# Aff Cards Districts Round 3

## 1AC

### 1AC – Plan

#### The United States Federal Government should substantially reduce production restrictions on federal lands in the Arctic Outer Continental Shelf for conventional gas

### 1AC – Inherency

#### **Contention One is Inherency –**

#### Obama’s five year plan is insufficient – 85% of OCS is still locked up

Vorberger 13 (Jeff, Vice President of Political Affairs – National Ocean Industries Association, “Harness the Energy: Deliver the Prosperity,” Marine Link, 1-22, http://www.marinelink.com/news/prosperity-deliver350940.aspx)

Now, what else could Congress do? Congress and the Administration should add more offshore areas for oil and natural gas exploration and development. Federal policies limit exploration and development to about 15% of the outer continental shelf (OCS). That means 85% of the OCS is closed to exploration. Are there marketable amounts of oil and natural gas in that 85%? If the Gulf of Mexico is any indication, there certainly is. But we don’t know the true amounts, and won’t know, without looking. The current five year plan does not open up any new areas for oil and natural gas exploration, but Congress could open up more areas through legislation and should do so. There is strong political support for opening up areas off the coasts of Virginia and South Carolina. Those areas would be a good start. Opponents of increased offshore oil and natural gas development often claim that it would take ten years or more before we saw any production from those new areas. In some cases that might be true, but had we started ten years ago, we wouldn’t be having this argument. In addition, energy forecasts indicate that oil and natural gas will continue to be dominant components of our energy supply for generations to come. We will need those presently untapped supplies, not only for our energy reliability and security, but also to fulfill predictions that the U.S. will become a leader in oil and natural gas production around the end of this decade. Opening up new areas, coupled with increased development of nontraditional sources of energy, such as offshore wind, wave and current will contribute greatly to our long term economic stability and well-being.

#### Gas production on federal lands is declining

Bastasch 13 (Michael, Research Associate – Cascade Policy Institute, “Interior Secretary Ken Salazar to leave Obama administration in March,” Daily Caller, 1-16, <http://dailycaller.com/2013/01/16/interior-secretary-ken-salazar-to-leave-obama-administration-in-march/#ixzz2K2gztFOI>)

However, critics of the administration’s federal lands policies argue that oil and gas production on federal lands have suffered while less reliable renewable sources flourish. “President Obama and Interior Secretary Ken Salazar have presided over the most abysmal stewardship of public lands in recent history,” said Dan Kish of the Institute for Energy Research in October. “Oil production on federal lands declined last year,” Kish added. “Natural gas production on federal lands is in a free fall. Western oil shale is under an Obama embargo, and our vast offshore energy resources must now wait another 5 years for development thanks to the president’s most recent 5 year OCS plan.” As recently as November, Salazar’s Interior Department closed off 1.6 million acres originally slated for shale development, at a time when oil and gas production on federal lands are falling.

### 1AC – Arctic

#### Contention Two: Arctic Leadership

#### Offshore drilling is key to effective security investments – solves leadership

Bert 12 (Captain Melissa – USCG, 2011-2012 Military Fellow, U.S.Coast Guard, “A Strategy to Advance the Arctic Economy”, February, http://www.cfr.org/arctic/strategy-advance-arctic-economy/p27258)

The United States needs to develop a comprehensive strategy for the Arctic. Melting sea ice is generating an emerging Arctic economy. Nations bordering the Arctic are drilling for oil and gas, and mining, shipping, and cruising in the region. Russia, Canada, and Norway are growing their icebreaker fleets and shore-based infrastructure to support these enterprises. For the United States, **the economic potential from the energy and mineral resources is in the trillions of dollars**—based upon estimates that the Alaskan Arctic is the home to 30 billion barrels of oil, more than 220 trillion cubic feet of natural gas, rare earth minerals, and massive renewable wind, tidal, and geothermal energy. However, the U.S. government is unprepared to harness the potential that the Arctic offers. The United States lacks the capacity to deal with potential regional conflicts and seaborne disasters, and it has been on the sidelines when it comes to developing new governance mechanisms for the Arctic. To advance U.S. economic and security interests and avert potential environmental and human disasters, the United States should ratify the UN Law of the Sea Convention (LOSC), take the lead in developing mandatory international standards for operating in Arctic waters, and acquire icebreakers, aircraft, and infrastructure for Arctic operations. Regional Flashpoints Threaten Security Like the United States, the Arctic nations of Russia, Canada, Norway, and Denmark have geographical claims to the Arctic. Unlike the United States, however, they have each sought to exploit economic and strategic opportunities in the region by developing businesses, infrastructure, and cities in the Arctic. They have also renewed military exercises of years past, and as each nation learns of the others' activities, suspicion and competition increase. When the Russians sailed a submarine in 2007 to plant a titanium flag on the "north pole," they were seen as provocateurs, not explorers. The continental shelf is a particular point of contention. Russia claims that deep underwater ridges on the sea floor, over two hundred miles from the Russian continent, are part of Russia and are legally Russia's to exploit. Denmark and Canada also claim those ridges. Whichever state prevails in that debate will have exclusive extraction rights to the resources, which, based on current continental shelf hydrocarbon lease sales, could be worth billions of dollars. Debates also continue regarding freedom of navigation and sovereignty over waters in the region. Russia claims sovereignty over the Northern Sea Route (NSR), which winds over the top of Russia and Alaska and will be a commercially viable route through the region within the next decade. The United States contends the NSR is an international waterway, free to any nation to transit. The United States also has laid claim to portions of the Beaufort Sea that Canada says are Canadian, and the United States rejects Canada's claim that its Northwest Passage from the Atlantic to the Pacific is its internal waters, as opposed to an international strait. Canada and Denmark also have a boundary dispute in Baffin Bay. Norway and Russia disagree about fishing rights in waters around the Spitsbergen/Svalbard Archipelago. U.S. Capacity in the Arctic Is Lacking Traffic and commercial activity are increasing in the region. The NSR was not navigable for years because of heavy ice, but it now consists of water with floating ice during the summer months. As the icebergs decrease in the coming years, it will become a commercially profitable route, because it reduces the maritime journey between East Asia and Western Europe from about thirteen thousand miles through the Suez Canal to eight thousand miles, cutting transit time by ten to fifteen days. Russian and German oil tankers are already beginning to ply those waters in the summer months. Approximately 150,000 tons of oil, 400,000 tons of gas condensate, and 600,000 tons of iron ore were shipped via the NSR in 2011. Oil, gas, and mineral drilling, as well as fisheries and tourism, are becoming more common in the high latitudes and are inherently dangerous, because icebergs and storms can shear apart even large tankers, offshore drilling units, fishing vessels, and cruise ships. As a result, human and environmental disasters are extremely likely. Despite the dangerous conditions, the Arctic has no mandatory requirements for those operating in or passing through the region. There are no designated shipping lanes, requirements for ice-strengthened hulls to withstand the extreme environment, ice navigation training for ships' masters, or even production and carriage of updated navigation and ice charts. Keeping the Arctic safe with the increased activity and lack of regulations presents a daunting task. The U.S. government is further hindered by the lack of ships, aircraft, and infrastructure to enforce sovereignty and criminal laws, and to protect people and the marine environment from catastrophic incidents. In the lower forty-eight states, response time to an oil spill or capsized vessel is measured in hours. In Alaska, it could take days or weeks to get the right people and resources on scene. The nearest major port is in the Aleutian Islands, thirteen hundred miles from Point Barrow, and response aircraft are more than one thousand miles south in Kodiak, blocked by a mountain range and hazardous flying conditions. The Arctic shores lack infrastructure to launch any type of disaster response, or to support the growing commercial development in the region. U.S. Leadership in Arctic Governance Is Lacking Governance in the Arctic requires leadership. The United States **is uniquely positioned to provide such leadership**, but it is hampered by its reliance on the eight-nation Arctic Council. However, more than 160 countries view the LSOC as the critical instrument defining conduct at sea and maritime obligations. The convention also addresses resource division, maritime traffic, and pollution regulation, and is relied upon for dispute resolution. The LOSC is particularly important in the Arctic, because it stipulates that the region beyond each country's exclusive economic zone (EEZ) be divided between bordering nations that can prove their underwater continental shelves extend directly from their land borders. Nations will have exclusive economic rights to the oil, gas, and mineral resources extracted from those Outer Continental Shelves, making the convention's determinations substantial. According to geologists, **the U.S. portion is projected to be the world's largest underwater extension of land**—over 3.3 million square miles—bigger than the lower forty-eight states combined. **In addition to global credibility** **and protection of Arctic shelf claims**, the convention is important because it sets international pollution standards and requires signatories to protect the marine environment. Critics argue that the LOSC cedes American sovereignty to the United Nations. But the failure to ratify it has the opposite effect: it leaves the United States less able to protect its interests in the Arctic and elsewhere. The diminished influence is particularly evident at the International Maritime Organization (IMO), the international body that "operationalizes" the LOSC through its international port and shipping rules. By remaining a nonparty, the United States **lacks the credibility to promote U.S. interests in the Arctic**, such as by transforming U.S. recommendations into binding international laws. A Comprehensive U.S. Strategy for the Arctic The United States needs a comprehensive strategy for the Arctic. The current National/Homeland Security Presidential Directive (NSPD-66 / HSPD-25) is only a broad policy statement. An effective Arctic strategy would address both governance and capacity questions. To generate effective governance in the Arctic the United States should ratify LOSC and take the lead in advocating the adoption of Arctic shipping requirements. The IMO recently proposed a voluntary Polar Code, and the United States should work to make it mandatory. The code sets structural classifications and standards for ships operating in the Arctic as well as specific navigation and emergency training for those operating in or around ice-covered waters. The United States should also support Automated Identification System (AIS) carriage for all ships transiting the Arctic. Because the Arctic is a vast region with no ability for those on land to see the ships offshore, electronic identification and tracking is the only way to know what ships are operating in or transiting the region. An AIS transmitter (costing as little as $800) sends a signal that provides vessel identity and location at all times to those in command centers around the world and is currently mandated for ships over sixteen hundred gross tons. The United States and other Arctic nations track AIS ships and are able to respond to emergencies based on its signals. For this reason, mandating AIS for all vessels in the Arctic is needed. The U.S. government also needs to work with Russia to impose a traffic separation scheme in the Bering Strait, where chances for a collision are high. Finally, the United States should push for compulsory tandem sailing for all passenger vessels operating in the Arctic. Tandem sailing for cruise ships and smaller excursion boats will avert another disaster like RMS Titanic. To enhance the Arctic's economic potential, the United States **should** also **develop its capacity to enable commercial entities to operate safely in the region**. The U.S. government should invest in icebreakers**,** aircraft**,** and shore-based infrastructure. A ten-year plan should include the building of at least two heavy icebreakers, at a cost of approximately $1 billion apiece, and an air station in Point Barrow, Alaska, with at least three helicopters. Such an air station would cost less than $20 million, with operating, maintenance, and personnel costs comparable to other northern military facilities. Finally, developing a deepwater port with response presence and infrastructure is critical. A base at Dutch Harbor in the Aleutian Islands, where ships and fishing vessels resupply and refuel, would only cost a few million dollars per year to operate. Washington could finance the cost of its capacity-building efforts by using offshore lease proceeds and federal taxes on the oil and gas extracted from the Arctic region. In 2008, the United States collected $2.6 billion from offshore lease sales in the Beaufort and Chukchi Seas (off Alaska's north coast), and the offshore royalty tax rate in the region is 19 percent**, which would cover operation and maintenance of these facilities down the road**. The United States needs an Arctic governance and **acquisition strategy to take full advantage of all the region has to offer** and to protect the people operating in the region and the maritime environment. Neglecting the Arctic reduces the United States' ability to **reap tremendous economic benefits and could harm U.S. national security interests.**

