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#### Focus on energy production produces chronic failure. Energy becomes an end-in-itself with no social or ethical guidance.

Byrne and Toly 6—\*John Byrne, Director Center for Energy and Environmental Policy & Public Policy at Delaware and \*\*Noah Toly, Research Associate Center for Energy and Environmental Policy [*Transforming Power* eds. Byrne, Toly, & Glover p. 20-21] **[Gender paraphrased]**

The Technique of Modern Energy Governance While moderns usually declare strong preferences for democratic governance, their preoccupation with technique and efficiency may preclude the achievement of such ambitions, or require changes in the meaning of democracy that are so extensive as to raise doubts about its coherence. A veneration of technical monuments typifies both conventional and sustainable energy strategies and reflects a shared belief in technological advance as commensurate with, and even a cause of, contemporary social progress. The modern proclivity to search for human destiny in the march of scientific discovery has led some to warn of a technological politics (Ellul, 1997a, 1997b, 1997c; Winner, 1977, 1986) in which social values are sublimated by the objective norms of technical success (e.g., the celebration of efficiency in all things). In this politics, technology and its use become the end of society and members have the responsibility, as rational beings, to learn from the technical milieu what should be valorized. An encroaching autonomy of technique (Ellul, 1964: 133- 146) replaces critical thinking about modern life with an awed sense and acceptance of its inevitable reality. From dreams of endless energy provided by Green Fossil Fuels and Giant Power, to the utopian promises of Big Wind and Small-Is-Beautiful Solar, technical excellence powers modernist energy transitions. Refinement of technical accomplishments and/or technological revolutions are conceived to drive social transformation, despite the unending inequality that has accompanied two centuries of modern energy's social project. As one observer has noted (Roszak, 1972: 479), the "great paradox of the technological mystique [is] its remarkable ability to grow strong by chronic failure. While the treachery of our technology may provide many occasions for disenchantment, the sum total of failures has the effect of increasing dependence on technical expertise." Even the vanguard of a sustainable energy transition seems swayed by the magnetism of technical acumen, leading to the result that enthusiast and critic alike embrace a strain of technological politics. Necessarily, the elevation of technique in both strategies to authoritative status vests political power in experts most familiar with energy technologies and systems. Such a governance structure derives from the democratic-authoritarian bargain described by Mumford ( 1964). Governance "by the people" consists of authorizing qualified experts to assist political leaders in finding the efficient, modern solution. In the narratives of both conventional and sustainable energy, citizens are empowered to consume the products of the energy regime while largely divesting themselves of authority to govern its operations. Indeed, systems of the sort envisioned by advocates of conventional and sustainable strategies are not governable in a democratic manner. Mumford suggests ( 1964: I) that the classical idea of democracy includes "a group of related ideas and practices ... [including] communal self-government ... unimpeded access to the common store of knowledge, protection against arbitrary external controls, and a sense of moral responsibility for behavior that affects the whole community." Modern conventional and sustainable energy strategies invest in external controls, authorize abstract, depersonalized interactions of suppliers and demanders, and celebrate economic growth and technical excellence without end. Their social consequences are relegated in both paradigms to the status of problems-to-be-solved, rather than being recognized as the emblems of modernist politics. As a result, modernist democratic practice becomes imbued with an authoritarian quality, which "deliberately eliminates the whole human personality, ignores the historic process, [and] overplays the role of abstract intelligence, and makes control over physical nature, ultimately control over [hu]man[ity] himself, the chief purpose of existence" (Mumford, 1964: 5). Meaningful democratic governance is willingly sacrificed for an energy transition that is regarded as scientifically and technologically unassailable.

#### Technocratic management makes extinction inevitable—no aff proposal can solve.

Crist 7 [Eileen Crist, Associate Professor of Science and Technology in Society at Virginia Tech University, 2007, “Beyond the Climate Crisis: A Critique of Climate Change Discourse,” *Telos*, Volume 141, Winter, Available Online to Subscribing Institutions via Telos Press, p. 49-51]

If mainstream environmentalism is catching up with the solution promoted by Teller, and perhaps harbored all along by the Bush administration, it would certainly be ironic. But the irony is deeper than incidental politics. The projected rationality of a geoengineering solution, stoked by apocalyptic fears surrounding climate change, promises consequences (both physical and ideological) that will only quicken the real ending of wild nature: "here we encounter," notes Murray Bookchin, "the ironic perversity of a 'pragmatism' that is no different, in principle, from the problems it hopes to resolve."58 Even if they work exactly as hoped, geoengineering solutions are far more similar to anthropogenic climate change than they are a counterforce to it: their implementation constitutes an experiment with the biosphere underpinned by technological arrogance, unwillingness to question or limit consumer society, and a sense of entitlement to transmogrifying the planet that boggles the mind. It is indeed these elements of techno-arrogance, unwillingness to advocate radical change, and unlimited entitlement, together with the profound erosion of awe toward the planet that evolved life (and birthed us), that constitute the apocalypse underway—if that is the word of choice, though the words humanization, colonization, or occupation of the biosphere are far more descriptively accurate. Once we grasp the ecological crisis as the escalating conversion of the planet into "a shoddy way station,"59 it becomes evident that inducing "global dimming" in order to offset "global warming" is not a corrective action but another chapter in the project of colonizing the Earth, of what critical theorists called world domination.

Domination comes at a huge cost for the human spirit, a cost that may or may not include the scale of physical imperilment and suffering that apocalyptic fears conjure. Human beings pay for the domination of the biosphere—a domination they are either bent upon or resigned to—with alienation from the living Earth.60 This alienation manifests, first and [end page 50] foremost, in the invisibility of the biodiversity crisis: the steadfast denial and repression, in the public arena, of the epochal event of mass extinction and accelerating depletion of the Earth's biological treasures. It has taken the threat of climate change (to people and civilization) to allow the tip of the biodepletion iceberg to surface into public discourse, but even that has been woefully inadequate in failing to acknowledge two crucial facts: first, the biodiversity crisis has been occurring independently of climate change, and will hardly be stopped by windmills, nuclear power plants, and carbon sequestering, in any amount or combination thereof; and second, the devastation that species and ecosystems have already experienced is what largely will enable more climate-change-driven damage to occur.

Human alienation from the biosphere further manifests in the recalcitrance of instrumental rationality, which reduces all challenges and problems to variables that can be controlled, fixed, managed, or manipulated by technical means. Instrumental rationality is rarely questioned substantively, except in the flagging of potential "unintended consequences" (for example, of implementing geoengineering technologies). The idea that instrumental rationality (in the form of technological fixes for global warming) might save the day hovers between misrepresentation and delusion: firstly, because instrumental rationality has itself been the planet's nemesis by mediating the biosphere's constitution as resource and by condoning the transformation of Homo sapiens into a user species; and secondly, because instrumental rationality tends to invent, adjust, and tweak technical means to work within given contexts—when it is the given, i.e., human civilization as presently configured economically and culturally, that needs to be changed.

#### Critique is a prior question—starting with incentives dodges issues of social and environmental sustainability.

Byrne and Toly 6—\*John Byrne, Director Center for Energy and Environmental Policy & Public Policy at Delaware and \*\*Noah Toly, Research Associate Center for Energy and Environmental Policy [*Transforming Power* eds. Byrne, Toly, & Glover p. 22-24]

Transition without Change: A Failing Discourse After more than thirty years of contested discourse, the major 'energy futures' under consideration appear committed to the prevailing systems of governance and political economy that animate late modernity. The new technologies-conventional or sustainable-that will govern the energy sector and accumulate capital mjght be described as centaurian technics21 in which the crude efficiency of the fossil energy era is bestowed a new sheen by high . technologies and modernized ecosystems: capitalism without smoky cities, contaminated industrial landscapes, or an excessively carbonized atmosphere. Emerging energy solutions are poised to realize a postmodern transition (Roosevelt, 2002), but their shared commitment to capitalist political economy and the democratic-authoritarian bargain lend credence to Jameson's assessment (1991) of postmodernism as the "cultural logic of late capitalism." Differences in ecological commitments between conventional and sustainable energy strategies still demarcate a battleground that, we agree, is important-even fundamental. But so also are the common aspirations of the two camps. Each sublimates social considerations in favor of a politics of more-is-better, and each regards the advance of energy capitalism with a sense of inevitability and triumph. Conventional and sustainable energy visions equally presume that a social order governed by a 'democratic' ideal of cornucopia, marked by economic plenty, and delivered by technological marvels will eventually lance the wounds of poverty and inequality and start the healing process. Consequently, silence on questions of governance and social justice is studiously observed by both·proposals. Likewise, both agree to, or demur on, the question of capitalism's sustainability.22 Nothing is said on these questions because, apparently, nothing needs to be. If the above assessment of the contemporary energy discourse is correct, then the enterprise is not at a crossroad; rather, it has reached a point of acquiescence to things as they are. Building an inquiry into energy as a social project will require the recovery of a critical voice that can interrogate, rather than concede, the discourse's current moorings in technological politics and capitalist political economy. A fertile direction in this regard is to investigate an energy-society order in which energy systems evolve in response to social values and goals, and not simply according to the dictates of technique, prices, or capital. Initial interest in renewable energy by the sustainability camp no doubt emanated, at least in part, from the fact that its fuel price is non-existent and that capitalization of systems to collect renewable sources need not involve the extravagant, convoluted corporate forms that manage the conventional energy regime. But forgotten, or misunderstood, in the attraction of renewable energy have been the social origins of such emergent possibilities. Communities exist today who address energy needs outside the global marketplace: they are often rural in character and organize energy services that are immune to oil price spikes and do not require water heated to between 550Q and 900Q Fahrenheit (300Q and 500Q Celsius) (the typical temperatures in nuclear reactors). No energy bills are sent or paid and governance of the serving infrastructure is based on local (rather than distantly developed professional) knowledge. Needless to say, sustainability is embodied in the lifeworld of these communities, unlike the modern strategy that hopes to design sustainability into its technology and economics so as not to seriously change its otherwise unsustainable way of life . Predictably, modern society will underscore its wealth and technical acumen as evidence of its superiority over alternatives. But smugness cannot overcome the fact that energy-society relations are evident in which the bribe of democratic-authoritarianism and the unsustainability of energy capitalism are successfully declined. In L 928, Mahatma Gandhi (cited in Gandhi, 1965: 52) explained why the democratic-authoritarian bargain and Western capitalism should be rejected: God forbid that India should ever take to industrialization after the manner of the West. The economic imperialism of a single tiny island kingdom (England) is today keeping the world in chains. If an entire nation of 300 million took to similar economic exploitation, it would strip the world bare like locusts. Unless the capitalists of India help to avert that tragedy by becoming trustees of the welfare of the masses and by devoting their talents not to amassing wealth for themselves but to the service of the masses in an altruistic spirit, they will end either by destroying the masses or being destroyed by them. As Gandhi's remark reveals, social inequality resides not in access to electric light and other accoutrements of modernity, but in a world order that places efficiency and wealth above life-affirming ways of life. This is our social problem, our energy problem, our ecological problem, and, generally, our political-economic problem. The challenge of a social inquiry into energy-society relations awaits.

### 1NC ASPEC

#### Power in the federal government is divided into three branches—the affirmative does not specify

Rotunda 1 (18 Const. Commentary 319, “THE COMMERCE CLAUSE, THE POLITCAL QUESTION DOCTRINE, AND MORRISON,” lexis)

The Framers of our Constitution anticipated that a self-interested "federal majority" would consistently seek to impose more federal control over the people and the states. n10 Hence, they created a federal structure designed to protect freedom by dispersing and limiting federal power. They instituted federalism [\*321] chiefly to protect individuals, that is, the people, not the "states qua states." n11 The Framers sought to protect liberty by creating a central government of enumerated powers. They divided power between the state and federal governments, and they further divided power within the federal government by splitting it among the three branches of government, and they further divided the legislative power (the power that the Framers most feared) by splitting it between two Houses of Congress.

#### Voting Issue

#### One—negative ground—specification is key to generate specific uniqueness and link magnitude so generic energy production now doesn’t non-unique our disads. Gives us textual competition for counterplans and key to high tech solvency arguments

#### Two—education—specification is a prerequisite to energy policy.

Tomain 90—Professor of Law, University of Cincinnati College of Law [Tomain, Joseph P., “The Dominant Model of United States Energy Policy” (1990), Faculty Articles and Other Publications, Paper 130, http://scholarship.law.uc.edu/fac\_pubs/130]

IV. CONCLUSION

The direct message of the dominant model is that United States energy policy is market driven. The implication of this message is equally clear. Given the structural setting of a complex policymaking process that is woven throughout government and is directly affected by the tensions created by separation of powers and federalism, no comprehensive national energy policy of any detail is likely to develop despite executive, legislative, or administrative desires to do so.

There are ideological and pragmatic reasons behind this conclusion. The first reason, grounded in the liberal tradition, is that the country is "generally suspicious" of central planning. Rather than have an imitation Japanese or European industrial policy, the United States economy continues to run on private competition. Granted, the government will attempt to halt large accumulations of corporate power through antitrust enforcement. Still, though, countervailing government control of the economy through heavy central planning is simply not an accepted way of doing business.

A second and corollary reason is that although government is used as a backstop to prevent large aggregations of corporate power, government will also promote and support competitive businesses. The New Deal was not so much an experiment in social policythough it was clearly that-as it was an example of the federal government stimulating the economy by getting business on its feet again.

Third, there is a commitment to the hard energy path of largescale, high-technology, capital intensive energy production. This commitment finds its roots in the industrial revolution of the nineteenth century. This history makes it difficult for policy makers and decision makers to design and implement alternative energy policies, thus putting the burden of change on proponents 'of alternatives.

Fourth, also echoing the liberal tradition, there is an underlying faith in the market. The country's efforts to achieve the virtues of the market-color blindness, individual liberty, eqmility, and technological innovations-may not reach a Utopian plateau, but government controls are worse approximations. The country's faith in the market forms the baseline, and government will only intervene if cracks in the baseline are perceived.

Thus the dominant model of U.S. energy policy is firmly based in the tenets of democratic capitalism: private ownership and production; competition; no overt central planning; wariness of monopoly; and government support of each of the other elements. The hope is that our national economy and our quality of life can flourish if (1) markets are relatively clear, (2) entry and exits are relatively inexpensive, and (3) corporate power is relatively dispersed. Indeed, the ideology of domestic energy policy rests upon the idea that inter-industry and intra-industry competition are highly desirable~' Moreover, such industrial pluralism ultimately serves the public interest by providing relatively abundant energy at relatively stable prices. Economic efficiency, economic growth, economies of scale, and a cautious eye on market power thus define the public interest in energy. So says the dominant model. What remains to be seen is whether the dominant model has significant longevity given contemporary concerns about the continued use of fossil fuels and environmental degradation. Before the environmental consequences of hard path energy production can be adequately addressed, however, the dominant structure of domestic energy policymaking and policy must be acknowledged. Hopefully, this article has provided that acknowledgement.

