the other actors” Ornstein says. “If they think he’s going to win, they may change positions to get on the winning side. It’s a bandwagon effect.”

ALL THE WAY WITH LBJ

Sometimes, a clever practitioner of power can get more done just because he’s aggressive and knows the hallways of Congress well. Texas A&M’s Edwards is right to say that the outcome of the 1964 election, Lyndon Johnson’s landslide victory over Barry Goldwater, was one of the few that conveyed a mandate. But one of the main reasons for that mandate (in addition to Goldwater’s ineptitude as a candidate) was President Johnson’s masterful use of power leading up to that election, and his ability to get far more done than anyone thought possible, given his limited political capital. In the newest volume in his exhaustive study of LBJ, The Passage of Power, historian Robert Caro recalls Johnson getting cautionary advice after he assumed the presidency from the assassinated John F. Kennedy in late 1963. Don’t focus on a long-stalled civil-rights bill, advisers told him, because it might jeopardize Southern lawmakers’ support for a tax cut and appropriations bills the president needed. “One of the wise, practical people around the table [said that] the presidency has only a certain amount of coinage to expend, and you oughtn’t to expend it on this,” Caro writes. (Coinage, of course, was what political capital was called in those days.) Johnson replied, “Well, what the hell’s the presidency for?”

Johnson didn’t worry about coinage, and he got the Civil Rights Act enacted, along with much else: Medicare, a tax cut, antipoverty programs. He appeared to understand not just the ways of Congress but also the way to maximize the momentum he possessed in the lingering mood of national grief and determination by picking the right issues, as Caro records. “Momentum is not a mysterious mistress,” LBJ said. “It is a controllable fact of political life.” Johnson had the skill and wherewithal to realize that, at that moment of history, he could have unlimited coinage if he handled the politics right. He did. (At least until Vietnam, that is.)

And then there are the presidents who get the politics, and the issues, wrong. It was the last president before Obama who was just starting a second term, George W. Bush, who really revived the claim of political capital, which he was very fond of wielding. Then Bush promptly demonstrated that he didn’t fully understand the concept either.

At his first news conference after his 2004 victory, a confident-sounding Bush declared, “I earned capital in the campaign, political capital, and now I intend to spend it. That’s my style.” The 43rd president threw all of his political capital at an overriding passion: the partial privatization of Social Security. He mounted a full-bore public-relations campaign that included town-hall meetings across the country.

Bush failed utterly, of course. But the problem was not that he didn’t have enough political capital. Yes, he may have overestimated his standing. Bush’s margin over John Kerry was thin—helped along by a bumbling Kerry campaign that was almost the mirror image of Romney’s gaffe-filled failure this time—but that was not the real mistake. The problem was that whatever credibility or stature Bush thought he had earned as a newly reelected president did nothing to make Social Security privatization a better idea in most people’s eyes. Voters didn’t trust the plan, and four years later, at the end of Bush’s term, the stock-market collapse bore out the public’s skepticism. Privatization just didn’t have any momentum behind it, no matter who was pushing it or how much capital Bush spent to sell it.

The mistake that Bush made with Social Security, says John Sides, an associate professor of political science at George Washington University and a well-followed political blogger, “was that just because he won an election, he thought he had a green light. But there was no sense of any kind of public urgency on Social Security reform. It’s like he went into the garage where various Republican policy ideas were hanging up and picked one. I don’t think Obama’s going to make that mistake.… Bush decided he wanted to push a rock up a hill. He didn’t understand how steep the hill was. I think Obama has more momentum on his side because of the Republican Party’s concerns about the Latino vote and the shooting at Newtown.” Obama may also get his way on the debt ceiling, not because of his reelection, Sides says, “but because Republicans are beginning to doubt whether taking a hard line on fiscal policy is a good idea,” as the party suffers in the polls.

THE REAL LIMITS ON POWER

Presidents are limited in what they can do by time and attention span, of course, just as much as they are by electoral balances in the House and Senate. But this, too, has nothing to do with political capital. Another well-worn meme of recent years was that Obama used up too much political capital passing the health care law in his first term. But the real problem was that the plan was unpopular, the economy was bad, and the president didn’t realize that the national mood (yes, again, the national mood) was at a tipping point against big-government intervention, with the tea-party revolt about to burst on the scene. For Americans in 2009 and 2010—haunted by too many rounds of layoffs, appalled by the Wall Street bailout, aghast at the amount of federal spending that never seemed to find its way into their pockets—government-imposed health care coverage was simply an intervention too far. So was the idea of another economic stimulus. Cue the tea party and what ensued: two titanic fights over the debt ceiling. Obama, like Bush, had settled on pushing an issue that was out of sync with the country’s mood.

Unlike Bush, Obama did ultimately get his idea passed. But the bigger political problem with health care reform was that it distracted the government’s attention from other issues that people cared about more urgently, such as the need to jump-start the economy and financial reform. Various congressional staffers told me at the time that their bosses didn’t really have the time to understand how the Wall Street lobby was riddling the Dodd-Frank financial-reform legislation with loopholes. Health care was sucking all the oxygen out of the room, the aides said.

Weighing the imponderables of momentum, the often-mystical calculations about when the historic moment is ripe for an issue, will never be a science. It is mainly intuition, and its best practitioners have a long history in American politics. This is a tale told well in Steven Spielberg’s hit movie Lincoln. Daniel Day-Lewis’s Abraham Lincoln attempts a lot of behind-the-scenes vote-buying to win passage of the 13th Amendment, banning slavery, along with eloquent attempts to move people’s hearts and minds. He appears to be using the political capital of his reelection and the turning of the tide in the Civil War. But it’s clear that a surge of conscience, a sense of the changing times, has as much to do with the final vote as all the backroom horse-trading. “The reason I think the idea of political capital is kind of distorting is that it implies you have chits you can give out to people. It really oversimplifies why you elect politicians, or why they can do what Lincoln did,” says Tommy Bruce, a former political consultant in Washington.