#### The plan spurs military investments – solves escalation of the Arctic war

Talmadge 12 (Eric – AP, Huffington Post, “Arctic Climate Change Opening Region To New Military Activity’, 4/16, http://www.huffingtonpost.com/2012/04/16/arctic-climate-change-military-activity\_n\_1427565.html)

To the world's military leaders, the debate over climate change is long over. **They are preparing for a new kind of Cold War in the Arctic**, anticipating that rising temperatures there will open up a treasure trove of resources, long-dreamed-of sea lanes and a slew of potential conflicts. By Arctic standards, the region is already buzzing with military activity, and experts believe that will increase significantly in the years ahead. Last month, Norway wrapped up one of the largest Arctic maneuvers ever — Exercise Cold Response — with 16,300 troops from 14 countries training on the ice for everything from high intensity warfare to terror threats. Attesting to the harsh conditions, five Norwegian troops were killed when their C-130 Hercules aircraft crashed near the summit of Kebnekaise, Sweden's highest mountain. The U.S., Canada and Denmark held major exercises two months ago, and in an unprecedented move, the military chiefs of the eight main Arctic powers — Canada, the U.S., Russia, Iceland, Denmark, Sweden, Norway and Finland — gathered at a Canadian military base last week to specifically discuss regional security issues. None of this means a shooting war is likely at the North Pole any time soon. But as the number of workers and ships increases in the High North to exploit oil and gas reserves, **so will the need for policing, border patrols and** — if push comes to shove — **military muscle to enforce rival claims**. The U.S. Geological Survey estimates that 13 percent of the world's undiscovered oil and 30 percent of its untapped natural gas is in the Arctic. Shipping lanes could be regularly open across the Arctic by 2030 as rising temperatures continue to melt the sea ice, according to a National Research Council analysis commissioned by the U.S. Navy last year. What countries should do about climate change remains a heated political debate. But that has not stopped north-looking militaries from moving ahead with strategies that assume current trends will continue. Russia, Canada and the United States have the biggest stakes in the Arctic. With its military budget stretched thin by Iraq, Afghanistan and more pressing issues elsewhere, the United States has been something of a reluctant northern power, though its nuclear-powered submarine fleet, which can navigate for months underwater and below the ice cap, remains second to none. Russia — one-third of which lies within the Arctic Circle — **has been the most aggressive in establishing itself as the emerging region's superpower**. Rob Huebert, an associate political science professor at the University of Calgary in Canada, said Russia has recovered enough from its economic troubles of the 1990s to significantly rebuild its Arctic military capabilities, which were a key to the overall Cold War strategy of the Soviet Union, and has increased its bomber patrols and submarine activity. He said that has in turn led other Arctic countries — Norway, Denmark and Canada — to resume regional military exercises that they had abandoned or cut back on after the Soviet collapse. Even non-Arctic nations such as France have expressed interest in deploying their militaries to the Arctic. "We have an entire ocean region that had previously been closed to the world now opening up," Huebert said. "There are numerous factors now coming together that are mutually reinforcing themselves, causing a buildup of military capabilities in the region. **This is only going to increase as time goes on**." Noting that the Arctic is warming twice as fast as the rest of the globe, the U.S. Navy in 2009 announced a beefed-up Arctic Roadmap by its own task force on climate change that called for a three-stage strategy to increase readiness, build cooperative relations with Arctic nations and identify areas of potential conflict. "We want to maintain our edge up there," said Cmdr. Ian Johnson, the captain of the USS Connecticut, which is one of the U.S. Navy's most Arctic-capable nuclear submarines and was deployed to the North Pole last year. "Our interest in **the Arctic** has never really waned. It remains very important." **But the U.S. remains ill-equipped for large-scale Arctic missions**, according to a simulation conducted by the U.S. Naval War College. A summary released last month found the Navy is "inadequately prepared to conduct sustained maritime operations in the Arctic" because it **lacks ships** able to operate in or near Arctic ice, **support facilities and adequate communications**. "The findings indicate the Navy is entering a new realm in the Arctic," said Walter Berbrick, a War College professor who participated in the simulation. "Instead of other nations relying on the U.S. Navy for capabilities and resources, sustained operations in the Arctic region will require the Navy to rely on other nations for capabilities and resources." He added that although the U.S. nuclear submarine fleet is a major asset, the Navy has severe gaps elsewhere — it doesn't have any icebreakers, for example. The only one in operation belongs to the Coast Guard. **The U.S. is currently mulling whether to add more icebreakers**.