#### 2AC clarifications are too late—the 1AC plan is used to generate counterplan competition—2AC or CX clarification justifies aff conditionality and kills any neg predictability

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#### Definition - Energy production is the production of electricity or fuels

**NASA No DATE** [pg. http://www.sti.nasa.gov/sscg/44.html]

Definition

Energy Production – The production of electricity, combustible fuels, nuclear and thermonuclear fuels, and heating and cooling by renewable resources.

**Violation – Their incentive is for CCS – Not energy production**

**SSEB 06** [Southern States Energy Board, “America's Energy Security: Building a Bridge to Energy Independence and to a Sustainable Energy Future,” July 2006

Incentives for Carbon Capture and Storage

Development of carbon capture and storage can be encouraged through incentives that could be in the form of higher prices for products and tax incentives for carbon capture and storage (CCS) technologies. For example:

• Investment tax credits and expensing rather than depreciation can help companies which initiate CO2 EOR projects by reducing the impact of prerequisite large investments and CO2 purchase costs incurred many months before incremental oil production can be expected. Similar credits could be granted to innovative projects demonstrating higher thermal efficiencies, cleaner energy production, carbon sequestration, and combinations of these. Pg. 187

#### Vote Neg

#### A. Limits – Their imterp makes it topical to provide incentives for any tech or process that is related to but not necessarily for production. This will pave the way for energy efficiency and environmental compliance AFF that have little to nothing to do with production

#### B. Generic link ground – They eviscerate it. Their link turns will always be more specific if if the tax incentive can be for something other than energy production

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#### US oil supply shortages are key US-Canada energy coop—increasing the US’ domestic supply will allow environmental groups to disrupt relations.

Hale 11 - Professor of Poli Sci @ University of Lethbridge [Geoffry E. Hale “"In the pipeline" or "over a barrel"? Assessing Canadian efforts to manage U.S. Canadian energy interdependence,” Canadian-American Public Policy, Feb, 2011, pg. <http://findarticles.com/p/articles/mi_hb3189/is_76/ai_n57958773/?tag=content;col1>]

The integration of North American energy markets and infrastructure since the mid-1980s may have been facilitated by governments in both the United States and Canada. However, it has been largely the product of market forces and the previous inability of governments to overcome perverse economic incentives, political gridlock and **domestic supply shortages in the U**nited **S**tates. Current debates over climate change and the restructuring of energy industries recall many features of these earlier disputes.

Although the Obama administration has been modestly receptive to developing common policy goals with Canada in certain areas, no President in recent years has possessed the political capital or influence to lead or drive Congress where its leaders do not want to go. "Legislative pragmatism" - the log-rolling and special interest payoffs necessary for Congress to approve the multi-dimensional but largely incremental energy bills of the past decade - has left some opportunities for Canadian governments to advance their interests at the margins. However, in the short- and medium-term, it is unlikely to produce what one astute observer has described as "policy pragmatism" - measures that will actually be effective in achieving broader policy objectives. (Brooks 2009: A21)

Substantive bilateral cooperation on the design and implementation of complementary energy and/or environmental policies in recent years has generally been limited to administrative measures such as those for coordinating cross-border pipeline and electricity corridors discussed above, based on the market-driven policy changes of the 1990s or, in some cases, Canadian adaptation of U.S. initiatives affecting industries characterized by the substantive integration of production and distribution processes. These measures, which are most advanced in the electricity (and "downstream", in the automotive) sector (see above in the preceding section), have accommodated the interests of major industry stakeholders to some extent, but are increasingly **subject to the cross-fire** of competing regulatory processes and demands from competing societal interests.

The diversity of energy demand and energy sources within and among the nations of North America make it unlikely that a single energy policy will emerge between the United States and Canada, let alone Mexico - whatever the competing aspirations of energy industries, environmentalists, or ordinary consumers (Dukert 2007: 151). Continuing U.S. dependence on energy imports, and the visible unwillingness of American consumers (and taxpayers) to sacrifice either their lifestyles or living standards to finance the enormous investments necessary to achieve substantial energy independence make it likely that the United States will continue to depend on Canadian energy imports. They also suggest the economic benefits to both countries of pursuing greater energy efficiency through the more efficient organization of existing energy infrastructure - including both refineries and electricity transmission lines- and the cooperative development of new technologies that can both enhance energy efficiency and mitigate levels of GHG emissions.

The two **greatest threat**s **to** such **cooperation** [is] are likely to be the temptation of the larger power to **impose unilateral policy decisions** on its smaller neighbour and 1970s-style regional divisions within Canada that undercut the latter's capacity to negotiate effectively with the United States. These challenges suggest that Canadian governments - both federal and provincial - must develop a three-level strategy to engage their American neighbors constructively, while reducing the leverage of American environmental interest groups to **disrupt the bilateral relationship**. Ironically, regional divisions on cap-and-trade and related environmental legislation in the United States create opportunities to do just that.

#### CO2 EOR can easily double oil production.

NEORI 12 [The National Enhanced Oil Recovery Initiative (Initiative members include executives from the electric power, coal, ethanol, chemical, and oil and gas industries; state officials, legislators, and regulators; and environmental and labor representatives), “Carbon Dioxide Enhanced Oil Recovery: A Critical Domestic Energy, Economic, and Environmental Opportunity,” February 2012

America has the potential to expand CO2-EOR significantly. Advanced Resources International (ARI) estimates that an additional 26-61 billion barrels of oil could economically be recovered with today’s EOR technologies, potentially more than doubling current U.S. proven reserves. Moreover, “next generation” EOR technology could yield substantially greater gains, potentially increasing recoverable domestic oil from EOR to 67-137 billion barrels, and storing 20-45 billion metric tons of CO2 that would otherwise be released into the atmosphere (ARI, 2011). Pg. 1

#### That displaces U.S. oil imports.

NEORI 12 [The National Enhanced Oil Recovery Initiative (Initiative members include executives from the electric power, coal, ethanol, chemical, and oil and gas industries; state officials, legislators, and regulators; and environmental and labor representatives), “Carbon Dioxide Enhanced Oil Recovery: A Critical Domestic Energy, Economic, and Environmental Opportunity,” February 2012

Analysis undertaken by NEORI suggests that this tax credit would result in the production of an additional 9 billion barrels of American oil over 40 years, quadrupling CO2-EOR production and displacing U.S. oil imports (See Figure 1). At the same time, the proposed incentive would save the United States roughly $610 billion in expenditures on imported oil, while storing approximately 4 billion tons of CO2 captured from industrial and power plant sources, thereby reducing total U.S. CO2 emissions in the process. Pg.2

#### US-Canada energy coop is key to stabilize the Arctic

Eurasia Review 12 [“The Arctic: Simmering Tensions Between Canada And US – Analysis,” July 30, 2012, pg. http://www.eurasiareview.com/30072012-the-arctic-simmering-tensions-between-canada-and-us-analysis/]

The focus of international attention on melting polar ice is hiding simmering tensions between Canada and the USA – two of the eight states with Arctic territory – which need be urgently resolved to avoid complications in a new emerging geopolitical situation, says a new study.

“Both countries need to pay attention to the challenges in the Arctic but should also be wary of how their domestic posturing in the region is affecting their international relations, including with each other,” says the study by the prestigious Stockholm International Peace Research Institute (SIPRI).

Authored by Kristofer Bergh, the study says: “The abilities of Canada and the USA to pursue their interests in the region will rely on them cooperating closely, not least because from 2013 they will hold successive chairmanships of the Arctic Council. Canadian-US relations will thus be an important factor in the future of a changing Arctic. Resolving key disagreements and identifying common priorities would strengthen both countries’ positions in the region.”

Together with Denmark, Finland, Iceland, Norway, Russia, Sweden, Canada and the USA are members of the Arctic Council. The Council, which includes the representatives of the region’s indigenous populations, has evolved into a decision-making organization with a permanent secretariat and budget. Subsequently it attracts more attention from the rest of the world.

#### Arctic instability risks US-Russia nuclear war.

Wallace & Staples 10 – Professor of Poli Sci @ University of British Columbia & President of the Rideau Institute [Michael Wallace & Steven Staples, Ridding the Arctic of Nuclear Weapons, February 2010

What is certain, however, is that the Russian Arctic-based Northern Fleet is continually “stalked” by American (and perhaps British and French) fast-attack submarines from the moment the Russian submarines leave port. While, as noted above, the number of Russian “boomer” patrols has sharply declined since the days of the Cold War, the underwater games of “cat and mouse” continue as before, and several near-collisions have been reported as the Russian subs become increasingly successful in shaking off their American “tails.”54 **The Cold War is not** entirely **over beneath the** rapidly melting **Arctic** ice, and Russia’s nuclear submarine bases north of the Arctic Circle are yet another powerful signal that the Russians intend to enforce their claims in the Arctic. So, while the prospects of major progress on U.S.-Russian bilateral disarmament have never been brighter, the gradual rebuilding of the Russian Northern Fleet’s roster of ballistic missile submarines and the ongoing mission of American SSN’s to track them aggressively has meant increased rather than decreased **U.S.-Russian naval competition**.

Military Competition in the Arctic: The Dangerous New Reality

 The fact is, the Arctic is becoming a **zone of** increased **military competition**. Russian President Medvedev has announced the creation of a special military force to defend Arctic claims. Last year Russian General Vladimir Shamanov declared that Russian troops would step up training for Arctic combat, and that Russia’s submarine fleet would increase its “operational radius.”55 Recently, two Russian attack submarines were spotted off the U.S. east coast for the first time in 15 years. 56

In January 2009, on the eve of Obama’s inauguration, President Bush issued a National Security Presidential Directive on Arctic Regional Policy. It affirmed as a priority the preservation of U.S. military vessel and aircraft mobility and transit throughout the Arctic, including the Northwest Passage, and foresaw greater capabilities to protect U.S. borders in the Arctic.57

The Bush administration’s disastrous eight years in office, particularly its decision to withdraw from the ABM treaty and deploy missile defence interceptors and a radar station in Eastern Europe, have greatly contributed to the instability we are seeing today, even though the Obama administration has scaled back the planned deployments. The Arctic has figured in this renewed interest in Cold War weapons systems, particularly the upgrading of the Thule Ballistic Missile Early Warning System radar in Northern Greenland for ballistic missile defence.

The Canadian government, as well, has put forward new military capabilities to protect Canadian sovereignty claims in the Arctic, including proposed ice-capable ships, a northern military training base and a deep-water port.

Earlier this year Denmark released an all-party defence position paper that suggests the country should create a dedicated Arctic military contingent that draws on army, navy and air force assets with ship-based helicopters able to drop troops anywhere.58 Danish fighter planes would be tasked to patrol Greenlandic airspace.

Last year Norway chose to buy 48 Lockheed Martin F-35 fighter jets, partly because of their suitability for Arctic patrols. In March, that country held a major Arctic military practice involving 7,000 soldiers from 13 countries in which a fictional country called Northland seized offshore oil rigs.59

The manoeuvres prompted a protest from Russia – which objected again in June after Sweden held its largest northern military exercise since the end of the Second World War. About 12,000 troops, 50 aircraft and several warships were involved.60

Jayantha Dhanapala, President of Pugwash and former UN under-secretary for disarmament affairs, summarized the situation bluntly: “From those in the international peace and security sector, deep concerns are being expressed over the fact that two nuclear weapon states – the United States and the Russian Federation, which together own 95 per cent of the nuclear weapons in the world – converge on the Arctic and have competing claims. These claims, together with those of other allied NATO countries – Canada, Denmark, Iceland, and Norway – could, if unresolved, lead to **conflict escalating** **into the** threat or **use of nuclear weapons**.”61 Many will no doubt argue that this is excessively alarmist, but no circumstance in which nuclear powers find themselves in military confrontation can be taken lightly. Pg. 7-9

#### Oil exports to the US allows Alberta to be a global leader

Mitrović & Malone 11 – Science and Technology Advisor @ Ressources Naturelles Canada & Policy Advisor with the Canadian Department of Natural Resources [Milenka Mitrović & Alexandra Malone “Carbon capture and storage (CCS) demonstration projects in Canada,” Energy Procedia 4 (2011) pg. 5685–5691

There is a similar story in Canada where fossil fuels currently supply the vast majority (88%) of the country’s energy needs and will continue to do so for several decades as it transitions to a low carbon economy [2]. Canada’s economic prosperity is also linked to being a major energy producer. In 2008, 38% of energy produced in Canada was exported, primarily to the United States, which points to the increasing importance of Canada’s energy sector for continental energy security [2].

Canada has inscribed in the Copenhagen Accord a 2020 economy-wide target of a 17 percent reduction in greenhouse gas (GHG) emissions from 2005. Reconciling Canada’s ongoing reliance on fossil fuels with the need to reduce GHG emissions is one of the country’s greatest challenges. Canada is taking this challenge seriously with policies that include enhancing its global leadership in advancing carbon capture and storage (CCS). As the leading technology available for making emissions reductions from large-scale fossil fuel use and production, CCS will be a critical component of the suite of GHG mitigation measures being undertaken in Canada.

2. Opportunities and challenges - Canada is a global leader in CCS, with governments, industry and non-governmental organizations all moving forward with CCS initiatives. The provinces of Alberta, Saskatchewan, and British Columbia, in particular, are at the forefront of CCS development in terms of research, demonstration projects, and regulatory frameworks. Other provinces such as Nova Scotia, Quebec, Ontario and Manitoba are also moving forward with CCS activities. Canada has experience with the various components of CCS from decades of analogous activities in the oil and gas sector that involve the capture, transport, injection or storage of liquid and gaseous substances. Saskatchewan is home to the Weyburn-Midale Project, one of the world’s five fully integrated commercial-scale CCS projects. Canada also has a natural advantage when it comes to CO2 storage. The Western Canadian Sedimentary Basin has excellent geological storage potential in close proximity to a concentration of large final emitters. Preliminary estimates of storage capacity include 450 megatonnes (Mt) for enhanced oil recovery (EOR) opportunities in Western Canada and at least 3 gigatonnes of total CO2 storage in the province of Alberta alone [3,4]. Storage potential also exists in other parts of the country, such as Atlantic Canada. Pg. 5686 //1nc

#### Oil Sands exports to the US are key to Alberta’s investment in CCS tech

Drexhage & Murphy 10 – Director of the Climate Change and Energy Program @ International Institute for Sustainable Development & Associate with IISD [John Drexhage (Lead author with Working Group III of the Intergovernmental Panel on Climate Change, which received the Nobel Peace Prize in 2007) & Deborah Murphy (Senior policy adviser @ Environment Canada), “Climate Change and Foreign Policy in Canada: Intersection and Influence,” Canadian International Council, Energy Report No. 2, August 2010

The second group—representing 14 percent of Canada’s population, 17 percent of GDP, and 43 percent of GHG emissions in 2007—is Alberta and Saskatchewan.44 Foreign policy (the protection of trade relations with the United States) is the driver of climate policy in Alberta, which has taken a unilateral but extensive and active approach in response to climate change. Alberta’s motivation to act early and decisively is the need to protect trade interests for the oil sands, particularly with the United States, which has expressed concern about the carbon intensity of the Alberta oil industry. In response to internal and external economic and environmental concerns, Alberta has developed a climate change approach that includes regulation of large emitters and a $2-billion fund to support the development and deployment of CCS technology. The regulations for large emitters include an emissions intensity target (i.e., GHG emitted per unit of economic output) that can be met through operational improvements, the purchase of offsets, or payments to a Technology Fund (at $15/ tonne of GHG). Alberta has an international lobbying campaign in the United States geared at protecting oil exports. Saskatchewan is still developing its climate change plan, with enabling legislation introduced but no firm regulations in place. Its investment in the oil industry and early policy signals (including support of federal GHG targets) indicate that the province will likely move in a policy direction similar to Alberta’s. Saskatchewan has a 2009 memorandum of understanding with Montana to demonstrate and test large-scale post-combustion CCS. Pg. 19 //2nc must read – CCS

#### CCS for oil sands will set a precedent—we facilitate global emissions reductions.

Handwerk 11 [Brian Handwerk, “A Quest to Clean Up Canada's Oil Sands Carbon,” National Geographic News, Published August 18, 2011, pg. http://news.nationalgeographic.com/news/energy/2011/08/110818-quest-carbon-capture-canada-oil-sands/

The bulk of that money, $745 million, is to come from Alberta's $2 billion Carbon Capture and Storage Fund, and represents the largest of four CCS projects it aims to underwrite with the program it established three years ago.