Consider, as another example, the storied political career of President Franklin Roosevelt. Because the mood was ripe for dramatic change in the depths of the Great Depression, FDR was able to push an astonishing array of New Deal programs through a largely compliant Congress, assuming what some described as near-dictatorial powers. But in his second term, full of confidence because of a landslide victory in 1936 that brought in unprecedented Democratic majorities in the House and Senate, Roosevelt overreached with his infamous Court-packing proposal. All of a sudden, the political capital that experts thought was limitless disappeared. FDR’s plan to expand the Supreme Court by putting in his judicial allies abruptly created an unanticipated wall of opposition from newly reunited Republicans and conservative Southern Democrats. FDR thus inadvertently handed back to Congress, especially to the Senate, the power and influence he had seized in his first term. Sure, Roosevelt had loads of popularity and momentum in 1937. He seemed to have a bank vault full of political capital. But, once again, a president simply chose to take on the wrong issue at the wrong time; this time, instead of most of the political interests in the country aligning his way, they opposed him. Roosevelt didn’t fully recover until World War II, despite two more election victories.

In terms of Obama’s second-term agenda, what all these shifting tides of momentum and political calculation mean is this: **Anything goes**. Obama has no more elections to win, and he needs to worry only about the support he will have in the House and Senate after 2014. But if he picks issues that the country’s mood will support—such as, perhaps, immigration reform and gun control—there is no reason to think he can’t win **far more victories than** any of the careful calculators of political capital now believe is possible, including battles over tax reform and deficit reduction.

Amid today’s atmosphere of Republican self-doubt, a new, more mature Obama seems to be emerging, one who has his agenda clearly in mind and will ride the mood of the country more adroitly. If he can get some **early wins**—as he already has, apparently, on the fiscal cliff and the upper-income tax increase—that will create momentum, and **one win may well lead to others**. “Winning wins.”

Obama himself learned some hard lessons over the past four years about the falsity of the political-capital concept. Despite his decisive victory over John McCain in 2008, he fumbled the selling of his $787 billion stimulus plan by portraying himself naively as a “post-partisan” president who somehow had been given the electoral mandate to be all things to all people. So Obama tried to sell his stimulus as a long-term restructuring plan that would “lay the groundwork for long-term economic growth.” The president thus fed GOP suspicions that he was just another big-government liberal. Had he understood better that the country was digging in against yet more government intervention and had sold the stimulus as what it mainly was—a giant shot of adrenalin to an economy with a stopped heart, a pure emergency measure—he might well have escaped the worst of the backlash. But by laying on ambitious programs, and following up quickly with his health care plan, he only sealed his reputation on the right as a closet socialist.

After that, Obama’s public posturing provoked automatic opposition from the GOP, no matter what he said. If the president put his personal imprimatur on any plan—from deficit reduction, to health care, to immigration reform—Republicans were virtually guaranteed to come out against it. But this year, when he sought to exploit the chastened GOP’s newfound willingness to compromise on immigration, his approach was different. He seemed to understand that the Republicans needed to reclaim immigration reform as their own issue, and he was willing to let them have some credit. When he mounted his bully pulpit in Nevada, he delivered another new message as well: You Republicans don’t have to listen to what I say anymore. And don’t worry about who’s got the political capital. Just take a hard look at where I’m saying this: in a state you were supposed to have won but lost because of the rising Hispanic vote.

Obama was cleverly pointing the GOP toward conclusions that he knows it is already reaching on its own: If you, the Republicans, want to have any kind of a future in a vastly changed electoral map, you have no choice but to move. It’s your choice.

The future is wide open.

**Prefer evidence that accounts for the bandwagon effect.**

**Green 10** (David Michael, Professor of Political Science at Hofstra University, The Do-Nothing 44th President, June 12th, http://tinyurl.com/axspsc4)

Yet, on the other hand, Bush and Cheney had far less than nothing to sell when it came to the Iraq war - indeed, they had nothing but lies - and their team handled that masterfully. The **fundamental characteristic** of the Obama presidency is that the president is a reactive object, essentially the victim of events and other political forces, rather than the single greatest center of power in the country, and arguably on the planet. He is the Mr. Bill of politicians. People sometimes excuse the Obama torpor by making reference to all the problems on his plate, and all the enemies at his gate. But what they fail to understand - and, most crucially, what he fails to understand - is the nature of the modern presidency. Successful presidents today (by which I mean those who get what they want) not only drive outcomes in their preferred direction, but shape the very character of the debate itself. And they not only shape the character of the debate, but they determine which items are on the docket. Moreover, there is a continuously evolving and **reciprocal relationship** between presidential boldness and achievement. In the same way that **nothing** breeds success like success, nothing sets the president up for achieving his or her next goal better than succeeding dramatically on the last go around. This is absolutely a matter of perception, and you can see it best in the way that Congress and especially the Washington press corps fawn over bold and intimidating presidents like Reagan and George W. Bush. The political teams surrounding these presidents understood the psychology of power all too well. They knew that by simultaneously creating a **steamroller effect** and feigning a **clubby atmosphere** for Congress and the press, they could leave such hapless hangers-on with only one remaining way to pretend to preserve their dignities. By **jumping on board** the freight train, they could be given the illusion of being next to power, of being part of the **winning team**. And so, with virtually the sole exception of the now retired Helen Thomas, this is precisely what they did. But the game of successfully governing is substantive as well as psychological. More often than not, timidity turns out not to yield the safe course anticipated by those with weak knees, but rather their subsequent undoing. The three cases mentioned at the top of this essay are paradigmatic.