#### Diplomacy fails and conflict is likely

Tassinari 9/7 (Fabrizio Tassinari is a non-resident Senior Fellow at the German Marshall Fund and the Head of Foreign Policy and EU Studies at the Danish Institute for International Studies, September 7, 2012, “Avoiding a Scramble for the High North”, http://blog.gmfus.org/2012/09/07/avoiding-a-scramble-for-the-high-north/)

The geopolitics of the Arctic are stuck in a paradox: The more regional players restate the importance of international cooperation, the more some pundits and policymakers seem to conclude that the Arctic **risks descending into competition and even conflict.** The world is awakening to the growing strategic importance of the High North. As the Arctic ice melts due to global warming, it opens up new opportunities, from shorter shipping lanes to newly accessible oil and gas reserves; respectively, about 13 percent and 30 percent of the world’s undiscovered resources are in the Arctic, according to the U.S. Geological Survey. These discoveries are usually followed by declarations of the littoral nations to the effect that any potential disagreements over them will be resolved peacefully. However, beneath expressions of goodwill, the Arctic debate is often characterized **by a sense of urgency**, and even forms of alarmism. In recent years, instances of growing securitization of the Arctic have abounded. Back in 2008, a paper by Javier Solana, then the EU’s foreign policy’s chief, and the European Commission warned about “potential conflict over resources in Polar regions” as they become exploitable due to melting ice. In 2010, NATO’s supreme allied commander in Europe, Adm. James Stavridis, argued that “for now, the disputes in the North have been dealt with peacefully, but climate change could alter the equilibrium.” Then there are actions that speak louder than prepared speeches — from the famous August 2007 expedition that planted a Russian flag on the North Pole’s seabed to the annual summer military exercises carried out by Canada to assert its sovereignty in the North. Although the Russian stunt was most likely aimed at nationalist domestic audiences, some observers view these exercises as the expressions of competing national interests. As the scholar Scott Borgerson ominously put it: “The Arctic powers **are fast approaching diplomatic gridlock**, and that could eventually lead to the sort of armed brinkmanship that plagues other territories.” The geopolitical constellation in and around the region provides a ready justification for such an assessment. While no-one really imagines the United States, Canada, Norway, and Denmark fighting over the Arctic, some of their politicians have occasionally framed rhetoric in more peppered terms than one might expect. Russia, the fifth Arctic littoral nation, typically treads a fine line between declarations of cooperation and **an innate instinct for great-power competition**. Add to that the EU, which is seeking to carve its own role, and Asia’s giants, above all China, for which the opening of the Northeast passage may reduce sailing distance with Europe by some 40 percent, and it is not hard to conjure up the prospect of an Arctic race building up.

#### Goes nuclear – de-escalation is key

Wallace and Staples 10 (Michael Wallace and Steven Staples. \*Professor Emeritus at the University of British Columbia and President of the Rideau Institute in Ottawa “Ridding the Arctic of Nuclear Weapons: A Task Long Overdue,”http://www.arcticsecurity.org/docs/arctic-nuclear-report-web.pdf)

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 shipbased 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. 609 Ridding the Arctic of Nuclear Weapons: A Task Long Overdue 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**. The current geo-political threat level is nebulous and low – for now, according to Rob Huebert of the University of Calgary, “[the] issue is the uncertainty as Arctic states and non-Arctic states begin to recognize the geo-political/economic significance of the Arctic because of climate change.” 62

#### Extinction – it’s an existential risk

Bostrom 2 (Nick, PhD Philosophy – Oxford University, “Existential Risks: Analyzing Human Extinction Scenarios”, Journal of Evolution and Technology, Vol. 9, March, http://www.nickbostrom.com/existential/risks.html)

The unique challenge of existential risks Risks in this sixth category are a recent phenomenon. This is part of the reason why **it is useful to distinguish them from other risks**. We have not evolved mechanisms, either biologically or culturally, for managing such risks. Our intuitions and coping strategies have been shaped by our long experience with risks such as dangerous animals, hostile individuals or tribes, poisonous foods, automobile accidents, Chernobyl, Bhopal, volcano eruptions, earthquakes, draughts, World War I, World War II, epidemics of influenza, smallpox, black plague, and AIDS. These types of disasters have occurred many times and our cultural attitudes towards risk have been shaped by trial-and-error in managing such hazards. But tragic as such events are to the people immediately affected, in the big picture of things – from the perspective of humankind as a **whole – even the worst of these catastrophes are** mere ripples **on the surface of the great sea of life**. They haven’t significantly affected the total amount of human suffering or happiness or determined the long-term fate of our species. With the exception of a species-destroying comet or asteroid impact (an extremely rare occurrence), there were probably no significant existential risks in human history until the mid-twentieth century, and certainly none that it was within our power to do something about. The first manmade existential risk was the inaugural detonation of an atomic bomb. At the time, there was some concern that the explosion might start a runaway chain-reaction by “igniting” the atmosphere. Although we now know that such an outcome was physically impossible, it qualifies as an existential risk that was present at the time. For there to be a risk, given the knowledge and understanding available, it suffices that there is some subjective probability of an adverse outcome, even if it later turns out that objectively there was no chance of something bad happening. If we don’t know whether something is objectively risky or not, then it is risky in the subjective sense. The subjective sense is of course what we must base our decisions on.[[2]](http://www.nickbostrom.com/existential/risks.html#_ftn2) At any given time we must use our best current subjective estimate of what the objective risk factors are.[[3]](http://www.nickbostrom.com/existential/risks.html#_ftn3) 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.[[4]](http://www.nickbostrom.com/existential/risks.html#_ftn4)  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**. Such a war might however be a local terminal risk for the cities most likely to be targeted. Unfortunately, we shall see that nuclear Armageddon and comet or asteroid strikes are mere preludes to the existential risks that we will encounter in the 21st century.

#### US Arctic leadership via natural gas solves Arctic terrorism

Conley 12 (Heather – Senior Fellow at CSIS and Director, Europe Program, “A New Security Architecture for the Arctic”, January, http://csis.org/files/publication/120117\_Conley\_ArcticSecurity\_Web.pdf)