Carbon-Storage Sands? - Quest, being advanced by the Athabasca Oil Sands Project (AOSP)—a joint venture among Shell Canada Energy (60 percent), Chevron Canada Limited (20 percent), and Marathon Oil Canada Corporation (20 percent)—would be an oil industry first. Although there are a handful of similar scale projects around the world, most notably two offshore Norway and one in Algeria, this would be the first that tackles emissions from unconventional oil or gas operations.

An important aim of the project is to show that in addition to having geology rich in oil resources, Alberta may also have the right underground formations for storing carbon.

Stefan Bachu, who holds the title "distinguished scientist" at Alberta's provincially funded research organization, Alberta Innovates Technology Futures (AITF), said the saline reservoir that the Quest project has chosen for storage is capped by hundreds of meters of solid shale, overlaid by an additional layer of tight salt rock.

"It is very safe, very secure geologically," said Bachu, who shared in the 2007 Nobel Prize as a member of the Intergovernmental Panel on Climate Change. "I am absolutely convinced that the storage will be a success."

Quest scientists chose an area where geology is stable, with no natural fractures and faults to allow gas to escape. The other cause of potential leaks, old "legacy" wells, is also minimal because the deep saline aquifer where Quest's CO2 will be stored has no oil or gas resources and as a result has not seen drilling to any significant extent. "This basal Cambrian sands formation was formed 500 million years ago when these parts of the world were tropical shorelines," said Shell's Ian Silk, the Quest project manager. "We essentially have about 130 feet (40 meters) of beach sand that's perfect for the deposition of CO2."

Silk added that the project might also prove that the basal Cambrian sands, a formation widespread throughout Alberta, can be an important resource for long-term CO2 storage. "That's important because the provincial economy has a heavy hydrocarbon basis, not only oil sands but conventional oil, natural gas, and coal," he said. "The government is mindful of the need for carbon mitigation and fortunately I think **the natural capacity for storing CO2 is equal in scale to the natural hydrocarbon resources in Alberta.**"

Scale certainly is an issue in the oil sands, notes Chris Severson-Baker, managing director of the Pembina Institute, a Canadian environmental organization that monitors the industry via www.oilsandswatch.org. "The real challenge is in proving not so much the capture part but that you can pipeline and inject this CO2 on a very large scale into a deep saline formation," he says. "If you want to look at this as a big research project, the goal is to have a commercial operation that does all of those things and can be replicated and scaled up."

Sally Benson, an expert in carbon capture and director of Stanford University's Global Climate and Energy Project, said that a project like this will build on the experience that the oil industry has had since the 1970s injecting CO2 underground for enhanced oil recovery, or coaxing more oil out of reservoirs. "**It's very well known how to do this**," she said. "We have over 400 natural gas storage projects in the United States which use the same storage technology and by and large people don't even realize that they exist . . . It sounds radically new if you haven't thought about the fact that there are a lot of places where oil and gas are naturally trapped and stay in reservoirs for millions of years."

Benson, who is an adviser to National Geographic's Great Energy Challenge initiative, views the Quest project as a step in the right direction. "If successful," she said, "it could set a precedent for other operators to further reduce carbon emissions across a whole set of activities."

#### Canada will facilitate the global deployment of CCS—it’s dedicated to knowledge sharing.

Mitrović & Malone 11 – Science and Technology Advisor @ Ressources Naturelles Canada & Policy Advisor with the Canadian Department of Natural Resources [Milenka Mitrović & Alexandra Malone “Carbon capture and storage (CCS) demonstration projects in Canada,” Energy Procedia 4 (2011) pg. 5685–5691

One important example of facilitating domestic collaboration and coordination in Canada is the Canadian CCS Network, made up of federal and provincial governments involved in CCS. The Network was created to facilitate the rapid deployment of commercial-scale CCS in Canada. The Network’s objectives include: discussing technical, policy, regulatory, communications and economic issues of common interest; exploring common interests in proposed and existing CCS initiatives; becoming a one-stop, objective, technically-informed centre of information on CCS in Canada; sharing learnings and best practices, and develop common strategic approaches to technology, infrastructure, policy, regulatory and communication issues; and providing public education and outreach on CCS. Canada is also committed to working internationally to ensure that domestic efforts contribute to the overall global advancement of CCS, and vice versa. The Government of Canada is a founding member of the Global CCS Institute and is active in organizations that deal with CCS such as the Carbon Sequestration Leadership Forum, the IEA, the Asia Pacific Partnership, the Major Economies Forum, the International Energy Forum, and the Asia Pacific Economic Cooperation. It is particularly important for Canada to cooperate with the U.S., especially since common geology for CO2 storage could potentially facilitate cross-border CCS projects in the future. To this end, CCS is one of the three main components to the Canada-U.S. Clean Energy Dialogue.

8. Conclusion - CCS has the potential to play a key role in helping Canada reduce its GHG emissions while supporting the sustainable development of key sectors in a global economy that will be increasingly carbon constrained. The Government of Canada is committed to advancing CCS given its current status as the leading technology for significantly decreasing emissions from fossil fuels. However, there are a number of challenges to address to move towards commercial-scale deployment of this technology. Addressing these challenges will require working with many stakeholders and levels of government. Canada is committed to engaging with the diverse players involved in CCS, and many collaborative initiatives are already underway. It is essential that the learnings from publicly funded demonstration projects in Canada help address these challenges and that the results are effectively shared. Moving forward, the Government of Canada will strive to maintain and enhance its global leadership on CCS by continuing work on demonstration projects and by advancing critical areas such as knowledge sharing, public engagement and R&D for next generation technologies. Pg. 5690-5691

### 1NC CP

#### The United States federal government should provide a tax credit for enhanced oil recovery carbon capture and storage

#### The net benefit is the oil DA—EOR CCS is a superior strategy for dealing with warming and doesn’t increase oil production.

**Moniz & Tinker 10** – Professor of Physics and Engineering Systems @ Massachusetts Institute of Technology & Director of the Bureau of Economic Geology @ University of Texas at Austin [Ernest J. Moniz & Scott W. Tinker “Role of Enhanced Oil Recovery in Accelerating the Deployment of Carbon Capture and Sequestration,” An MIT Energy Initiative and Bureau of Economic Geology at UT Austin Symposium, July 23, 2010

Distinguishing Between CO2 -EOR and EOR-CCS

It is important to clarify the distinction between CO2-EOR and EOR-CCS. CO2-EOR is the process by which CO2 is injected into depleted oil fields for the purpose of enhancing the recovery of oil left over from primary and secondary production. Though it shares certain technical characteristics and methods with CO2-EOR, EOR-CCS includes technologies whose objective is the long-term isolation of CO2 in the deep subsurface as part of a program to reduce atmospheric CO2 emissions. Depleted oil and gas fields, along with DSFs, are among the types of geologic formations being targeted for CO2 sequestration. EOR-CCS could be attractive in locations with significant available capacity and conditions amenable to both long-term CO2 storage and EOR.

Discussants noted that CO2-EOR as currently implemented is considerably dissimilar from commercialscal e EOR-CCS per se. Large-scale adoption of the technology is unlikely unless significant changes are made in the current deployment practices. These changes would include the broadening of subsurface understanding to include ROZs and DSFs (e.g., brine aquifers), along with a new policy and regulation framework to incentivize the expansion to include anthropogenic sources, transportation on a national scale, and appropriate monitoring to assure permanent sequestration. Past experience with CO2-EOR operations and the incentives that have driven the development of the industry are insufficient bases for informing public policy and investment in the current climateladen regulatory regime. Pg. 24

### 1NC CCS Advantage

#### 1. Slowing now due to natural forcings—no risk of runaway warming

Klimenko 11 [VV, Research Assistant at the [Department of Theoretical Astrophysics](http://www.ioffe.ru/astro/) of the [Ioffe Physico-Technical Institute](http://www.ioffe.ru/), “Why Is Global Warming Slowing Down?,” 5-20, Doklady Earth Sciences, 2011, Vol. 440, Part 2, pp. 1419–1422]

The first decade of the present century has ended with a remarkable climatic event: for the first time over the past 65 years, the five year average global temperature over 2006–2010 turned out to be lower than the value for the previous five year interval (2001–2005). In addition, the absolute maximum temperature, which was attained as long ago as in 1998, has not been surpassed for thirteen years. Both these facts seem ingly support the arguments of the opponents of global warming theory, at least those who regard the anthro pogenic origin of warming questionable or even farfetched. Indeed, the anthropogenic emission of carbon dioxide, which is the major greenhouse atmospheric component, has risen by 60% from 5.2 giga tons to 8.5 gigatons of carbon, and its concentration has increased from 339 to 390 ppmv (parts per million by volume). How then do we explain the apparent slowdown in the rate of global warming?

Evidently, the observed global rise in temperature (Fig. 1) is a response of the climatic system to the combined action of both anthropogenic and natural impacts. Some of the latter are precisely the factors responsible for the current climatic paradox. Further, we will attempt to identify these factors and, based on their analysis, forecast the global climatic trends for the next decades.

Figure 2 presents the wavelet spectra yielded by continuously analyzing the time series of global tem perature over 1850–2011 [1]. Here, we analyze only one of three existing global temperature datasets which are continuously updated, namely the HadCRUT3 temperature series provided by the Uni versity of East Anglia (accessible at http://www.cru. uea.ac.uk/cru/data/temperature/), because this is, as of now, the only dataset covering more than a 150-year interval, which is crucial for our study. We note that it only recently became possible to analyze such long time series and, thus, identification of multidecade rhythms became a solvable task. The temperature data were preliminarily rid of the longterm anthropogenic trend associated with the accumulation of greenhouse gases and aerosols in the atmosphere; this trend was calculated from the energybalance climate model developed at the Moscow Power Engineering Institute (MPEI) [2]. The resulting temperature series, free of anthropogenic trends, will contain important infor mation on the influence of natural factors. Figure 2 shows that, throughout the entire interval of instrumental observations since the mid nineteenth century, the data contain rather stable 70 year and 20 year cyclic components. A less significant 9year cycle was present in most observations (during 1870– 1900 and 1940–2000), and a 6year cycle persisted over a considerable part of the entire time span. Closely consistent results were also obtained when analyzing the temperature series by the maximum entropy method (MEM) (Fig. 3). As the order of the auroregression (AR) method is known to significantly affect the result, in our case this parameter was chosen to be onethird the length of the studied data series: according to the long experience in application of MEM in climate research, this value is suitable for providing useful information. All the harmonic com ponents identified above are statistically significant with a confidence level of 90%.

Supposedly, the source of the dominant 70year cycle is the North Atlantic, where this harmonic is reliably identified not only in the ocean [3–5] but also on the continental margins: in Greenland [6], England [7], Finland [8], at the Novaya Zemlya Archipelago, and on the Yamal Peninsula [9]. Moreover, this periodical component is not only recognized in the instrumental data but it is also revealed in the time series of paleotemperature and pressure which date back to over hundreds and even thousands of years ago. We believe that this rhythm is associated with the quasiperiodical changes in the atmospheric and oceanic circulation known as the North Atlantic Oscillation (NAO) and with the related pulsations in the advection of warm waters to the basins of the Nor wegian and Barents seas. Indeed, the time series of the NAO index contain an approximately 60to 70year component [10] and show a strong positive correlation with the time series of temperature in the Northern hemisphere [11]. The positive phases of NAO indices are character ized by a more intense westerly air mass transport and a noticeable warming of the major part of the nontrop ical zone in the northern hemisphere, which is most prominent in the winter–spring season. Incidentally, the most rapid phase of the presentday warming (1975–2005) just featured such seasonal asymmetry, which is more evidence in favor of the hemispherical and global temperatures being related to NAO. Finally, it turns out that the 70year periodicity is present in the globally averaged temperature and in the temperature averaged over the northern hemisphere, whereas in the spectrum for the southern hemisphere, this harmonic component is rather weak (Fig. 3). This is an important additional argument in favor of the North Atlantic origin of the 70year cycle.

The existence of the quasibidecadal oscillations is often attributed to the influence of the Sun. However, the situation is not so simple: in our case, this cycle is almost not recognizable in the northern hemisphere, although clearly pronounced in the southern hemisphere (Fig. 3). This fact motivates one not to con strain the probable origin of this periodicity to the behavior of the Sun, but also to search for its possible correlations to the variability in the Southern Oscillation (SO) whose index has a peak at a period of 22 years [12, 13]. The latter hypothesis is supported by the fact that the temperature series over the equatorial and southern portions of the Pacific as well as those over the entire water area of the Indian Ocean contain a distinctly expressed quasibidecadal oscillation [3]. In turn, the SO, which largely controls the tempera ture regime of the southern hemisphere, is undoubt edly affected by the variations in the rate of the Earth’s rotation, which also have a significant periodical com ponent at 22 years [14].