The Arctic will experience extraordinary economic and environmental change over the next several decades. Commercial, human, and state interaction will rise dramatically. More drilling for oil and gas in the region and growing shipping and ecotourism as new shipping routes come into existence are just a few of the examples of increased human activity in the Arctic. The rapid melting of the Arctic ice cap is now exceeding previous scientific and climatic predictions. A recent study shows that September 2011 marked the lowest levels of sea ice extent ever recorded in the northern polar region.1 The polar ice cap today is 40 percent smaller than it was in 1979,2 and in the summer of 2007 alone, 1 million more square miles of ice beyond the average melted, uncovering an area of open water six times the size of California. While estimates range from 2013 to 2060, the U.S. Navy’s “Arctic Roadmap” projects ice-free conditions for a portion of the Arctic by the summer of 2030.3 **Arctic economics** and an increasingly ice-free and hostile climatic environment **are** on a direct collision course, driving a clear need for a new paradigm to meet pressing security challenges that Arctic nations have thus far been unprepared or ill equipped to address. As the region takes on **greater economic importance, the Arctic requires a comprehensive** regional and global security strategy that includes an increase in regional readiness and border security as well as an enhancement of strategic capabilities. The security challenges are vast, including search and rescue, **environmental remediation, piracy, terrorism, natural and man-made disaster response**, and border protection. Compounding the challenge is the fact that regional players must function in an operational environment of severely limited satellite communication and hydrographic mapping. Arctic coastal states have developed and issued national Arctic security strategies and accompanying documents that, albeit roughly, sketch out their political and security priorities in the region. These documents describe their national security interests and the intentions these states wish to pursue and defend. Each of the five Arctic coastal states—Canada, Denmark via Greenland, Norway, Russia, and the United States—touts its commitment to cooperative action while simultaneously bolstering its military presence and capabilities in the Arctic. Yet the complexity of competing national security interests is heightened by the lack of a single coherent structure through which these concerns can be addressed. Therefore, a fresh approach is needed for addressing regional Arctic security concerns within a global framework, while recognizing the mutual benefits of maintaining international cooperation, transparency, and stability in the Arctic. Creating a twenty-first century security architecture for the Arctic presents the United States with a conundrum: **U.S. Arctic policy must be given a significant sense of urgency** and focus at the same moment that U.S. defense budgets are being reduced and U.S. military planners consider the Arctic to be “an area of low conflict.” **How does one economically** and militarily square this circle? Unfortunately, while there have been some international debate and discussion on the form and format of Arctic security cooperation, the debate has often focused on what issues related to Arctic security cannot be discussed rather than on those that can and should be addressed. However, these institutional and policy barriers have begun to break down as actors recognize both a collective lack of operational capacity and the increasing number of security actors that will play a role in this rapidly changing region. Arctic stakeholders have yet to discuss seriously, let alone determine, what collective security framework Arctic states should use to address the emerging security challenges in the region, despite signing legally binding agreements on international search and rescue and negotiating international agreements on oil spills and response. It is within this context that the following report will analyze the drivers of change in the region, examine the key Arctic security actors and institutions, and explore the potential for a new security architecture for the Arctic. Oil and Gas As the sea ice retreats, **new commercial opportunities in the Arctic arise**. Natural resources that had once been unreachable are becoming available for extraction. As the U.S. Energy Information Administration (EIA) estimates, the Arctic is projected to contain 13 percent of the world’s undiscovered oil resources and **30 percent of the gas resources**.1 Because global production of oil and gas will not match global demand and the short-term outlook for the price of oil and gas will increase,2 **the desire to tap these resources in the Arctic will spur commercial exploration**, and multinational companies will invest and become increasingly engaged in the region. At the same time, the need to develop new technologies and approaches for tackling the harsh and unpredictable climate for offshore drilling and transportation in the Arctic is urgent. The greater the potential profit and need to secure supply while maintaining, if not increasing, current production levels, the greater the tendency will be for companies to assume the greater risks inherent in operating in the Arctic. Alaska has contributed significantly to meeting U.S. demand with oil from the oil fields on the North Slope close to the Arctic coast transported through the Trans-Alaska Pipeline. However, due to decreasing North Slope production and a lack of new fields, domestic pressure to explore offshore of Alaska is rising. Royal Dutch Shell has received preliminary approval from the Obama administration for its offshore drilling plans in its acquired leases in the Beaufort Sea. Exploratory drilling in the Beaufort Sea is expected to commence in 2012.3 Shell is also optimistic that it can begin to develop the reserves in the Chukchi Sea in the near future, but issues with environmental leases, oil spill preparedness and response, and disputes with local communities threaten to delay the process.4 Other Arctic coastal states **are seeking similar economic advantage**. In Norway, leases to the Barents Sea have been allocated, as Norwegian oil and gas production has fallen since its peak of 3.4 million barrels per day in 20015 and is expected to decline further if no significant new fields are discovered. Increased demand from the European market has spurred additional exploratory drilling farther north. Seismic activity by the Norwegian Petroleum Directorate6 has already started in the maritime territory obtained after the Norwegian-Russian maritime delimitation treaty entered into effect in July 2011.7 With the largest exclusive economic zone (EEZ) and Arctic coast line, Russia **is increasingly interested in developing its potential fields**, especially on the prosperous continental shelf next to the Novaya Zemlya archipelago and in the Kara Sea. Russia is moving to increase gas production in the vast Yamal field, which already produces 90 percent of Russian state gas, following recent discoveries of large gas fields, such as the Bovanenkovo field.8 In addition, Russia has been active in expanding oil production in the Pechora Sea, with plans for drilling in the Prirazlomnoye oil field in early 20129—a significant development as it marks the first instance of offshore drilling in the Russian Arctic.10 Russia also plans to drill in the Dolginskoye oil field in the Pechora Sea, which is projected to be three times as large as the Prirazlomnoye, and aims to have the field developed by 2020.11 Numerous delays—from the large supply of gas available on the global market due to the discovery of unconventional gas in the United States and uncertainty over Russian taxation policies—have to this point prevented the development of the world’s largest gas field, the Shtokman field in the Barents Sea, forcing new technological developments and seismic exploration in other parts of the Russian Arctic territory. All of this activity indicates **the keen interest both countries have** in moving rapidly to extract these resources **from their Arctic territories.**

#### Leads to CBW use

Mychajlyszyn 8 (Natalie, International Affairs, Trade and Finance Division, “The Arctic: Canadian Security and Defence”, 24 October 2008, http://www.parl.gc.ca/Content/LOP/ResearchPublications/prb0813-e.htm#illegalaccess)

Increased illegal access and illegal activities, including terrorism As the Arctic generally becomes more accessible because of the warming climate, some analysts **predict the emergence of new security threats.**(6) One such risk is that of an increase in illegal migration and trafficking in persons to North America through the Arctic. There are also fears of the North being used as a thoroughfare for drug trafficking as well as a destination for illegal narcotics. In the post-September 11 era, fears have been raised concerning the increased vulnerability of the Arctic as a passage for terrorists, whether for illegal entry into North America or for the transport of illegal weapons, including biological and chemical devices. To such a list of activities, generally perpetrated by organized crime groups, can be added the rise of other types of organized crime, such as those involving industries engaged in the extraction of lucrative resources, such as diamonds and copper.

#### Extinction

Sandberg et al 8—Research Fellow at the Future of Humanity Institute at Oxford University. PhD in computation neuroscience, Stockholm—AND—Jason G. Matheny—PhD candidate in Health Policy and Management at Johns Hopkins. special consultant to the Center for Biosecurity at the University of Pittsburgh—AND—Milan M. Ćirković—senior research associate at the Astronomical Observatory of Belgrade. Assistant professor of physics at the University of Novi Sad. (Anders, How can we reduce the risk of human extinction?, 9 September 2008, http://www.thebulletin.org/web-edition/features/how-can-we-reduce-the-risk-of-human-extinction)

The risks from anthropogenic hazards appear at present larger than those from natural ones. Although great progress has been made in reducing the number of nuclear weapons in the world, humanity is still threatened by the possibility of a global thermonuclear war and a resulting nuclear winter. We may face even greater risks from emerging technologies. Advances in synthetic biology might make it possible to engineer pathogens capable of extinction-level pandemics. The knowledge, equipment, and materials needed to engineer pathogens are more accessible than those needed to build nuclear weapons. And unlike other weapons, pathogens **are self-replicating, allowing a small arsenal to become exponentially destructive**. Pathogens have been implicated in the extinctions of many wild species. Although most pandemics "fade out" by reducing the density of susceptible populations, pathogens with wide host ranges in multiple species can reach even isolated individuals. The intentional or unintentional release of engineered pathogens with high transmissibility, latency, and lethality might be capable of causing human extinction. While such an event seems unlikely today, the likelihood may increase as biotechnologies continue to improve at a rate rivaling Moore's Law.

#### Drilling’s inevitable, but it’s a question of safety – plan sends a global signal and solves Arctic environment

Sullivan 12 (Dan – a former state attorney general, commissioner of Alaska's Department of Natural Resources, “It's time to develop our Arctic resources, 7/20, http://www.cnn.com/2012/07/20/opinion/sullivan-arctic-drilling/index.html)

(CNN) -- The United States **is on the verge of an energy renaissance.** We need to recognize and seize the opportunity. This renaissance involves domestic production of natural resources ranging from clean renewables to hydrocarbons. In particular, domestic hydrocarbon production -- both oil and gas -- is increasing dramatically, with some experts predicting that the United States could become the largest hydrocarbon producer in the word -- outstripping Saudi Arabia and Russia -- by 2020. Increased domestic production of hydrocarbons is driven by two trends. First, new technology is unlocking unconventional resources such as shale-derived oil and gas. And second, investors and policy makers are recognizing that the U.S. still has an enormous resource base of conventional oil and gas, particularly in Alaska. Opinion: Why we should look to the Arctic Federal agencies estimate that Alaska's North Slope and federal waters off Alaska's northern coast contain approximately 40 billion barrels of technically recoverable oil and more than 200 trillion cubic feet of conventional gas. According to the U.S. Geological Survey, this region contains more oil than any comparable region located in the Arctic, including northern Russia. However, the United States **is lagging behind its Arctic neighbors in developing these resources**. This is unfortunate, because we have some of the highest environmental standards in the world **and we should be setting the bar for Arctic development**. Developing our Arctic resources will promote our nation's interests in many ways: securing a politically stable, long-term supply of domestic energy; boosting U.S. economic growth and jobs; reducing the federal trade deficit; **and strengthening our global leadership on energy issues**. Leading academic researchers and economists in Alaska have estimated that oil production from Alaska's outer continental shelf will bring federal revenues of approximately $167 billion over 50 years, and create 55,000 jobs throughout the country. Developing U.S. resources in the Arctic **has the added benefit of enhancing global environmental protection**. One of the arguments used by Arctic drilling opponents is that "we aren't ready," but it is obvious that no matter what preparations are made, they will argue that it isn't enough. Shell, for example, has spent billions to prepare for drilling in the Arctic this summer, incorporating the lessons learned from the Deepwater Horizon spill in the Gulf of Mexico, state-of-the-art equipment and extensive scientific research. Recently, the Obama administration has publically expressed its confidence in the company's drilling plans. The U.S. has created some of the highest standards in the world for environmental protection. When we delay or disallow responsible resource development, **the end result is not to protect the environment**, but **to drive hydrocarbon investment and production to countries with** much lower environmental standards and enforcement capacity. Last year, it was reported that between 5 million and 20 million tons of oil leak in Russia per year. This is equivalent to a Deepwater Horizon blowout about every two months. Russia had an estimated 18,000 oil pipeline ruptures in 2010 -- the figure for the U.S. that year was 341. If we do not pursue responsible development in the Arctic, countries such as Russia -- perhaps even China, which is interested in securing access to Arctic hydrocarbon resources -- **will dominate energy production from the Arctic**. Such a scenario **does not bode well for the global environment**. By embracing the opportunities in the Arctic, the United States **will show the world that it can be a strong leader in responsible energy development.**

#### Extinction

**Ford 3** (Violet, Vice President – Inuit Circumpolar Conference, “Global Environmental Change: An Inuit Reality”, 10-15, http://www.mcgill.ca/files/cine/Ford.pdf)

The Arctic ecosystem is a fundamental contributor to **global processes** and the balance of **life on earth**. Both the unique physical and biological characteristics of the Arctic ecosystem play key roles in maintaining the integrity of the global environment. Massive ice sheets and ice cover regulate the global temperatures by reflecting much of the solar radiation back into space, the Arctic ocean influences global ocean currents which are responsible for a variety of weather conditions and events, to name but two. The Arctic is also the recipient of the by-products of southern-based industry and agricultural practices. In February 2003, UNEP’s Governing Council passed a resolution effectively recognizes the Arctic as a **“barometer”** or indicator region **of the globe’s environmental health**. This is important and is further reason why Arctic indigenous peoples should work together at the international level. Late last year ICC and RAIPON participated in the Global Environment Facility (GEF) Council meeting in Beijing, China with the aim of sensitizing this organization to the Arctic dimension of global environmental issues. I understand that the GEF is now willing to consider indigenous peoples and their organizations to be distinct and separate from environmental and other NGO’s.

#### The US needs to take the lead to ensure best practices

Schneider 12 (Michael, Advocacy Director – Clean Air Task Force, “Curb Methane Emissions,” National Journal, 7-25, http://energy.nationaljournal.com/2012/07/is-arctic-oil-drilling-ready-f.php?comments=expandall#comments)

For several weeks now the public and the media have cast increasing attention on Arctic oil and gas drilling, specifically regarding the plans of Shell to explore in the Arctic waters off the coast of Alaska. This is, pardon the pun, only the tip of the iceberg when it comes to Arctic oil and gas development. Around the Arctic, efforts are ramping up in Russia, Norway, Greenland and Canada to stake a claim to one of the last great reserves of undiscovered oil and gas. According to the United States Geological Survey, the Arctic holds one-fifth of the world’s undiscovered, recoverable oil and natural gas; 90 billion barrels of oil and 1,669 trillion cubic feet of natural gas. With Shell’s imminent entrance into Arctic waters, **the debate is turning from “if we drill in the Arctic,” to “how and where we drill in the Arctic**.” The discussion to date has primarily revolved around the key questions of oil spills and impacts to marine ecosystems. However, it is also critically important to remember that this debate starts and ends with climate change. The melting of the Arctic due to global warming is what set off the race for Arctic oil and gas. Now, it is incumbent upon the countries and the companies that intend to develop the Arctic to make sure that it is done in the least damaging way possible, and this includes paying very close attention to the global warming pollutants coming from the production: methane, black carbon and carbon dioxide. Pointing the way forward in a new report: (www.catf.us/resources/publications/view/170), Clean Air Task Force has laid out the primary climate risks and mitigation strategies of drilling in the Arctic. Here is a summary of some of the key findings of that report: While oil production is the primary focus of current exploration and production activities due to high oil prices, natural gas is almost always produced along with oil, posing the problem of what to do with it. Crude oil usually contains some amount of “associated” natural gas that is dissolved in the oil or exists as a cap of free gas above the oil in the geological formation. In some cases, this represents a large volume of gas. For example, nearly 3 trillion cubic feet (Tcf) per year of gas is produced in association with oil in Alaska. The largest (but by no means only) potential source of methane pollution is from the leaks or outright venting of this “associated” natural gas. Flaring, the typical way to dispose of this “stranded” gas, is much better than venting, but it releases a tremendous amount of CO2. Worldwide, about 5 trillion cubic feet of gas is flared each year. That’s about 25 percent of the US’s annual natural gas consumption. This leads to the release of about 400 million tons of CO2 per year globally, the equivalent to the annual emissions from over 70 million cars. Black carbon is also emitted from flares, although measurements are lacking to fully understand the potential burden from flaring. What we do know is that the black carbon that flaring will release in the Arctic is particularly harmful, since it is so likely to settle out on snow or ice, where the dark pollutant rapidly warms the white frozen surface. Many technologies and best practices exist to reduce the impact of oil and gas production both to the Arctic and the global climate. If we are going to extract the oil from the Arctic, we need to do it in a way that does not exacerbate the very real problem that climate change is already posing there. In order to do so, the US must take the lead in ensuring that only the best practices are acceptable when it comes to Arctic exploration and drilling. The technologies and practices below can dramatically reduce the emissions associated with oil and natural gas, in some cases by almost 100%.

### 1AC – Helium

#### Contention Two is Helium

#### Gas is key to overall helium supply – it’s the linchpin to numerous industries

Kammerzell 11 (Jaime – Energy Writer, “Helium to Move from Byproduct to Primary Drilling Target“, 11/18, <http://rigzone.com/news/article.asp?a_id=112735>)