As of now, the nature of the 9year oscillations is least clear. We suppose it to be a result of superimposi tion of oscillations associated with the lunar–solar tides that have characteristic times of 8.85 (the perigee period of the Moon) and 9.86 years (the period of barycenter of the Sun–Jupiter system), which are cer tainly able to cause significant changes to the atmo spheric circulation and, therefore, temperature. The comparison of the instrumental data series since 1850 with the results of calculations using the energy balance model with superimposed main cyclic components is presented in Fig. 1. The calculated curve in the interval 1850–2011 accounts for more than 75% of the observed variability in the data and clearly demonstrates that the natural factors may considerably enhance or, quite the opposite, reduce the ongoing warming up to its complete disappearing or even shortterm cooling, as has occurred during the last 6–8 years. We suppose warming will resume shortly in the years to come (Fig. 1). However, up to the end of the century, its rate will likely be lower than the value attained in 1975–2005 when the extremely intense positive phases of NAO and SO concurrent with the highest solar irradiation over the last 600 years [15] resulted in a rate of warming as high as in excess of 0.2°C per decade. In the next few decades, the natural forcings will restrain the process of global warming. This will be primarily associated with the decline in solar activity and the transition to the negative phase in NAO, which features a weaker westerly air mass transport. Recent measurements show that both these processes are gaining strength. Indeed, the NAO index has consistently decreased since early 1990 and is now at a 40year low (http://www.cgd. ucar.edu/cas/jhurrell/indices.html). At the same time, the minimal solar constant over the entire 33year history of satellite observations has been recorded in the current, solar cycle 24, which started in the fall of 2008 (http://www.pmodwrc.ch/pmod.php?topic=tsi/ composite/SolarConstant/).

#### 2. Negative feedbacks solve

Singer et al. 11 [S Fred, PhD, a distinguished atmospheric physicist and first director of the U.S. Weather Satellite Service, Craig Idso, editor of the online magazine CO2 Science and author of several books and scholarly articles on the effects of carbon dioxide on plant and animal life, Robert M Carter, marine geologist and research professor at James Cook University in Queensland, Australia Climate Change Reconsidered: 2011 Interim Report]

In the 2009 NIPCC report, Idso and Singer (2009) discussed the plausibility of a multistage negative feedback process whereby warming-induced increases in the emission of dimethyl sulfide (DMS) from the world‘s oceans tend to counteract any initial impetus for warming. The basic tenet of this hypothesis is that the global radiation balance is significantly influenced by the albedo of marine stratus clouds (the greater the cloud albedo, the less the input of solar radiation to the Earth‘s surface). The albedo of these clouds, in turn, is known to be a function of cloud droplet concentration (the more and smaller the cloud droplets, the greater the cloud albedo and the reflection of solar radiation), which is dependent upon the availability of cloud condensation nuclei on which the droplets form (the more cloud condensation nuclei, the more and smaller the cloud droplets). And in completing the negative feedback loop, the cloud condensation nuclei concentration often depends upon the flux of biologically produced DMS from the world‘s oceans (the higher the sea surface temperature, the greater the sea-to-air flux of DMS).

Since the publication of the 2009 NIPCC report, additional empirical evidence has been found to support the several tenets of the DMS feedback process. Qu and Gabric (2010), for example, introduce their contribution to the subject by stating, ―dimethylsulfide (DMS) is the main volatile sulfur [species] released during the formation and decay of microbial ocean biota and ―aerosols formed from the atmospheric conversion of DMS to sulfate and methanesulfonic acid can exert a climate cooling effect directly by scattering and absorbing solar radiation and indirectly by promoting the formation of cloud condensation nuclei and increasing the albedo of clouds, thus reflecting more solar radiation back into space.

Working with climate and DMS production data from the region of the Barents Sea (70–80°N, 30– 35°E) obtained over the period 1998 to 2002, Qu and Gabric employed a genetic algorithm to calibrate chlorophyll-a measurements (obtained from SeaWiFS satellite data) for use in a regional DMS production model. Then, using GCM temperature outputs for the periods 1960–1970 (pre-industry CO2 level) and 2078–2086 (triple the pre-industry CO2 level), they calculated the warming-induced enhancement of the DMS flux from the Barents Sea region. The two researchers report, ―significantly decreasing ice coverage, increasing sea surface temperature and decreasing mixed-layer depth could lead to annual DMS flux increases of more than 100% by the time of equivalent CO2 tripling (the year 2080). In commenting on their findings, they state, ―such a large change would have a great impact on the Arctic energy budget and may offset the effects of anthropogenic warming that are amplified at polar latitudes. What is more, they write, ―many of these physical changes will also promote similar perturbations for other biogenic species (Leck et al., 2004), some of which are now thought to be equally influential to the aerosol climate of the Arctic Ocean. Thus it can be appreciated that DMS production in a warming world—especially when augmented by analogous biogenic phenomena—may provide a large moderating influence on the primary impetus for warming that is produced by mankind‘s emissions of CO2 and other greenhouse gases.

Kim et al. (2010) write that DMS ―represents 95% of the natural marine flux of sulfur gases to the atmosphere (Bates et al., 1992; Liss et al., 1997), and they say it ―may be oxidized to form non sea-salt sulfate aerosols, which are known to act as cloud condensation nuclei and thereby exert a cooling effect by absorbing or scattering solar radiation. They cite Charlson et al. (1987), who first described the intriguing and important chain of events. They also note ―DMS is generated by intracellular or extracellular enzymatic cleavage of DMSP [dimethylsulfoniopropionate] by DMSP-lyase, which is synthesized by algae and bacteria, following DMSP secretion from producer cells or release following autolysis or viral attack, while noting that ―grazing activity can also result in DMSP conversion to DMS if DMSP and DMSP-lyase are physically mixed following grazing, citing Stefels et al., 2007, and Wolfe and Steinke, 1996.

Working in the coastal waters of Korea from 21 November to 11 December 2008, the 14 Korean scientists utilized 2,400-liter mesocosm enclosures to simulate, in triplicate, three sets of environmental conditions—an ambient control (~400 ppm CO2 and ambient temperature), an acidification treatment (~900 ppm CO2 and ambient temperature), and a greenhouse treatment (~900 ppm CO2 and ~3°C warmer-than-ambient temperature)—and within these mesocosms they initiated phytoplankton blooms by adding equal quantities of nutrients to each mesocosm on day 0. For 20 days thereafter they measured numerous pertinent parameters within each mesocosm. This work revealed, as they describe it, that ―total accumulated DMS concentrations (integrated over the experimental period) in the acidification and greenhouse mesocosms were approximately 80% and 60% higher than the values measured in the control mesocosms, respectively, which they attribute to the fact that, in their experiment, ―autotrophic nanoflagellates (which are known to be significant DMSP producers) showed increased growth in response to elevated CO2 and ―grazing rates [of microzooplankton] were significantly higher in the treatment mesocosms than in the control mesocosms. In the concluding paragraph of their paper, they write, ―the key implication of our results is that DMS production resulting from CO2-induced grazing activity may increase under future high CO2 conditions, concluding that ―DMS production in the ocean may act to counter the effects of global warming in the future.

#### 3. No risk of extinction.

Lomborg 8—Director of the Copenhagen Consensus Center and adjunct professor at the Copenhagen Business School [Bjorn, “Warming warnings get overheated,” The Guardian, August 15, 2008, http://www.guardian.co.uk/commentisfree/2008/aug/15/carbonemissions.climatechange]

These alarmist predictions are becoming quite bizarre, and could be dismissed as sociological oddities, if it weren't for the fact that they get such big play in the media. Oliver Tickell, for instance, writes that a global warming causing a 4C temperature increase by the end of the century would be a "catastrophe" and the beginning of the "extinction" of the human race. This is simply silly. His evidence? That 4C would mean that all the ice on the planet would melt, bringing the long-term sea level rise to 70-80m, flooding everything we hold dear, seeing billions of people die. Clearly, Tickell has maxed out the campaigners' scare potential (because there is no more ice to melt, this is the scariest he could ever conjure). But he is wrong. Let us just remember that the UN climate panel, the IPCC, expects a temperature rise by the end of the century between 1.8 and 6.0C. Within this range, the IPCC predicts that, by the end of the century, sea levels will rise 18-59 centimetres – Tickell is simply exaggerating by a factor of up to 400. Tickell will undoubtedly claim that he was talking about what could happen many, many millennia from now. But this is disingenuous. First, the 4C temperature rise is predicted on a century scale – this is what we talk about and can plan for. Second, although sea-level rise will continue for many centuries to come, the models unanimously show that Greenland's ice shelf will be reduced, but Antarctic ice will increase even more (because of increased precipitation in Antarctica) for the next three centuries. What will happen beyond that clearly depends much more on emissions in future centuries. Given that CO2 stays in the atmosphere about a century, what happens with the temperature, say, six centuries from now mainly depends on emissions five centuries from now (where it seems unlikely non-carbon emitting technology such as solar panels will not have become economically competitive). Third, Tickell tells us how the 80m sea-level rise would wipe out all the world's coastal infrastructure and much of the world's farmland – "undoubtedly" causing billions to die. But to cause billions to die, it would require the surge to occur within a single human lifespan. This sort of scare tactic is insidiously wrong and misleading, mimicking a firebrand preacher who claims the earth is coming to an end and we need to repent. While it is probably true that the sun will burn up the earth in 4-5bn years' time, it does give a slightly different perspective on the need for immediate repenting. Tickell's claim that 4C will be the beginning of our extinction is again many times beyond wrong and misleading, and, of course, made with no data to back it up. Let us just take a look at the realistic impact of such a 4C temperature rise. For the Copenhagen Consensus, one of the lead economists of the IPCC, Professor Gary Yohe, did a survey of all the problems and all the benefits accruing from a temperature rise over this century of about approximately 4C. And yes, there will, of course, also be benefits: as temperatures rise, more people will die from heat, but fewer from cold; agricultural yields will decline in the tropics, but increase in the temperate zones, etc. The model evaluates the impacts on agriculture, forestry, energy, water, unmanaged ecosystems, coastal zones, heat and cold deaths and disease. The bottom line is that benefits from global warming right now outweigh the costs (the benefit is about 0.25% of global GDP). Global warming will continue to be a net benefit until about 2070, when the damages will begin to outweigh the benefits, reaching a total damage cost equivalent to about 3.5% of GDP by 2300. This is simply not the end of humanity. If anything, global warming is a net benefit now; and even in three centuries, it will not be a challenge to our civilisation. Further, the IPCC expects the average person on earth to be 1,700% richer by the end of this century.

#### Oil reservoirs are prone to leaks

Brugato 11– JD from Harvard Law School [Thomas Brugato, “NOTE: THE PROPERTY PROBLEM: A SURVEY OF FEDERAL OPTIONS FOR FACILITATING ACQUISITION OF CARBON SEQUESTRATION REPOSITORIES” Virginia Environmental Law Journal, 2011, 29 Va. Envtl. L.J. 305

Depleted oil and gas reservoirs are, as the name suggests, reservoirs that once held oil and gas but are largely empty now that the hydrocarbons have been extracted. The Department of Energy estimates that between 124 and 137 billion metric tons of CO<2> could be stored in such reservoirs, representing between .7 and 6.9 percent of the potential CO<2> storage capacity of the United States. n78 The primary advantage of utilizing depleted reservoirs is that the extensive experience with oil and gas reservoirs has generated [\*325] a substantial amount of geologic data that would be "directly transferable" to CCS site characterization. n79

However, there are two disadvantages associated with using such reservoirs. First, depleted oil and gas formations are perhaps the type of geologic formation most prone to leak CO<2> back into the atmosphere. Hundreds of wells have been drilled into these formations in order to initially extract the hydrocarbons. If, upon cessation of extraction activities, some of these wells were not plugged properly, the injected CO<2> could leak out, n80 substantially diminishing the efficacy of the sequestration operation and potentially resulting in liability for the site operator. Second, depleted oil and gas reservoirs are not evenly distributed throughout the country. In particular, as Figure 3 suggests, there is very limited capacity on the West Coast. As a result, either long, costly pipelines will need to be constructed from emissions sources on the West Coast, n81 or alternative sequestration formations will need to be utilized for West Coast emissions sources.

#### CCS is decades away.

Ming & Melzer 10 – President of Research Partnership to Secure Energy for America & Board President of the Texas Carbon Capture and Storage Association C. Michael Ming (BS w/ distinction in Petroleum Engineering and an MS in Engineering Management from Stanford University), & L. Stephen Melzer (President of Melzer Consulting. Provides background materials and advising clients of business strategies related to CO2 EOR and CCS), “CO2 EOR: A Model For Significant Carbon Reductions,” Conference Paper Presented at the Symposium on the Role of EOR in Accelerating the Deployment of CCS, July 23, 2010, Massachusetts Institute of Technology, pg. <https://rfflibrary.wordpress.com/2011/05/25/role-of-enhanced-oil-recovery-in-accelerating-the-deployment-of-carbon-capture-and-sequestration>

One of the multiple future technology options required to mitigate carbon emissions from traditional fossil fuel power generation and other industrial processes is to capture and sequester (CCS) those emissions. Yet, at present, CCS at any meaningful scale relative to the extraordinary volumes of CO2 emissions being produced is still years and possibly decades away. Capture costs appear to be unacceptably high, the “energy penalty” for capture on conventional existing coal fired power is far too high, the distribution network to move the CO2 to repositories is mostly not in place, and the determination of safe and acceptable permanent repositories is not ready for accepting CO2 for a multitude of reasons. Yet at the same time there is actually high demand and higher potential for CO2 in existing oilfield tertiary enhanced oil recovery (EOR) operations where there exists both amenable pore volume and established CO2 related infrastructure and expertise. Pg.1

### 1NC—Oil Dependence

#### Adaptation solves the Hormuz impact

**Gholz & Press 10** - Professor of public affairs @ University of Texas-Austin & Professor of government @ Dartmouth University [Eugene Gholz & Daryl G. Press, “Protecting “The Prize”: Oil and the U.S. National Interest,” Security Studies, 19:453–485, 2010

The most important point about the strait is that attempts to harass shipping would trigger rapid adaptations that would mitigate the economic consequences. For example, if ongoing attacks reduced throughput by damaging a fraction of the tankers that passed through the strait, wholesalers would face powerful economic incentives to send additional tankers to get more oil to the market.86 Attacks would increase shipping insurance premiums, but producers, who need oil export income, would likely bear that cost, as they did during the Tanker War.87 Exporters in the Gulf might even repeat Iran’s Tanker War strategy, using a shuttle service—perhaps using a high volume of lower-value ships, perhaps even with military crews, to ferry oil to commercial carriers outside the strait. Pg. 480

#### Strategic reserves prevent Hormuz impact

**Gholz & Press 10** - Professor of public affairs @ University of Texas-Austin & Professor of government @ Dartmouth University [Eugene Gholz & Daryl G. Press, “Protecting “The Prize”: Oil and the U.S. National Interest,” Security Studies, 19:453–485, 2010

Finally, even if attacks temporarily reduced tanker traffic in the strait by 33 percent, U.S. and European petroleum reserves could be tapped to add several million barrels per day to world markets until Iran ran out of harassment capabilities.88 Finally, the U.S. military could respond if Iran harassed tanker traffic in the Gulf, but even strong action would not depend on having a peacetime forward presence in the region. Naval forces operating in the Indian Ocean would be ideally positioned to counter Iranian attacks. Defending shipping in the strait might entail (1) air attacks against antiship missile launchers along the Iranian coast and the Gulf islands; (2) air attacks on Iranian ships suspected of laying mines and Iran’s submarine pens; (3) air patrols to protect ships from air attack; and (4) mine sweeping to clear safe channels for tankers. The U.S. Navy is now much better trained and equipped for littoral warfare than the blue water-oriented force that protected Persian Gulf oil convoys briefly in the late-1980s.89 The U.S. Navy could prosecute all of these missions with over-the-horizon forces. Ground-based airpower could also fly to the Gulf in a crisis.

#### They can’t close the Strait – It is physically impossible

**Gholz & Press 10** - Professor of public affairs @ University of Texas-Austin & Professor of government @ Dartmouth University [Eugene Gholz & Daryl G. Press, “Protecting “The Prize”: Oil and the U.S. National Interest,” Security Studies, 19:453–485, 2010

Thankfully, no country in the Gulf could close the Strait of Hormuz.71 Iran, the country best positioned geographically to try, could harass shipping and damage some tankers.72 It could not, however, close the strait, nor could it seriously disrupt shipping for an extended period of time.73 The mission of creating a prolonged disruption to that much commerce is simply too challenging, especially for a middleweight military power like Iran. First, even at its narrowest point, the strait is 34 km across, and almost all of that water is deep enough for a laden supertanker to safely pass. Physically blocking the waterway, for instance with scuttled ships, is therefore implausible.74 pg. 478

#### No Mideast war – Iran, Iraq and Saudis lack the requisite military to be aggressive

**Gholz & Press 10** - Professor of public affairs @ University of Texas-Austin & Professor of government @ Dartmouth University [Eugene Gholz & Daryl G. Press, “Protecting “The Prize”: Oil and the U.S. National Interest,” Security Studies, 19:453–485, 2010

The majority of the world’s oil reserves appear to be located in the Persian Gulf, close enough together that a regional empire could seize most of them. The good news is that the risk of major conquest in the Persian Gulf is at its lowest point in decades. This contingency does not present a demanding mission for the United States military, nor does it require any peacetime military presence in the region.

Economic and demographic factors suggest that only three countries— Iran, Iraq, and Saudi Arabia—could potentially dominate large swathes of the Persian Gulf region by force.58 However, each has important gaps in national power that limit its offensive capabilities, now and into the foreseeable future (see Table 1). For example, Saudi Arabia has the region’s highest GDP and spends nearly three times as much on defense as any other country in the region.59 The Saudi population, however, is less than half of Iran’s sixtysix million, and the Kingdom faces the possibility of domestic instability from both Sunni reformers and the Shiite minority.60 Furthermore, the Saudi military is notorious for having modern equipment but poorly trained and unmotivated soldiers.61

Iran is the mirror image of Saudi Arabia. Iran has more than twice the Kingdom’s population, but its GDP is substantially lower. On a per capita basis, Iran’s GDP is only $5,400, just over a third of the level in Saudi Arabia. Therefore, Iran does not have much money to spend on its military, explaining its paltry $9.6 billion per year defense budget (Saudi spends $41 billion). Since the 1979 Iranian revolution, Iran has relied on a large, poorly trained military that Iranian leaders hope has sufficient zeal to defend the country. The equation worked—barely—in the 1980s when Iraq invaded Iran.62 But the Iranian military has essentially none of the modern weapons and advanced training required to pose a serious offensive military threat to Iran’s neighbors.63

Iraq was once the most powerful country along the Persian Gulf littoral. It boasted the region’s second-biggest population, annual oil income that rivaled Iran, and a military that was unmatched in the region. But two disastrous wars, thirteen years of sanctions, and seven years of insurgency have crippled the country: it will have virtually no offensive military power for the foreseeable future. Iraq seems more likely to roil markets because of its weakness (which allegedly invites predation from its neighbors) than because it might launch a bid for hegemony. Pg. 474-476

#### No Middle East war

Maloney and Takeyh 7—\*senior fellow for Middle East Policy at the Saban Center for Middle East Studies at the Brookings Institution AND \*\*senior fellow for Middle East Studies at the Council on Foreign Relations (Susan and Ray, International Herald Tribune, 6/28, “Why the Iraq War Won't Engulf the Mideast,”

http://www.brookings.edu/opinions/2007/0628iraq\_maloney.aspx)

Yet, the Saudis, Iranians, Jordanians, Syrians, and others are very unlikely to go to war either to protect their own sect or ethnic group or to prevent one country from gaining the upper hand in Iraq. The reasons are fairly straightforward. First, Middle Eastern leaders, like politicians everywhere, are primarily interested in one thing: self-preservation. Committing forces to Iraq is an inherently risky proposition, which, if the conflict went badly, could threaten domestic political stability. Moreover, most Arab armies are geared toward regime protection rather than projecting power and thus have little capability for sending troops////

 to Iraq. Second, there is cause for concern about the so-called blowback scenario in which jihadis returning from Iraq destabilize their home countries, plunging the region into conflict. Middle Eastern leaders are preparing for this possibility. Unlike in the 1990s, when Arab fighters in the Afghan jihad against the Soviet Union returned to Algeria, Egypt and Saudi Arabia and became a source of instability, Arab security services are being vigilant about who is coming in and going from their countries. In the last month, the Saudi government has arrested approximately 200 people suspected of ties with militants. Riyadh is also building a 700 kilometer wall along part of its frontier with Iraq in order to keep militants out of the kingdom. Finally, there is no precedent for Arab leaders to commit forces to conflicts in which they are not directly involved. The Iraqis and the Saudis did send small contingents to fight the Israelis in 1948 and 1967, but they were either ineffective or never made it. In the 1970s and 1980s, Arab countries other than Syria, which had a compelling interest in establishing its hegemony over Lebanon, never committed forces either to protect the Lebanese from the Israelis or from other Lebanese. The civil war in Lebanon was regarded as someone else's fight. Indeed, this is the way many leaders view the current situation in Iraq. To Cairo, Amman and Riyadh, the situation in Iraq is worrisome, but in the end it is an Iraqi and American fight. As far as Iranian mullahs are concerned, they have long preferred to press their interests through proxies as opposed to direct engagement. At a time when Tehran has access and influence over powerful Shiite militias, a massive cross-border incursion is both unlikely and unnecessary. So Iraqis will remain locked in a sectarian and ethnic struggle that outside powers may abet, but will remain within the borders of Iraq. The Middle East is a region both prone and accustomed to civil wars. But given its experience with ambiguous conflicts, the region has also developed an intuitive ability to contain its civil strife and prevent local conflicts from enveloping the entire Middle East.

## \*\*\* 2NC

### 1nc D – Intervention

**The Gulf will remain strategically important to the US – Independence doesn’t solve**

**McNally 11** - President @ The Rapidan Group [Robert McNally, “Subject: "Changing Energy Markets and U.S. National Security" Hearing of the Terrorism, Nonproliferation and Trade Subcommittee of the House Foreign Affairs Committee, CQ Congressional Testimony, December 16, 2011 Friday

But the good news must be viewed in perspective. Our energy security is and will remain strongly linked to trends and developments in the global oil market, **not just our import share**. We are and will remain vulnerable to price shocks caused by tightening global supply-demand fundamentals and geopolitical disruptions anywhere in the global oil market. And the strategic importance of the Persian Gulf region and its enormous, low-cost hydrocarbon reserves is likely to grow in the coming decades as **Asia taps them to fuel growth**. Our geopolitical and homeland security interests will remain closely bound to the security of the Persian Gulf region, the **sea-lanes** to and from it, and the ability to prevent Gulf countries from **spending their windfalls** on threats to US and global security. //1nc Defense

**US has diversified away from political opponents – No oil wars**

**Mityakov et al. 11** – Professor of Economics @ Clemson University [Sergey Mityakov, Heiwai Tang (Professor of Economics @ Tufts University, & Kevin K. Tsui (Professor of Economics @ Clemson University) Energy Security and International Relations: Evidence from Oil Import Diversification, March 2011, pg. <http://www.econ.cuhk.edu.hk/dept/seminar/10-11/2nd-term/PoliticsOilTradeCUHK.pdf>]

We have documented a significant negative association between political distance and oil imports to major powers. While we do not completely rule out the possibility of reverse causality, our stylized examples and the timing of the changes in relations (especially when they are driven by political leadership turnover) in our regressions suggest that international relations affect oil trade. More importantly, this effect is **robust** to controlling for economic sanctions and militarized interstate disputes, and hence the political oil import diversification is more than a wartime phenomenon. In other words, the effect of political distance we focus on is distinct from a disruption effect, and we demonstrate this by showing that the effect survives even when all countries engaged in militarized dispute are excluded from the data.

To the extent that major powers do not minimize transportation cost of oil trade, we have identified a political cost of oil dependence even in the absence of interstate conflict or foreign intervention. Quantifying this cost of oil dependence provides a useful step towards a better understanding of the relationship between energy policy and foreign policy. Our paper also adds to the growing literature of the role of politics in international trade. The evidence we presented suggest that **bilateral trade can be a political choice**, with an important qualification that the effects of international politics on bilateral trade are heterogeneous across both countries and commodities. In particular, international politics matters more for major powers importing strategic commodities. Furthermore, in the case of the United States, the incentive to diversify the sources of oil imports away from her political opponents appears to be stronger when the exporter is nondemocratic.

Until recently, none of the major oil producers of the Middle East and North Africa (MENA) region are democratic. The revolutions and protests in Tunisia, Egypt, Libya, Bahrain, and other parts of the MENA region are one of the most important political events since the collapse of the Soviet Union. Yet, it is still highly uncertain about the types of governments that will emerge in these countries. Our findings suggest that both the form of the new governments and their relations with the United States as well as other major power can have profound impact on the global oil trade pattern and the cost of energy. Pg. 17-18 //1nc

### Shock – Iran: No Hormuz attack

**They can’t close the Strait – It is physically impossible**

**Gholz & Press 10** - Professor of public affairs @ University of Texas-Austin & Professor of government @ Dartmouth University [Eugene Gholz & Daryl G. Press, “Protecting “The Prize”: Oil and the U.S. National Interest,” Security Studies, 19:453–485, 2010

Thankfully, no country in the Gulf could close the Strait of Hormuz.71 Iran, the country best positioned geographically to try, could harass shipping and damage some tankers.72 It could not, however, close the strait, nor could it seriously disrupt shipping for an extended period of time.73 The mission of creating a prolonged disruption to that much commerce is simply too challenging, especially for a middleweight military power like Iran. First, even at its narrowest point, the strait is 34 km across, and almost all of that water is deep enough for a laden supertanker to safely pass. Physically blocking the waterway, for instance with scuttled ships, is therefore implausible.74 pg. 478

**Its antiship missiles are terrible**

**Gholz & Press 10** - Professor of public affairs @ University of Texas-Austin & Professor of government @ Dartmouth University [Eugene Gholz & Daryl G. Press, “Protecting “The Prize”: Oil and the U.S. National Interest,” Security Studies, 19:453–485, 2010

Second, if Iran tried to use antiship missiles to close the strait, it would be constrained by the missiles’ limited effectiveness against oil tankers, and the heavy ship traffic through the strait would quickly consume Iran’s entire arsenal. Iran’s missile stockpile numbers in the hundreds.75 Those missiles would be pitted against an average of more than one thousand large commercial ships entering the Gulf each month, including more than two hundred large oil tankers.76 Reliably distinguishing between oil tankers and other potential targets would not be simple in the Persian Gulf haze or at night, and during a crisis, shipping would scatter to avoid the missile batteries and complicate targeting.77 Moreover, each attack on a tanker (or merchantman misidentified as a tanker) would require several shots. During the Tanker War, many missiles launched at undefended commercial ships failed to function properly or missed their targets. Even when they hit, antiship missiles are not particularly lethal against large commercial ships (in contrast to their highprofile successes against smaller warships like the HMS Sheffield, the USS Stark, and the INS Hanit). The tankers’ thick hulls, compartmentalized construction, fire-inert reservoirs of crude oil, and advanced fire-suppression systems limit damage from missile strikes.78 pg. 478

**Missiles will fail – Tanker War proves**

**Gholz & Press 10** - Professor of public affairs @ University of Texas-Austin & Professor of government @ Dartmouth University [Eugene Gholz & Daryl G. Press, “Protecting “The Prize”: Oil and the U.S. National Interest,” Security Studies, 19:453–485, 2010

During the Tanker War, several tankers survived five or even six missile hits without sinking.79 Missile technology has progressed since the Tanker War, but the new missiles are unlikely to be dramatically more effective against oil tankers.80 So to effectively disrupt a single tanker’s transit, Iran would have to launch a substantial volley of missiles to account for target misidentification, outright malfunctions and misses, and the need to hit a tanker multiple times to disable it. With its limited arsenal, Iran could not use missiles to close the strait and overwhelm adaptation in the oil market. Pg. 478-479

### No ME war

#### No Middle East war

Maloney and Takeyh 7—\*senior fellow for Middle East Policy at the Saban Center for Middle East Studies at the Brookings Institution AND \*\*senior fellow for Middle East Studies at the Council on Foreign Relations (Susan and Ray, International Herald Tribune, 6/28, “Why the Iraq War Won't Engulf the Mideast,”

http://www.brookings.edu/opinions/2007/0628iraq\_maloney.aspx)

Yet, the Saudis, Iranians, Jordanians, Syrians, and others are very unlikely to go to war either to protect their own sect or ethnic group or to prevent one country from gaining the upper hand in Iraq. The reasons are fairly straightforward. First, Middle Eastern leaders, like politicians everywhere, are primarily interested in one thing: self-preservation. Committing forces to Iraq is an inherently risky proposition, which, if the conflict went badly, could threaten domestic political stability. Moreover, most Arab armies are geared toward regime protection rather than projecting power and thus have little capability for sending troops////

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#### De-escalation and global deterrence---best empirical cases prove no conflict despite heightened tensions, instability, and regional threats

**Terrill 9,** member of Strategic Studies Institute (SSI) since October 2001; General Douglas MacArthur Professor of National Security Affairs; Middle East Nonprolif analyst for the International Assessments Division of the Lawrence Livermore National Laboratory (LLNL); Visiting Professor at the U.S. Air War College; former faculty member at Old Dominion University; retired U.S. Army Reserve lieutenant colonel and Foreign Area Officer (Middle East); published in numerous academic journals; participated in the Middle Eastern Arms Control and Regional Security (ACRS) Track 2 talks, which are part of the Middle East Peace Process; served as a member of the military and security working group of the Baker/Hamilton Iraq Study; holds a B.A. from California State Polytechnic University; M.A. from the University of California, Riverside, both in Political Science; holds a Ph.D. in International Relations from Claremont Graduate Universit—(W. Andrew Terrill, Escalation and intrawar deterrence During limited wars in the middle east,” September 2009, http://www.strategicstudiesinstitute.army.mil/pdffiles/pub941.pdf)