Helium is likely to move from a derived product of natural gas production in the United States to a primary drilling target in the next five years. Historically produced as a byproduct of natural gas, the U.S. helium supply is declining, which has caused alarm throughout the industry. Why is helium so important? Most people associate helium with party balloons and squeaky cartoon voices; however, there is a very serious side of the helium industry that few people comprehend. Without helium, MRI machines don't function, NASA rockets aren't launchedand semiconductor manufacturing grinds to a halt. Helium is simply indispensible to these and various other critical applications, and its increasing scarcity has many people nervous. According to Bo Sears, president of Inter-American Corporation, U.S. helium extraction from natural gas has been declining since 2000. The fast depleting Hugoton gas field, which covers parts of Kansas, Oklahoma and Texas, is yielding lower and lower volumes natural gas and helium. "Throughout the 20th Century, the Hugoton field was the source of most of the world's helium production. Hugoton gas contains concentrations of helium ranging from 0.3 percent to 1.9 percent and it represents about 75 percent of all domestic helium production," Bo Sears explained. ExxonMobil's LaBarge field in western Wyoming started producing helium in 1986 and represents the other 25 percent. As per the U.S. Helium Act of 1960, the government built a crude helium pipeline through the Texas and Oklahoma Panhandles and Kansas to collect enriched helium volumes from the Hugoton field that were being vented from nitrogen treating facilities. Multiple nitrogen rejection facilities filled the Federal Helium Reserve at the Cliffside field near Amarillo, TX with enriched off-gas, the gas that is removed from the natural gas. The Hugoton hit peak production in the late 1970s. The Bureau of Land Management (BLM), a division of the US Department of the Interior, manages the Cliffside reserve and related helium infrastructure. Cliffside is the only significant storage facility for crude helium in the world. As per the Helium Privatization Act of 1996, the BLM is now tasked with selling the helium reserve to pay down debt incurred since the enactment of the Helium Act of 1960. By virtually all accounts, the disposition price for crude helium sold, as stipulated by the 1996 Act, is substantially below the actual market price for helium. This dynamic is leading to shortages of helium to end users and an opportunity cost to the U.S. Treasury. Industrial gas companies with strap-on plants (attached to the BLM helium pipeline running from Cliffside to Bushton, KS) purchase crude helium from the Cliffside reserve via stipulated annual allocations. The composition of this crude helium is roughly 80% helium and 20% nitrogen. At these plants, engineers refine, liquefy, transport and sell the crude helium to any number of domestic and international customers. For most of the 1900s, conventional gas **treating operations captured helium as a byproduct**. For natural gas to meet rigid sales specifications, engineers must purify it to "something close to 1,000 Btu," Scott Sears, CEO of IACX Energy, explained. "Most pipeline interconnections have specifications that limit the quantity of inert gases being pushed into the line. A typical sales line specification is no more than 4% total inerts. And, where large nitrogen rejection facilities were placed in high-helium bearing reservoirs such as Hugoton, the nitrogen waste gas was found to contain high percentages of helium. This helium byproduct was and is further refined and sold. IACX Energy builds small scale helium purification and nitrogen rejection facilities that can be used in tandem to realize multiple profit centers for a gas treating project". "Helium sales can really augment a project's economics, an especially appealing proposition given today's low prices for natural gas," Scott Sears said. "When used in tandem, small scale helium and nitrogen rejection facilities can reap considerable value, even at lower pressures and volumes. When we started this venture late in 2006, we had no treating units in operation. Now, we have 17 units treating gas streams in seven different states." "If a producer is curious about whether or not he has helium in his gas," Scott said, "he can start by looking for high nitrogen levels – there appears to be a correlation between high helium and high nitrogen. Moreover, if any high nitrogen gas is observed from reservoirs at or near any deep-seated Precambrian uplifting events, the chances of having economic levels of helium gas is relatively good. Lastly, just because a gas analysis shows 0 percent doesn't make it so. Most gas chromatographs use helium as a carrier gas and the device cannot measure for the carrier gas. You must specifically ask the testing company for measure for helium, though not all companies are set up to do so," Scott advised. The government "formula price" for the crude helium sold from the Cliffside field (set by the Helium Privatization Act of 1996) is equal to "the total cost of the government helium program, plus accrued interest, divided by the estimated recoverable helium in the reserve," Bo Sears explained. Currently, the formula price sits at $75.75 per thousand cubic feet. What is Helium? Although helium is the second most abundant element in the universe, behind hydrogen, it is quite rare on Earth, Bo Sears explained. "It comes from two different sources, which is cause for the discrepancy. The helium that makes up nearly a quarter of the known universe is of primordial origin, meaning it has been here since the Big Bang. The helium on Earth, however, is solely the result of millions upon millions of years of radioactive decay of three isotopes (Uranium-238, Uranium-235, and Thorium-232)," Bo Sears said. The helium found on Earth is very mobile and accumulates in natural gas reservoirs. "Virtually all of the commercially extractable helium in the U.S. is found in the mid-continent," Bo Sears said. The Hugoton field has been the primary source for global helium since U.S. helium production began. "Most natural gas in the U.S., and elsewhere for that matter, does not contain economic concentrations of helium," Bo Sears said. Incidences of high helium in natural gas are almost always associated with high percentages of nitrogen as well. "As helium concentrations rise, so too does the nitrogen component," Bo Sears said. "However, the opposite is not always true. If you have nitrogen in a gas stream, it does not necessarily imply a high helium concentration." For substantial helium gas to develop, three important geological events must be present, Bo Sears explained. "First, there must be adequate concentrations of helium-generating isotopes in the basement rock. Second, there must be adequate fractures and fissures so that helium can escape the tight granite lattices of crustal rock. And lastly, there must be a caprock tight enough to hold any helium in appreciable quantities." The helium atom is so small that an average caprock holding hydrocarbons likely would not hold helium. "If any one of these three events is missing, there will be no accumulation of helium," Bo Sears said. History of U.S. Helium The U.S. became interested in helium during World War I as a substitute for highly flammable hydrogen for use in military dirigibles and blimps. The first commercial plant, however, did not come onstream until 1921 -- three years after the war ended. In October 1918, the Linde Company signed a contract to build the first commercial helium plant in Fort Worth to process gas from the Petrolia field near Wichita Falls, TX. After Petrolia's depletion, a larger production plant was constructed in 1929 for the Cliffside field near Amarillo, TX. Since then, Amarillo has been the epicenter of the global helium industry. Until the early 1950s, helium's primary purpose was for military dirigibles and blimps but it was also playing an increasingly significant role in magnesium welding applications. Helium played a very important role in World War II as the non-flammable lifting gas for these vessels that escorted naval ships and identified enemy submarines. Demand increased dramatically through the 1950s after engineers developed more applications for helium, such as arc welding and breathing mixtures. Demand grew so much, in fact, that Congress passed the Helium Act of 1960, which it designed primarily for the U.S. to buy (with borrowed money) and store crude helium for future use in the Cliffside field. The Helium Act offered incentives for private natural gas producers to strip helium from natural gas and sell it to the government. The principal purpose was to prevent wastage of valuable helium that would otherwise be vented by private producers. From 1929 to 1960 the federal government was virtually the only domestic producer of helium. However, in 1971, Congress terminated the storage contracts created by the 1960 Act because private producers were processing helium with greater efficiencies. Thus, the U.S. incurred an enormous helium debt. In 1996, President Bill Clinton signed the Helium Privatization Act, which would ultimately remove the U.S. from the helium industry and place it into private hands. Congress designed this Act to sell most of the remaining stored helium reserves out of Cliffside by the year 2015, while paying off the Helium Debt incurred by the 1960 Act. Future of Helium The U.S. is not only the largest supplier of helium but also the largest consumer. The U.S. consumes about 39 percent or 2.45 Bcf/yr of the worldwide helium demand, compared to Asia, which represents about 27 percent 1.65 Bcf/yr, according to Maura D. Garvey's article in the October 2011 CyroGas International newsletter. Europe represents about 21 percent (1.3 Bcf/yr) of the worldwide demand, while the rest of the world (Canada, Latin American, and Middle East) represent about 13 percent. A new helium plant is due to come online near Big Piney, Wyo., soon. The Air Products and Matheson Tri-Gas helium purifier and liquefaction plant will process 0.6 percent (0.006) helium content out of a constituent gas stream of roughly 20 percent methane, 65 percent CO2, 5 percent H2S and 7 percent nitrogen from the Riley Ridge field. The plant is designed to produce 200 MMcf of helium per year at start up with possible expansion capacity to 400 MMcf per year. Nevertheless, international helium plants are more likely future sources. There are currently seven international helium plants and more are planned. Most recently, the Darwin, Australia, plant came online in March 2010 and more are planned in Algeria, Qatar, and Russia during the next three years. "Production from these sources should be sufficient to meet worldwide demand for the next five years," Garvey wrote. "Substantial worldwide helium reserves in North America, the Middle East, Africa, and Russia could sustain the helium industry for hundreds of years," Garvey wrote, "but those reserves are typically more difficult and costly to develop, which is why they have remained undeveloped to date." The future of the U.S. Helium Reserve is uncertain, Bo Sears said. The reserve has a short life span and new reserves need to be found so that the U.S. is not importing the gas from Qatar and Algeria in the near future. "Besides Cliffside and Riley Ridge, there are no other domestic helium projects currently online. All of the industrial gas company helium assets (ie, large cryogenic facilities) are on the Hugoton field … and there they will sit until there is no more gas to run through them. There has been no push by any industrial gas company to locate and secure new sources." "If we are going to secure our domestic helium supply, we need to find new sources and these will have to come from smaller fields. Those new sources are going to have to come from areas where helium is the primary target as opposed to secondary or tertiary. Our company is focused on exploiting these new sources." "If the U.S. ultimately becomes an importer of helium, I cannot even fathom what helium would cost. You certainly wouldn't see any more toy balloons at birthday parties. They would simply cost too much. Besides, helium is far more important for science, industry and academia."