The number of declared nuclear powers has expanded significantly in the last 20 years to include Pakistan, India, and North Korea. Additionally, other powers such as Iran are almost certainly striving for a nuclear weapons capability while a number of count- ries in the developing world possess or seek biological and chemical weapons. In this milieu, a central purpose of this monograph by W. Andrew Terrill is to reexamine two earlier conflicts for insights that may be relevant for ongoing dangers during limited wars involving nations possessing chemical or biological weapons or emerging nuclear arsenals. Decision-makers from the United States and other countries may have to consider the circumstances under which a smaller and weaker enemy will use nuclear weapons or other mass destruction weapons. Some of Dr. Terrill’s observations may be particularly useful for policymakers dealing with future crises involving developing nations that possess weapons of mass destruction (WMD). Although it is possible that the United States could be a party to such a conflict, any crisis involving nuclear weapons states is expected to be of inherent concern to Washington, even if it is not a combatant. Dr. Terrill has examined two important **Mid**dle Eastern wars. These conflicts are the 1973 Arab- Israeli War and the 1991 Gulf War. This monograph may be particularly valuable in providing readers, including senior military and political leaders, with a discussion of the implications of these historical case studies in which WMD-armed nations may have seriously **considered** their use **but ultimately did not resort to them**. Both of these wars were fought at the conventional level, although the prospect of Israel using nuclear weapons (1973), Egypt using biological weapons (1973), or Iraq using chemical and biological weapons (1991) were of serious concern at various points during the fighting. The prospect of a U.S. war with WMD-armed opponents (such as occurred in 1991) raises the question of how **escalation can be controlled** in such circumstances and what are the most likelyways that intrawar deterrence can break down. This monograph will consider why **efforts at escalation control and intrawar deterrence were successful** in the two case studies and assess the points at which these efforts were under the most intensive stress that might have caused them to fail. Dr. Terrill notes that intrawar deterrence is always difficult and usually based on a variety of factors that no combatant can control in all circumstances of an ongoing conflict. The Strategic Studies Institute is pleased to offer this monograph as a contribution to the national secur- ity debate on this important subject as our nation continues to grapple with a variety of problems associated with the proliferation of nuclear, biological, and chemical weapons. This analysis should be especially useful to U.S. strategic leaders and intelli- gence professionals as they seek to address the complicated interplay of factors related to regional security issues and the support of local allies. This work may also benefit those seeking greater understanding of long range issues of Middle Eastern and global security. We hope this work will be of benefit to officers of all services as well as other U.S. Government officials involved in military planning, and that it may cause them to reconsider some of the instances where intrawar deterrence seemed to work well but may have done so by a much closer margin than future planners can comfortably accept. In this regard, Dr. Terrill’s work is important to understanding the **lessons** of these conflicts which might **otherwise be forgotten or oversimplified**. Additionally, an understanding of the issues involved with **these earlier case studies** may be **useful in future circumstances** where the United States may seek to **deter wartime WMD** use by potential adversaries such as Iran or North Korea. The two case studies may also point out the inherent difficulties in doing so and the need to enter into conflict with these states only if one is prepared to accept the strong possibility that any efforts to control escalation have a good chance of breaking down. This understanding is particularly important in a wartime environment in which all parties should rationally have an interest in controlling escalation, but may have trouble doing so due to both systemic and wartime misperceptions and mistakes that distort communications between adversaries and may cause fundamental misunderstandings about the nature of the conflict in which these states may find themselves embroiled.

#### No global escalation

**Dyer, 02** – Ph.D. in Military and Middle Eastern History from the University of London and former professor at the Royal Military Academy Sandhurst and Oxford University (Gwynne, Queen’s Quarterly, “The coming war”, December, questia)

All of this indicates an extremely dangerous situation, with many variables that are impossible to assess fully. But there is one comforting reality here: this will not become World War III. Not long ago, wars in the Middle East always went to the brink very quickly, with the Americans and Soviets deeply involved on opposite sides, bristling their nuclear weapons at one another. And for quite some time we lived on the brink of oblivion. But that is over. World War III has been cancelled, and I don't think we could pump it up again no matter how hard we tried. The connections that once tied Middle Eastern confrontations to a global confrontation involving tens of thousands of nuclear weapons have all been undone. The East-West Cold War is finished. The truly dangerous powers in the world today are the industrialized countries in general. We are the ones with the resources and the technology to churn out weapons of mass destruction like sausages. But the good news is: we are out of the business.

### 2NC—AT: Runaway

#### It overwhelms all positive feedbacks

Idso and Idso 7 [Sherwood, Research Physicist @ US Water Conservation laboratory, and Craig, President of Center for the Study of Carbon Dioxide and Global change and PhD in Geography, “Carbon Dioxide and Global Change: Separating Scientific Fact from Personal Opinion”, 6-6, <http://www.co2science.org/education/reports/hansen/HansenTestimonyCritique.pdf>]

(6) Hansen says “doubling the amount of carbon dioxide in the atmosphere causes a global climate forcing similar in magnitude to that for a 2% increase of solar irradiance.” All else being equal, this statement may not be far off the mark. However, it does not consider all of the negative biological feedbacks that the warming produced by the initial forcing might kick into motion, which could cause the long-term effective magnitude of the primary forcing to be significantly less than its initial value. Neither does it consider the cooling effects produced by increases in various biological processes that may be induced solely by the growth-enhancing effects of the increase in the air’s CO2 content, which do not even require an impetus for warming in order to be put into play. An example of the first of these ameliorative phenomena involves dimethylsulfide or DMS, which is derived from its algal precursor dimethylsulphoniopropionate. Very briefly, and rather simplistically, in response to an initial increase in temperature (caused by an increase in the air's CO2 content, for example), the climate-stabilizing mechanism begins with a warming-induced increase in the productivity of certain marine microalgae or phytoplankton, which leads to a greater production of oceanic DMS and its release to the atmosphere, which boosts the number of gas-to-particle conversions occurring there, increasing the atmosphere's population of cloud condensation nuclei and, ultimately, the albedos of marine stratus and altostratus clouds, via a narrowing of the cloud droplet spectrum and a decrease in the mean radius of the cloud droplets, both of which phenomena tend to counter the initial impetus for warming and thereby decrease the “all-else-being-equal” effect of the increase in the air’s CO2 concentration, as originally suggested by Charlson et al. (1987). Literally hundreds of peer-reviewed scientific papers have been published on this important subject over the past two decades, and recent work continues to demonstrate the great significance of this major negative feedback phenomenon. In one such study, Meskhidze and Nenes (2006) investigated the effects of ocean biological productivity on the microphysical and radiative properties of marine clouds over a large and seasonally-recurring phytoplankton bloom in the Southern Ocean in the vicinity of South Georgia Island, where the upwelling of nutrient-rich waters, as they describe it, “can support massive phytoplankton blooms, with chlorophyll-a concentrations more than an order of magnitude higher than the background.” In this ambitious endeavor, Meskhidze and Nenes used the Sea-viewing Wide Field-of-view Sensor to obtain the needed chlorophyll data and the Moderate Resolution Imaging Spectroradiometer to determine the effective radii of cloud condensation nuclei. These efforts revealed, in their words, that the “cloud droplet number concentration over the bloom was twice what it was away from the bloom, and cloud effective radius was reduced by 30%.” In addition, they report that “the resulting change in the short-wave radiative flux at the top of the atmosphere was [a negative] 15 watts per square meter, comparable to the aerosol indirect effect over highly polluted regions,” and, we might add, much greater locally than the opposite (positive) radiative forcing typically attributed to the combined increases in the concentrations of all greenhouse gases emitted to the atmosphere since the inception of the Industrial Revolution.

#### AND models exaggerate sensitivity—feedbacks are overwhelmingly negative

Linzen and Choi 11 [Richardm Program in Atmospheres, Oceans, and Climate, Massachusetts Institute of Technology, Cambridge and Yong-Sang, Department of Environmental Science and Engineering, Ewha Womans University, Seoul, Korea, “On the Observational Determination of Climate Sensitivity and Its Implications,” Asia-Pacific J. Atmos. Sci., 47(4), 377-390]

Abstract: We estimate climate sensitivity from observations, using the deseasonalized fluctuations in sea surface temperatures (SSTs) and the concurrent fluctuations in the top-of-atmosphere (TOA) outgoing radiation from the ERBE (1985-1999) and CERES (2000- 2008) satellite instruments. Distinct periods of warming and cooling in the SSTs were used to evaluate feedbacks. An earlier study (Lindzen and Choi, 2009) was subject to significant criticisms. The present paper is an expansion of the earlier paper where the various criticisms are taken into account. The present analysis accounts for the 72 day precession period for the ERBE satellite in a more appropriate manner than in the earlier paper. We develop a method to distinguish noise in the outgoing radiation as well as radiation changes that are forcing SST changes from those radiation changes that constitute feedbacks to changes in SST. We demonstrate that our new method does moderately well in distinguishing positive from negative feedbacks and in quantifying negative feedbacks. In contrast, we show that simple regression methods used by several existing papers generally exaggerate positive feedbacks and even show positive feedbacks when actual feedbacks are negative. We argue that feedbacks are largely concentrated in the tropics, and the tropical feedbacks can be adjusted to account for their impact on the globe as a whole. Indeed, we show that including all CERES data (not just from the tropics) leads to results similar to what are obtained for the tropics alone - though with more noise. We again find that the outgoing radiation resulting from SST fluctuations exceeds the zero feedback response thus implying negative feedback. In contrast to this, the calculated TOA outgoing radiation fluxes from 11 atmospheric models forced by the observed SST are less than the zero feedback response, consistent with the positive feedbacks that characterize these models. The results imply that the models are exaggerating climate sensitivity.

### 2NC—No Impact

#### Reject their try or die impact framing—they cherry-pick the worst case scenarios and assume they are likely—every scientific study concludes that the likelihood of such devastation is virtually zero

Eastin et al. 11 [Josh, Professor of Political Science at the University of Washington, Reiner Grundmann and Aseem Prakash, “The two limits debates: “Limits to Growth” and climate change,” Futures, February, Vol 43, Issue 1, pp. 16-26, ScienceDirect]

And Hjerpe and Linnér point out, ‘The IPCC ‘describes scenarios as ‘alternative images of how the future might unfold … to analyze how driving forces may influence future emission outcomes’ (…), i.e., they are not designed to provide blueprints for the future. The IPCC … emphasizes that neither probability nor desirability is attached to the various scenario families … The future evolution of society is recognized as an uncertain process of interaction between, for example, demographic development, socio-economic development, and technological change.’ [[50]](http://www.sciencedirect.com/science/article/pii/S0016328710000352#bib47)

There is no probability assigned to the various scenarios which opens the way for decision makers to pick the one that aligns with their preconceptions. In this sense, both LtG and IPCC have used scenarios in order to communicate the possibility of a dystopian future, not as a prediction, but as a reminder that something needs to be done urgently if we are to prevent the worst.

#### Shouldn’t draw conclusions based on climate models—too much uncertainty.

Hoffman 12 [Doug L, adjunct Professor of Computer Science at Hendrix College and the University of Central Arkansas, author of the Resilient Earth, “Stop Them, Before They Model Again,” 4-17, <http://www.theresilientearth.com/?q=content/stop-them-they-model-again>]

In these days of faltering economies and tight government spending there still seems to be an infinite amount of funding available to promote ever larger computer based climate studies. The latest such study, “Broad range of 2050 warming from an observationally constrained large climate model ensemble,” was published online on March 25, 2012. A veritable potpourri of international climate science boffins applied yet another technique to the problem of turning sow's ear climate model results into a silk purse predictions to help bolster the IPCC's flagging fortunes. The paper's abstract explains the work and motivation:

Incomplete understanding of three aspects of the climate system—equilibrium climate sensitivity, rate of ocean heat uptake and historical aerosol forcing—and the physical processes underlying them lead to uncertainties in our assessment of the global-mean temperature evolution in the twenty-first century. Explorations of these uncertainties have so far relied on scaling approaches, large ensembles of simplified climate models1, or small ensembles of complex coupled atmosphere–ocean general circulation models which under-represent uncertainties in key climate system properties derived from independent sources. Here we present results from a multi-thousand-member perturbed-physics ensemble of transient coupled atmosphere–ocean general circulation model simulations. We find that model versions that reproduce observed surface temperature changes over the past 50 years show global-mean temperature increases of 1.4–3K by 2050, relative to 1961–1990, under a mid-range forcing scenario. This range of warming is broadly consistent with the expert assessment provided by the Intergovernmental Panel on Climate Change Fourth Assessment Report, but extends towards larger warming than observed in ensembles-of-opportunity typically used for climate impact assessments. From our simulations, we conclude that warming by the middle of the twenty-first century that is stronger than earlier estimates is consistent with recent observed temperature changes and a mid-range ‘no mitigation’ scenario for greenhouse-gas emissions.

The new trick that these savants applied to an existing climate model is called a perturbed-physics ensemble. Reportedly, the investigators created a large collection of model results (an ensemble) by “perturbing the physics in the atmosphere, ocean and sulphur cycle components, with transient simulations driven by a set of natural forcing scenarios.” Much like tapping a bell with a hammer and observing the vibrations, they tweaked some of the model's parameters and watched what happened to the output. The claim is, that by analyzing a large number of these “perturbed” model runs, conclusions can be made regarding the error present in those models. Naturally, given that their results were “broadly consistent” with previous IPCC generated claptrap, the conclusions reached will surprise no one. Witness the figure below.

Why the researchers felt that yet another massive modeling study was needed lies in an honest assessment of the model use to prepare the previous IPCC report, AR4. Recall that the people of the world were asked to accept the output from those modeling runs as a valid prediction of where Earth's future climate was headed. Here is what these scientists are saying about those older model reports:

In the latest generation of coupled atmosphere–ocean general circulation models (AOGCMs) contributing to the Coupled Model Intercomparison Project phase 3 (CMIP-3), uncertainties in key properties controlling the twenty-first century response to sustained anthropogenic greenhouse-gas forcing were not fully sampled, partially owing to a correlation between climate sensitivity and aerosol forcing, a tendency to overestimate ocean heat uptake and compensation between short-wave and long-wave feedbacks. This complicates the interpretation of the ensemble spread as a direct uncertainty estimate, a point reflected in the fact that the ‘likely’ (>66% probability) uncertainty range on the transient response was explicitly subjectively assessed as −40% to +60% of the CMIP-3 ensemble mean for global-mean temperature in 2100, in the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4).

The old models do not account for “key properties” that control climate to the point that the results are so uncertain as to be meaningless. This is unsurprising to those of us familiar with computer modeling in general and climate modeling in particular. “From this evidence it is clear that the CMIP-3 ensemble, which represents a valuable expression of plausible responses consistent with our limited ability to explore model structural uncertainties, fails to reflect the full range of uncertainties indicated by expert opinion and other methods,” the authors conclude. In other words, the older model results are crap.