#### **Shale gas doesn’t solve – conventional gas is key**

Clarke 12 (Richard H – cryogenics and helium specialist at the Culham Centre for Fusion Energy, “Should we ban helium balloons?”, 12/11, <http://www.guardian.co.uk/discussion/user-comments/richardhclarke>)

Most shale gas contains no helium - **helium diffuses through the shale** - and **to the extent that shale displaces 'conventional' gas** that is probably not good news for helium supply. On the other hand, if the US starts to export LNG (made from a mixture of shale and conventional gas) that could help the helium market if the liquefaction ‘purge gas’ is captured and refined into liquid helium. As L1ma says, helium is continuously produced by radioactive decay in the Earth's crust. Unfortunately most of the gas diffuses out of the crust and into the atmosphere where, on average, each molecule spends about a million years in the atmosphere before being ejected into space by the solar wind. At present there is a massive 3.8 billion tonnes of helium in the atmosphere but the concentration is so small (5.2 ppm) that it would be hugely expensive and energy consuming to recover industrial quantities from the air. In those natural gas fields where helium is trapped by the cap rock it has been estimated that only HALF the helium molecules 'unearthed' during natural gas production are refined into pure helium gas or liquid helium. Helium balloons comprise about 8% of the global helium market. About 30% is used in cryogenics including medical imaging or MRI equipment, while the remainder is used in science, welding, chip or optic fibre manufacturing, and aerospace.

#### Supply’s on the brink now---no excess global capacity

Nelson 12 (Walter Nelson – Director, Helium Sourcing and Supply Chain Air Products and Chemicals, Inc, 7/20/12, Helium: Supply Shortages Impacting our Economy, National Defense and Manufacturing, Congressional Documents & Publications, lexis )

There have been planned and unplanned maintenance outages at natural gas processing plants, as well as continuing pipeline allocations on the BLM system during well maintenance that have restricted the supply of crude helium to the U.S. refiners. In Algeria and Qatar, production of helium has decreased due to the fragile worldwide economy, as well as maintenance work at gas palnts. In addition, new helium refining projects have been slow to develop. The delayed start-up of one particular plant in Wyoming has postponed access to major new supplies of helium. Combined, these issues have reduced the global helium supply by as much as 5% to 10%. On top of this, the industry will experience an unprecedented helium shortage this summer. Beyond the developments cited above, there are currently three US plant outages or curtailments that are severely limiting the short-term supply of helium today. First, one company reduced its helium production in Wyoming by approximately 20% beginning early June while performing critical maintenance activities. Full production is not expected to resume until sometime later this summer. The impact of this curtailment is almost five percent of global supply capacity. Second, the crude helium enrichment plant that supplies the BLM pipeline system was shut down July 15th for a planned 10 day safety critical outage. During this outage helium deliveries are limited to pipeline inventory reducing global supply capacity by an additional 25%. Third, a nautral gas plant in Kansas experienced an unplanned helium equipment outage at the end of June and that outage continued through this week. The impact of this outage was another five percent reduction in global supply capacity. In helium circles this has been "the perfect storm." The combination of these issues has resulted in a significant short-term reduction in global helium supply capacity over the summer months. Global inventories would have normally served as a buffer during short-term outage events, minimizing the supply impacts. Unfortunately that's not the case this time. Air Products has had to allocate our customers and I suspect that all helium suppliers have had to do the same. We are caught in a cruch not of our making. We expect some relief soon. Most of the maintenance outages will be completed within weeks, in the U.S. and abroad.That said, it will most probably take months for the global helium supply chains to recover from these summer outages. Helium supplies will continue to remain tight through 2012 and into 2013, when new helium production is expected in Wyoming and Qatar. The Wyoming project is expected to add four percent helium capacity and the Qatar II project may add up to 18% capacity. Only after these two new plants are operational in 2013 and existing plants are running back at full output will the global supply begin to fully stabilize.

#### That destroys U.S. science leadership

Ong 12 (Phuan Ong – the Eugene Higgins Professor of Physics Director, Princeton Center for Complex Materials Department of Physics Princeton University, 7/20/12, Helium: Supply Shortages Impacting our Economy, National Defense and Manufacturing, Congressional Documents & Publications, lexis )

The 2 main reasons why liquid helium is vital for research are: 1) Helium is the only fluid available for cooling samples to temperatures close to absolute zero. All objects follow the universal laws of quantum mechanics. However, at room temperature, large thermal agitations of molecules and atoms largely obscure or destroy the manifestations of quantum physics. Hence quantum behavior seems bizarre and unfamiliar to all of us. Cooling a sample suppresses the thermal agitations, allowing the quantum phenomena to become apparent. Put more directly, liquid helium is the "royal road" to discovery. 2) Helium is used to cool the superconducting wires in superconducting magnets. At present, superconducting magnets using niobium-tin (and tentatively high-Tc cuprates) provide the only known means for producing intense magnetic fields over human-sized volumes. They have to be cooled to 4 Kelvin above absolute zero to remain superconducting. With increasing demands worldwide (in research, MRI machines and in future transport), the demand for liquid helium is expected to rise sharply. To mix metaphors, we may say that liquid helium is the vital "oxygen" that nourishes the large, dynamic U.S. research community. Disrupting this vital flow will deliver a crippling body blow to a large segment of the community, and jeopardize the leadership role of the U.S. in the coming decades. Increasingly, the pre-eminence of the U.S. in this field of physics has come under stiff challenges from groups in Germany, Japan, Netherlands, China and S. Korea. These countries have steeply increased their investments in these areas and "grown" a new generation of physicists, mostly trained in the U.S. The investment stems from the universal consensus that, in contrast to many other fundamental scientific areas, the results here underpin important future technologies. In an increasingly flat world, it is prudent for the U.S. to safeguard the availability of this valuable national resource. From the RandD viewpoint, strong fluctuations in the price of helium or in the supplywould be very harmful to the U.S. national interest.

#### That’s key to the legitimacy of U.S. hegemony---it blunts resentment of the power gap and solves conflict

Coletta 9 (Damon Coletta – Professor of Political Science at the United States Air Force Academy, September 2009, “Science, Technology, and the Quest for International Influence,” <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA536133&Location=U2&doc=GetTRDoc.pdf>)

Less appreciated is how scientific progress facilitates diplomatic strategy in the long run, how it contributes to Joseph Nye‘s soft power, which translates to staying power in the international arena. One possible escape from the geopolitical forces depicted in Thucydides‘ history for all time is for the current hegemon to maintain its lead in science, conceived as a national program and as an enterprise belonging to all mankind. Beyond the new technologies for projecting military or economic power, the scientific ethos conditions the hegemon‘s approach to social-political problems. It effects how the leader organizes itself and other states to address well-springs of discontent—material inequity, religious or ethnic oppression, and environmental degradation. The scientific mantle attracts others‘ admiration, which softens or at least complicates other societies‘ resentment of power disparity. Finally, for certain global problems—nuclear proliferation, climate change, and financial crisis—the scientific lead ensures robust representation in transnational epistemic communities that can shepherd intergovernmental negotiations onto a conservative, or secular, path in terms of preserving international order. In today‘s order, U.S. hegemony is yet in doubt even though military and economic indicators confirm its status as the world‘s lone superpower. America possesses the material wherewithal to maintain its lead in the sciences, but it also desires to bear the standard for freedom and democracy. Unfortunately, patronage of basic science does not automatically flourish with liberal democracy. The free market and the mass public impose demands on science that tend to move research out of the basic and into applied realms. Absent the lead in basic discovery, no country can hope to pioneer humanity‘s quest to know Nature. There is a real danger U.S. state and society could permanently confuse sponsorship of technology with patronage of science, thereby delivering a self-inflicted blow to U.S. leadership among nations.