Yet the AR4 report's conclusions were justified using such twaddle. As the authors state: “In the absence of uncertainty guidance or indicators at regional scales, studies have relied on the CMIP-3 ensemble spread as a proxy for response uncertainty, or statistical post-processing to correct and inflate uncertainty estimates, at the risk of violating the physical constraints provided by dynamical AOGCM simulations, especially when extrapolating beyond the range of behaviour in the raw ensemble.” Violating physical constraints is modeling speak for the program acting in a way that contradicts the laws of physical reality—an indication that the models used do not accurately represent nature.

Still, the reader is asked to accept this new analysis as proving the modeling approach's veracity. “Perturbed-physics ensembles offer a systematic approach to quantify uncertainty in models of the climate system response to external forcing, albeit within a given model structure,” the authors write. That last qualification is key, “within a given model structure.” More plainly put, if your model is wrong you cannot get good results. So they analyzed a multi-thousand-member ensemble of transient AOGCM simulations from 1920 to 2080 using HadCM3L, a version of the UK Met Office Unified Model, and found their results stayed within the constraints programmed into the model (what a surprise). Other caveats include: unexpectedly observing little relationship between climate sensitivity and aerosol forcing; difficulty in comparing the control simulation like-for-like to any period in the past, partially blamed on the “paucity of observations” at the start of the twentieth century; and under-sampling uncertainty in ocean heat uptake arising from ocean physics through perturbing only a single, coarse-resolution, ocean model structure.

The bottom line on all this statistical and modeling slight of hand is this: “Assessing goodness-of-fit, which represents a limited expression of model error, requires a measure of the expected error between model simulations and observations due to sampling uncertainty, assuming it is primarily from internally-generated climate variability.” There is absolutely no justification in making that last assumption. All they are measuring is how stable their models are with respect to the output the model would generate if unperturbed. The result has no bearing on whether the model in question accurately represents Earth's actual climate system. This is hand-waving at its most creative.

So if this new “study” is not really an improvement on previous computer driven shams why is it appearing now? Think of this report as the first salvo in the run up to the next IPCC report, due out sometime next year. But surely the IPCC has learned its lesson, you say, they must have figured out that making bogus claims of impending disaster, unsubstantiated by real science, has only lead to their own marginalization? Think again. Consider the words of the IPCC's discredited but dogged leader.

“When the IPCC’s fifth assessment comes out in 2013 or 2014, there will be a major revival of interest in action that has to be taken,” said Dr. Pachauri, speaking of the periodic assessments rendered by the group of more than 400 scientists around the world that he leads. “People are going to say, ‘My God, we are going to have to take action much faster than we had planned.’

### AT: Consensus

#### Consensus shifts neg—growing skepticism against climate change

WSJ 12 [January 26, 2012, Letter signed by the follow scientists: Claude Allegre, former director of the Institute for the Study of the Earth, University of Paris; J. Scott Armstrong, cofounder of the Journal of Forecasting and the International Journal of Forecasting; Jan Breslow, head of the Laboratory of Biochemical Genetics and Metabolism, Rockefeller University; Roger Cohen, fellow, American Physical Society; Edward David, member, National Academy of Engineering and National Academy of Sciences; William Happer, professor of physics, Princeton; Michael Kelly, professor of technology, University of Cambridge, U.K.; William Kininmonth, former head of climate research at the Australian Bureau of Meteorology; Richard Lindzen, professor of atmospheric sciences, MIT; James McGrath, professor of chemistry, Virginia Technical University; Rodney Nichols, former president and CEO of the New York Academy of Sciences; Burt Rutan, aerospace engineer, designer of Voyager and SpaceShipOne; Harrison H. Schmitt, Apollo 17 astronaut and former U.S. senator; Nir Shaviv, professor of astrophysics, Hebrew University, Jerusalem; Henk Tennekes, former director, Royal Dutch Meteorological Service; Antonio Zichichi, president of the World Federation of Scientists, Geneva, “No Need to Panic About Global Warming,” http://online.wsj.com/article/SB10001424052970204301404577171531838421366.html]

A candidate for public office in any contemporary democracy may have to consider what, if anything, to do about "global warming." Candidates should understand that the oft-repeated claim that nearly all scientists demand that something dramatic be done to stop global warming is not true. In fact, a large and growing number of distinguished scientists and engineers do not agree that drastic actions on global warming are needed.

In September, Nobel Prize-winning physicist Ivar Giaever, a supporter of President Obama in the last election, publicly resigned from the American Physical Society (APS) with a letter that begins: "I did not renew [my membership] because I cannot live with the [APS policy] statement: 'The evidence is incontrovertible: Global warming is occurring. If no mitigating actions are taken, significant disruptions in the Earth's physical and ecological systems, social systems, security and human health are likely to occur. We must reduce emissions of greenhouse gases beginning now.' In the APS it is OK to discuss whether the mass of the proton changes over time and how a multi-universe behaves, but the evidence of global warming is incontrovertible?"

In spite of a multidecade international campaign to enforce the message that increasing amounts of the "pollutant" carbon dioxide will destroy civilization, large numbers of scientists, many very prominent, share the opinions of Dr. Giaever. And the number of scientific "heretics" is growing with each passing year. The reason is a collection of stubborn scientific facts.

Perhaps the most inconvenient fact is the lack of global warming for well over 10 years now. This is known to the warming establishment, as one can see from the 2009 "Climategate" email of climate scientist Kevin Trenberth: "The fact is that we can't account for the lack of warming at the moment and it is a travesty that we can't." But the warming is only missing if one believes computer models where so-called feedbacks involving water vapor and clouds greatly amplify the small effect of CO2.

The lack of warming for more than a decade—indeed, the smaller-than-predicted warming over the 22 years since the U.N.'s Intergovernmental Panel on Climate Change (IPCC) began issuing projections—suggests that computer models have greatly exaggerated how much warming additional CO2 can cause. Faced with this embarrassment, those promoting alarm have shifted their drumbeat from warming to weather extremes, to enable anything unusual that happens in our chaotic climate to be ascribed to CO2.

The fact is that CO2 is not a pollutant. CO2 is a colorless and odorless gas, exhaled at high concentrations by each of us, and a key component of the biosphere's life cycle. Plants do so much better with more CO2 that greenhouse operators often increase the CO2 concentrations by factors of three or four to get better growth. This is no surprise since plants and animals evolved when CO2 concentrations were about 10 times larger than they are today. Better plant varieties, chemical fertilizers and agricultural management contributed to the great increase in agricultural yields of the past century, but part of the increase almost certainly came from additional CO2 in the atmosphere.

### 2NC—No Extinction

#### Adaptation means no catastrophic impact to warming

Kenny 12 [April 9, 2012, Charles, senior fellow at the Center for Global Development, a Schwartz fellow at the New America Foundation, and author, most recently, of Getting Better: Why Global Development Is Succeeding and How We Can Improve the World Even More., “Not Too Hot to Handle,” http://www.foreignpolicy.com/articles/2012/04/09/not\_too\_hot\_to\_handle?print=yes&hidecomments=yes&page=full]

But for all international diplomats appear desperate to affirm the self-worth of pessimists and doomsayers worldwide, it is important to put climate change in a broader context. It is a vital global issue -- one that threatens to slow the worldwide march toward improved quality of life. Climate change is already responsible for more extreme weather and an accelerating rate of species extinction -- and may ultimately kill off as many as 40 percent of all living species. But it is also a problem that we know how to tackle, and one to which we have some time to respond before it is likely to completely derail progress. And that's good news, because the fact that it's manageable is the best reason to try to tackle it rather than abandon all hope like a steerage class passenger in the bowels of the Titanic.

Start with the economy. The Stern Review, led by the distinguished British economist Nicholas Stern, is the most comprehensive look to date at the economics of climate change. It suggests that, in terms of income, greenhouse gasses are a threat to global growth, but hardly an immediate or catastrophic one. Take the impact of climate change on the developing world. The most depressing forecast in terms of developing country growth in Stern's paper is the "A2 scenario" -- one of a series of economic and greenhouse gas emissions forecasts created for the U.N.'s Intergovernmental Panel on Climate Change (IPCC). It's a model that predicts slow global growth and income convergence (poor countries catching up to rich countries). But even under this model, Afghanistan's GDP per capita climbs sixfold over the next 90 years, India and China ninefold, and Ethiopia's income increases by a factor of 10. Knock off a third for the most pessimistic simulation of the economic impact of climate change suggested by the Stern report, and people in those countries are still markedly better off -- four times as rich for Afghanistan, a little more than six times as rich for Ethiopia.

It's worth emphasizing that the Stern report suggests that the costs of dramatically reducing greenhouse-gas emissions is closer to 1 (or maybe 2) percent of world GDP -- in the region of $600 billion to $1.2 trillion today. The economic case for responding to climate change by pricing carbon and investing in alternate energy sources is a slam dunk. But for all the likelihood that the world will be a poorer, denuded place than it would be if we responded rapidly to reduce greenhouse gases, the global economy is probably not going to collapse over the next century even if we are idiotic enough to delay our response to climate change by a few years. For all the flooding, the drought, and the skyrocketing bills for air conditioning, the economy would keep on expanding, according to the data that Stern uses.

And what about the impact on global health? Suggestions that malaria has already spread as a result of climate change and that malaria deaths will expand dramatically as a result of warming in the future don't fit the evidence of declining deaths and reduced malarial spread over the last century. The authors of a recent study published in the journal Nature conclude that the forecasted future effects of rising temperatures on malaria "are at least one order of magnitude smaller than the changes observed since about 1900 and about two orders of magnitude smaller than those that can be achieved by the effective scale-up of key control measures." In other words, climate change is and will likely remain a small factor in the toll of malaria deaths into the foreseeable future.

What about other diseases? Christian Zimmermann at the University of Connecticut and Douglas Gollin at Williams evaluate the likely impact of a 3-degree rise in temperatures on tropical diseases like dengue fever, which causes half a million cases of hemorrhagic fever and 22,000 deaths each year. Most of the vectors for such diseases -- mosquitoes, biting flies, and so on -- do poorly in frost. So if the weather stays warmer, these diseases are likely to spread. At the same time, there are existing tools to prevent or treat most tropical diseases, and Zimmerman and Gollin suggest "rather modest improvements in protection efficacy could compensate for the consequences of climate change." We can deal with this one.

It's the same with agriculture. Global warming will have many negative (and a few positive) impacts on food supply, but it is likely that other impacts -- both positive, including technological change, and negative, like the exhaustion of aquifers-- will have far bigger effects. The 2001 IPCC report suggested that climate change over the long term could reduce agricultural yields by as much as 30 percent. Compare that with the 90 percent increase in rice yields in Indonesia between 1970 and 2006, for example.

Again, while climate change will make extreme weather events and natural disasters like flooding and hurricanes more common, the negative effect on global quality of life will be reduced if economies continue to grow. That's because, as Matthew Kahn from Tufts University has shown, the safest place to suffer a natural disaster is in a rich country. The more money that people and governments have, the more they can both afford and enforce building codes, land use regulations, and public infrastructure like flood defenses that lower death tolls.

Let's also not forget how human psychology works. Too many environmentalists suggest that dealing with climate change will take immediate and radical retooling of the global economy. It won't. It is affordable, practical, and wouldn't take a revolution. Giving out the message that the only path to sustainability will require medieval standards of living only puts everyone else off. And once you've convinced yourself the world is on an inevitable course to disaster if some corner of the U.S. Midwest is fracked once more or India builds another three coal-fueled power plants, the only logical thing to do when the fracking or the building occurs is to sit back, put your Toms shoes on the couch, and drink micro-brewed herbal tea until civilization collapses. Climate change isn't like that -- or at the very least, isn't like that yet.

So, if you're really just looking for a reason to strap on the "end of the world is nigh" placards and go for a walk, you can find better excuses -- like, say, the threat of global thermonuclear war or a rogue asteroid. The fight to curb greenhouse gas emissions is one for the hard-nosed optimist.

### Neg – CCS is decades away

**CCS for coal plants is a decade away**

**Marston & Moore 8** – Energy Regulatory Attorney & Oil and Gas Attorney [Philip M. Marston & Patricia A. Moore, “FROM EOR TO CCS: THE EVOLVING LEGAL AND REGULATORY FRAMEWORK FOR CARBON CAPTURE AND STORAGE,” Energy Law Journal, Vol. 29:421, 2008

As discussed above, the current literature and, indeed, current domestic and international events indicate that actual implementation of any new statutory scheme governing permanent storage of CO2 outside of oil and gas-bearing reservoirs is likely some years away. Even if legislation were passed, implementation by the relevant agencies would take considerable time. Moreover, actual implementation of CCS for coal-fired power plants will require new engineering and construction of commercial-sized pilot projects to prove the capture technology on a commercial scale. Only after these initial pilot commercial-scale projects have proven economically successful would deployment of the technology in new coal-fired power plants begin on a commercial scale. What this means is that – regardless of the current, very high level of interest in CCS projects – there will not be actual capture and storage of any considerable quantity of CO2 from coal-fired generating plants for years, and very possibly a decade or more.221 While CO2 capture from power plants may be years away, new anthropogenic sources of CO2 from industrial processes such as ammonia plants and CTL facilities are expected to come on line in the relatively near future.222 For this reason this article focuses here on a path forward for CCS that may be immediately available to a perspicacious oil and gas operator for creating a transitional path, from the incidental storage of CO2 that occurs naturally during EOR operations, to a future opportunity post-EOR operations for the incremental storage for CCS purposes.

### Neg – CCS not solve

#### Liability concerns deter

**Flatt 9** - Professor of Environmental Law U@ NC-Chapel Hill [Victor B. Flatt, “ARTICLE: PAVING THE LEGAL PATH FOR CARBON SEQUESTRATION FROM COAL,” Duke Environmental Law & Policy Forum, Spring, 2009, 19 Duke Envtl. L. & Pol'y F. 211

One of the most formidable barriers facing potential CCS operations is the possible liability costs of these operations. If the costs of CCS outweigh the benefits, it should not go forward and, generally, we rely on complex common law liability to send that market signal. [n49](http://www.lexisnexis.com.proxy.library.emory.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1341334750715&returnToKey=20_T15050743264&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.963019.771590781" \l "n49) However, liability is much more uncertain here, where economic signals do not operate efficiently. Even though studies indicate that the benefits of large-scale CCS operations should be substantial and bring little risk of harm to humans or the environment, [n50](http://www.lexisnexis.com.proxy.library.emory.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1341334750715&returnToKey=20_T15050743264&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.963019.771590781" \l "n50) differing liability rules and regulations exist, creating an uncertainty that poses a problem in promoting CCS. [n51](http://www.lexisnexis.com.proxy.library.emory.edu/lnacui2api/frame.do?reloadEntirePage=true&rand=1341334750715&returnToKey=20_T15050743264&parent=docview&target=results_DocumentContent&tokenKey=rsh-20.963019.771590781" \l "n51) CCS operators need some assurance that liability costs will not outweigh the benefit derived from implementing CCS operations. Without this predictability, the threat of uncertain liability costs will likely deter a large number of potential operators. Thus, it is necessary to create and adopt a liability scheme that encourages private industry to implement CCS operations, while protecting the public and the public interest.

## \*\*\* 1NR

**1NR—Overview**

**And it’s the only existential risk.**

**Bostrom 2** (Nick, Professor of Philosophy and Global Studies at Yale, *Existential Risks: Analyzing Human Extinction Scenarios and Related Hazards*, www.transhumanist.com/volume9/risks.html)

A much greater existential risk emerged with the build-up of nuclear arsenals in the US and the USSR. An all-out nuclear war was a possibility with both a substantial probability and with consequences that might have been persistent enough to qualify as **global and terminal**. There was a real worry among those best acquainted with the information available at the time that a nuclear Armageddon would occur and that it might annihilate our species or permanently destroy **human civilization**. Russia and the US retain large nuclear arsenals that could be used in a future confrontation, either accidentally or deliberately. There is also a risk that other states may one day build up large nuclear arsenals. Note however that a smaller nuclear exchange, between India and Pakistan for instance, is **not an existential risk**, since it would not destroy or thwart humankind’s potential permanently.

**Even small accidents ensure all out nuclear exchange.**

**Forrow 98** (Lachlan, MD, et al, *Accidental Nuclear War – A Post-Cold War Assessment*, New England Journal of Medicine, iis-db.stanford.edu/pubs/20625/acciden\_nuke\_war.pdf)

From Danger to Prevention Public health professionals now recognize that many, if not most, injuries and deaths from violence and accidents result from a predictable series of events that are, at least in principle, preventable. The direct toll that would result from an accidental nuclear attack of the type described above would dwarf all prior accidents in history. Furthermore, such an attack, even if accidental, might prompt a **retaliatory response** resulting in an **all-out nuclear exchange**. The World Health Organization has estimated that this would result in billions of direct and indirect casualties worldwide.

**All warheads would be launched in less than two minutes.**

**Blair 1** (Bruce, President of the Center for Defense Information, Senior fellow in the Foreign Policy Studies Program at the Brookings Institution, *Cold War Thinking Persists*, Foreign Policy in Focus, http://www.fpif.org/presentations/wmd01/blair.html)

The really incredible story here is that our two countries still operate nuclear weapons as though we remain our primary enemies--as though one or the other of us could launch a massive, cold-blooded, surprise nuclear strike on a moment's notice, and as though we need to continue to prepare to fight a large-scale nuclear war with each other in order to maintain our security. If this order went out today, not only to that launch crew in Wyoming, but to all the crews around the world, in Russia and the United States, how long do you think it would take them, from right now, from a standing start--no prior alerting or warning--to fire all of the missiles that are on alert today? And how much firepower would be unleashed right now? The answer is that that crew in Wyoming would--from the time they received the message until the time the 500 warheads were leaving their silos--take **two minutes**. It would take another ten minutes for the submarine crews to carry out their orders. All in all, **4,000 strategic warheads** could be fired collectively by Russia and the United States in a matter of just a few minutes, dispatching them on their 15-40 minute trips halfway around the planet to targets in our respective countries.

**1NR—Turns CCS**

**Only we access China—they will only use CCS if others pay for it.**

**Drahos 9** – Professor in Law and the Director of the Centre for the Governance of Knowledge and Development in the Regulatory Institutions Network @ Australian National University [Peter Drahos, “The China–US Relationship on Climate Change, Intellectual Property and CCS: Requiem for a Species?,” Queen Mary School of Law Legal Studies Research Paper, No. 36/2009, November 11, 2009

At their Strategic and Economic talks in July of 2009, the US and China signed a memorandum of understanding in which, amongst other things, they resolved to cooperate on ‘‘cleaner uses of coal and carbon capture and storage’’.15 Talk is cheap and CCS is not. Capturing CO2 is ‘‘highly energy-intensive and expensive’’, ranging from US$30 to $90 per tonne of CO2 and higher in some cases.16 Other estimates suggest that depending on the type of power plant CCS can add somewhere between 37 per cent and 76 per cent to the capital cost of a plant.17 Aside from the cost of CCS, the energy required in the capture process would mean that CCS plants would be around 14 per cent less efficient in generating electricity than non-CCS plants.18 These capital and efficiency costs become very large for China, costs that would have to be passed on to Chinese consumers. On top of this there is the R&D cost of CCS. The IEA in its review of various bilateral initiatives on clean coal technologies pointed out that ‘‘there is evidence to suggest that China will only participate in significant CCS activities if the other party provides funding to cover all direct and indirect costs in China’’.19 pg. 126

**1NR—Tensions Now**

**Arctic Council will facilitate US-Canada policy coordination**

**Bergh 12** - Researcher with the SIPRI Armed Conflict and Conflict Management Programme [Kristofer Bergh (Master’s degree in social sciences with a major in peace and conflict studies from Uppsala University) “THE ARCTIC POLICIES OF CANADA AND THE UNITED STATES: DOMESTIC MOTIVES AND INTERNATIONAL CONTEXT,” SIPRI Insights on Peace and Security. 2012/1July 2012

The Arctic ice is melting. If current trends continue, there will be dramatic changes in the region, with far-reaching implications. At the same time, the receding ice opens the region to **economic development**, including through the exploitation of previously inaccessible hydrocarbons and minerals. In September 2011, both the Northern Sea Route (along Russia’s north coast, formerly known as the Northeast Passage) and the Northwest Passage (along the northern coasts of Alaska and Canada) were open for some time, potentially creating shorter shipping routes between Asia, Europe and North America.1 Increased human activity in the sparsely populated and inhospitable Arctic requires new initiatives to achieve safety and security for the region’s environment and its inhabitants and visitors.

The nature of international governance in the Arctic has also changed, mainly through the development of the **Arctic Council**. The Council, which includes the eight states with Arctic territory and representatives of the region’s indigenous populations, has evolved into a decision-making organization with a permanent secretariat and budget and it now attracts more attention from the rest of the world.2 Since 2006, three successive chairmanships of the Council have been held by Nordic states—Norway (2006–2009), Denmark (2009–11) and Sweden (2011–13)—which agreed on a common set of priorities to pursue. From 2013 it will be chaired by Canada (2013–15) and then the United States (2015–17) and there is now an opportunity for these two states to formulate a **coordinated North American agenda** for the Arctic Council. However, this approach will be hindered by the two countries’ disagreements on several key Arctic issues. Pg. 1

**US-Canada support for the Arctic Council is high**

**Bergh 12** - Researcher with the SIPRI Armed Conflict and Conflict Management Programme [Kristofer Bergh (Master’s degree in social sciences with a major in peace and conflict studies from Uppsala University) “THE ARCTIC POLICIES OF CANADA AND THE UNITED STATES: DOMESTIC MOTIVES AND INTERNATIONAL CONTEXT,” SIPRI Insights on Peace and Security. 2012/1July 2012

Both countries express support for the Arctic Council and view the cooperation between the eight Arctic states within this forum as beneficial for the region as a whole. Canada has stated that the Council requires further development in the form of legally binding agreements, greater visibility and transparency, and a formalized secretariat and funding.14 The US presidential directive, in contrast, affirmed the limited mandate of the Council and expressed the desire that it not ‘be transformed into a formal international organization’, although this has since transpired.15 Nevertheless, both countries agree that the Arctic differs so much from the Antarctic that any implementation of a legal regime in the style of the 1959 Antarctic Treaty would be inappropriate.16 The Canadian policy also highlights the indigenous communities in the region and states that they should have influence over Canada’s Arctic foreign policy, both through direct contacts with the Canadian Government and through international forums such as the Arctic Council.17 pg. 4-5

**Robust Canadian oil production solidifies US-Canada energy coop**

**Cummins 6/27**/12 [Chip Cummins, “U.S. Wakes Up to North American Oil Abundance,” Wall Street Journal, June 27, 2012, 9:45 AM ET, pg. http://blogs.wsj.com/canadarealtime/2012/06/27/u-s-wakes-up-to-north-american-oil-abundance/]

Even as places like North Dakota ramp up output–recently passing Alaska as the 2nd biggest U.S. producer behind Texas–some of the biggest hydrocarbon output growth on the continent has come from up north in Canada. That’s promising to make Canadian-U.S. energy cooperation as important as it’s ever been, Mr. Gonzalez writes.

Canadian crude-oil production will more than double to 6.2 million barrels a day by 2030, from 3 million a day in 2011, growing faster than previously expected, according to the 2012 production forecast by the Canadian Association of Petroleum Producers, released a few weeks ago.

The new forecast also predicts output from the oil-sands region in Alberta to more than triple by 2030, from 1.6 million barrels a day in 2011 to 5 million barrels a day in 2030, the energy industry trade group said.

Canada’s oil-sands deposits hold the world’s third largest reserves of crude oil, behind Saudi Arabia and Venezuela. Canada, meanwhile, is the largest exporter of oil into the U.S., the world’s biggest oil consumer.

If recent forecasts for oil output growth out of North America hold true, the U.S. could knock Russia out of the No. 2 position for global producers, behind just Saudi Arabia. Canada, meanwhile, would move up to No. 4, ahead of Iran, CAPP estimates.

**1NR—Decline Now**

**Oil sands is the low-hanging fruit – They will be the first to go in the transition**

**Chastko 10** - Director of the International Relations Program @ University of Calgary [Paul Chastko, PhD, “The “Dirty Oil” Card and Canadian Foreign Policy,” Prepared for the Canadian Defence & Foreign Affairs Institute, October, 2010

Today, the environmental lobby is better organized, and financed, than ever before and the oil sands have become the **focal point** for efforts to begin the shift to the **post-carbon economy**. San Francisco-based Forest Ethics have encouraged U.S. retailers to boycott gasoline refined Canada’s oil sands provides the spare capacity that solves their impact – US domestic production from oil from the oil sands. Others, like the Rethink Alberta campaign, targeted Alberta’s tourism industry and compared the oil sands to BP’s oil spill in the Gulf of Mexico by juxtaposing images of ducks in tailings ponds and oil-soaked wildlife along the Gulf Coast.5 Still others, like Boston based Green Century Funds, or UK based FairPensions, were behind a series of shareholder resolutions at the annual meetings for BP, ExxonMobil, ConocoPhilips and Shell asking the companies to increase the disclosure of information about oil sands projects.6 2010 may stand as the year when “dirty oil” emerged as a genuine source of friction and irritation in the bilateral Canada-U.S. relationship for many Canadians.

Questions about the role the oil sands should play in U.S. oil supplies have intensified in the first decade of the twenty-first century. But the September 11, 2001 attacks on the United States, and the subsequent invasions of Afghanistan and Iraq, raised questions about the reliability, and associated costs, of Middle Eastern oil. Alberta Premier Ralph Klein, capitalized on the opportunity by touting the oil sands as a safe and reliable source of petroleum and the Province of Alberta opened its own office in the Canadian embassy in 2004 to strengthen ties. Until then, most of the questions being asked about oil sands development were raised by domestic organizations, like the Parkland Institute and the David Suzuki Foundation, who questioned why Canadians should sacrifice their environmental standards to continue “fueling fortress America.”

THE “DIRTY OIL” CHALLENGE - Shortly after daily production from the oil sands reached 1 million barrels per day at mid-decade, the movement began to cross over into the United States, and internationally, with a variety of well publicized incidents, including a controversial decision by the Province of Alberta to include an earth mover as part of an exhibit in the National Mall in Washington D.C. in 2006.7 This was further reinforced when National Geographic published a critical article on the oil sands in its March 2009 issue;8 however, the most searing images were provided in April 2008, when hundreds of ducks landed in a tailings pond at Syncrude’s Aurora site.9

Public and media attention has focused on the oil sands as the **epitome of “dirty oil”**: those heavier grades of crude that require significant upgrading and refining before they can produce a barrel of useable oil and raise air, water, and land quality issues in the course of their development. Several exporting nations supply the United States with grades of heavy, or super-heavy, crude oil, including, among others, Iraq, Mexico, Venezuela, Nigeria and portions will undermine its development of the United States, including heavy crude from California.10 Unlike Canada, neither Mexico City, nor Caracas, nor Abuja find themselves subject to the same recriminations from interest groups, or singled out by U.S. law makers at the state and federal levels as Ottawa does. Is it fair to wonder why the dirty oil campaign focuses on Canada while excluding other exporters of heavy crude from similar campaigns?

In the absence of any firm rationale some reasons can be surmised. Canada’s oil sands represent the “**low hanging fruit**” of the petroleum industry; an **easy and inviting target to attack**. Canada has been the largest supplier of crude oil to the United States since 2001, and the United States also serves as the largest outlet for oil sands production. Nearly all Canadian crude exports, 99.5 percent of Canada’s 2.476 million daily barrels of exports, go to the United States, including three out of every four barrels of oil produced from the sands.11 This relationship developed, in part, because of the unique combination of geography and amicable relations between the two states. Cross-border trade in oil is further enhanced by the interconnectedness of the Canadian and U.S. oil industries, access to investment capital and existing infrastructure, including transportation links, refining and distribution networks, that promoted continental development and an integrated energy market that also includes Mexico.

As a result, the Canadian oil industry generally, and the oil sands in particular, to date have served regional, rather than global, markets making Alberta a particularly inviting target for the dirty oil campaign. Common values, beliefs, institutions and a shared language make it easy for environmental activists to operate between Canada and the United States. Canadians, as well as Americans, enjoy the right of free speech and criticism of governmental or business policies without fear of incarceration, or worse, for critics, unlike in other producing jurisdictions. Indeed, of the top fifteen crude exporting states that supply the United States, only Canada, Mexico and Norway could be considered governed by democratic regimes.12 Some have also suggested that targeting the oil sands gives the illusion of tackling climate change while avoiding more difficult issues, like altering personal consumption habits, or tackling other entrenched carbon-intensive industries, like coal. Pg. 1-3

**US oil independence crush Canadian tar sands development without impacting conventional supplies**

**Hogan 8** - Professor of Global Energy Policy @ Harvard University [William W. Hogan (Director of LECG, LLC.), “Energy” National Strategic Forum Review, Summer 2008, Vol. 17 No. 3

To a good approximation, oil flows in a world market and events anywhere affect the price of oil everywhere. There is no escaping these oil price shocks. Even if the United States were to substantially reduce its own oil consumption, there would be **no immunity** from the effects of high world oil prices that would determine domestic energy prices and ripple through the world economy.

In addition, the flow of huge revenues through the oil coffers of hostile governments would not be much affected by the oil policy of the United States. A **heroic effort** **to reduce oil imports** could have some effect on world oil prices, but not enough to choke off the revenues to conventional oil producers. If anything, **the impact** at the margin **would fall on** the marginal sources of supply, which for a long while would be the expensive **unconventional oil supplies** of more stable regions, rather than the much cheaper conventional oil reserves. Hence, the impact of reduced world oil demand **would fall more on tar sands producers in Canada** than conventional oil gushers in the Persian Gulf. If we are worried about how oil producers are spending their money, reducing world oil demand is a blunt instrument of policy. Pg. 24-25