#### Legitimacy’s key to global stability---prevents great power war

Fujimoto 12 (Kevin Fujimoto 12, Lt. Colonel, U.S. Army, January 11, 2012, “Preserving U.S. National Security Interests Through a Liberal World Construct,” online: <http://www.strategicstudiesinstitute.army.mil/index.cfm/articles/Preserving-US-National-Security-Interests-Liberal-World-Construct/2012/1/11>)

The emergence of peer competitors, not terrorism, presents the greatest long-term threat to our national security. Over the past decade, while the United States concentrated its geopolitical focus on fighting two land wars in Iraq and Afghanistan, China has quietly begun implementing a strategy to emerge as the dominant imperial power within Southeast Asia and the Indian Ocean. Within the next 2 decades, China will likely replace the United States as the Asia-Pacific regional hegemonic power, if not replace us as the global superpower.1 Although China presents its rise as peaceful and non-hegemonic, its construction of naval bases in neighboring countries and military expansion in the region contradict that argument. With a credible threat to its leading position in a unipolar global order, the United States should adopt a grand strategy of “investment,” building legitimacy and capacity in the very institutions that will protect our interests in a liberal global construct of the future **when** we are no longer the dominant imperial power. Similar to the Clinton era's grand strategy of “enlargement,”2 investment supports a world order predicated upon a system of basic rules and principles, however, it differs in that the United States should concentrate on the institutions (i.e., United Nations, World Trade Organization, ASEAN, alliances, etc.) that support a world order, as opposed to expanding democracy as a system of governance for other sovereign nations. Despite its claims of a benevolent expansion, China is already executing a strategy of expansion similar to that of Imperial Japan's Manchukuo policy during the 1930s.3 This three-part strategy involves: “(i) (providing) significant investments in economic infrastructure for extracting natural resources; (ii) (conducting) military interventions (to) protect economic interests; and, (iii) . . . (annexing) via installation of puppet governments.”4 China has already solidified its control over neighboring North Korea and Burma, and has similarly begun more ambitious engagements in Africa and Central Asia where it seeks to expand its frontier.5 Noted political scientist Samuel P. Huntington provides further analysis of the motives behind China's imperial aspirations. He contends that “China (has) historically conceived itself as encompassing a “‘Sinic Zone'. . . (with) two goals: to become the champion of Chinese culture . . . and to resume its historical position, which it lost in the nineteenth century, as the hegemonic power in East Asia.”6 Furthermore, China holds one quarter of the world's population, and rapid economic growth will increase its demand for natural resources from outside its borders as its people seek a standard of living comparable to that of Western civilization. The rise of peer competitors has historically resulted in regional instability and one should compare “the emergence of China to the rise of. . . Germany as the dominant power in Europe in the late nineteenth century.”7 Furthermore, the rise of another peer competitor on the level of the Soviet Union of the Cold War ultimately threatens U.S. global influence, challenging its concepts of human rights, liberalism, and democracy; as well as its ability to co-opt other nations to accept them.8 This decline in influence, while initially limited to the Asia-Pacific region, threatens to result in significant conflict if it ultimately **leads to a paradigm shift** in the ideas and principles that govern the existing world order. A grand strategy of investment to address the threat of China requires investing in institutions, addressing ungoverned states, and building legitimacy through multilateralism. The United States must build capacity in the existing institutions and alliances accepted globally as legitimate representative bodies of the world's governments. For true legitimacy, the United States must support these institutions, not only when convenient, in order to avoid the appearance of unilateralism, which would ultimately undermine the very organizations upon whom it will rely when it is no longer the global hegemon. The United States must also address ungoverned states, not only as breeding grounds for terrorism, but as conflicts that threaten to spread into regional instability, thereby drawing in superpowers with competing interests. Huntington proposes that the greatest source of conflict will come from what he defines as one “core” nation's involvement in a conflict between another core nation and a minor state within its immediate sphere of influence.9 For example, regional instability in South Asia10 threatens to involve combatants from the United States, India, China, and the surrounding nations. Appropriately, the United States, as a global power, must apply all elements of its national power now to address the problem of weak and failing states, which threaten to serve as the principal catalysts of future global conflicts.11 Admittedly, the application of American power in the internal affairs of a sovereign nation raises issues. Experts have posed the question of whether the United States should act as the world's enforcer of stability, imposing its concepts of human rights on other states. In response to this concern, The International Commission on Intervention and State Sovereignty authored a study titled, The Responsibility to Protect,12 calling for revisions to the understanding of sovereignty within the United Nations (UN) charter. This commission places the responsibility to protect peoples of sovereign nations on both the state itself and, more importantly, on the international community.13 If approved, this revision will establish a precedent whereby the United States has not only the authority and responsibility to act within the internal affairs of a repressive government, but does so with global legitimacy if done under the auspices of a UN mandate. Any effort to legitimize and support a liberal world construct requires the United States to adopt a multilateral doctrine **which** avoids **the precepts of** the previous administration: “preemptive war, democratization, and U.S. primacy of unilateralism,”14 which have resulted in the alienation of former allies worldwide. Predominantly Muslim nations, whose citizens had previously looked to the United States as an example of representative governance, viewed the Iraq invasion as the seminal dividing action between the Western and the Islamic world. Appropriately, any future American interventions into the internal affairs of another sovereign nation must first seek to establish consensus by gaining the approval of a body representing global opinion, and must reject military unilateralism as a threat to that governing body's legitimacy. Despite the long-standing U.S. tradition of a liberal foreign policy since the start of the Cold War, the famous liberal leviathan, John Ikenberry, argues that “the post-9/11 doctrine of national security strategy . . . has been based on . . . American global dominance, the preventative use of force, coalitions of the willing, and the struggle between liberty and evil.”15 American foreign policy has misguidedly focused on spreading democracy, as opposed to building a liberal international order based on universally accepted principles that actually set the conditions for individual nation states to select their own system of governance. Anne-Marie Slaughter, the former Dean of the Woodrow Wilson School of Public and International Affairs, argues that true Wilsonian idealists “support liberal democracy, but reject the possibility of democratizing peoples . . .”16 and reject military primacy in favor of supporting a rules-based system of order. Investment in a liberal world order would also set the conditions for the United States to **garner support from noncommitted regional powers** (i.e., Russia, India, Japan, etc.), or “swing civilizations,” in countering China's increasing hegemonic influence.17 These states reside within close proximity to the Indian Ocean, which will likely emerge as the geopolitical focus of the American foreign policy during the 21st century, and appropriately have the ability to offset China's imperial dominance in the region.18 Critics of a liberal world construct argue that idealism is not necessary, based on the assumption that nations that trade together will not go to war with each other.19 In response, foreign affairs columnist Thomas L. Friedman rebukes their arguments, acknowledging the predicate of commercial interdependence as a factor only in the decision to go to war, and argues that while globalization is creating a new international order, differences between civilizations still create friction that may overcome all other factors and lead to conflict.20 Detractors also warn that as China grows in power, it will no longer observe “the basic rules and principles of a liberal international order,” which largely result from Western concepts of foreign relations. Ikenberry addresses this risk, citing that China's leaders already recognize that they will gain more authority within the existing liberal order, as opposed to contesting it. China's leaders “want the protection and rights that come from the international order's . . . defense of sovereignty,”21 from which they have benefitted during their recent history of economic growth and international expansion. Even if China executes a peaceful rise and the United States overestimates a Sinic threat to its national security interest, the emergence of a new imperial power will challenge American leadership in the Indian Ocean and Asia-Pacific region. That being said, it is more likely that China, as evidenced by its military and economic expansion, will displace the United States as the regional hegemonic power. Recognizing this threat now, the United States must prepare for the eventual transition and immediately begin building the legitimacy **and support of a system of rules that will protect its interests later when we are no longer the world's only superpower**.

#### Helium is key to the fibre optics

DiChristina 10 (Mariette – Editor in Chief of Scientific American, “The coming shortage of helium”, 6/30, <http://blogs.scientificamerican.com/observations/2010/06/30/the-coming-shortage-of-helium/>)

LINDAU, Germany—Quick: What do MRI machines, rockets, fiber optics, LCDs, food production and welding have in common? They all require the inert, or noble, gas helium for their use or at some stage of their production. And that helium essentially could be gone in less than three decades, Robert C. Richardson, winner, along with Douglas Osheroff and David Lee, of the 1996 Nobel Prize in Physics, said at the 60th annual Nobel Laureate Lectures at Lindau today. “Once it is released into the atmosphere, say, in the form of party balloons, it is lost to the Earth forever—it is lost to the Earth forever ,” he added. Helium molecules, produced by the sun’s energy, naturally make up only about five parts per million of the Earth’s atmosphere. The rest of the gas—the second lightest element in the universe after hydrogen—escaped our planet 4.7 billion years ago. The U.S. holds vast majority of the world helium stocks, managed by the U.S. Bureau of Land Management; the gas sits underground in natural salt domes atop granite in the Great Plains. Congress passed a law in 1996 dictating the sale of all U.S. stocks by 2015 to compensate the government for its investment in the helium and its storage. A 2000 study conducted by the National Research Council concluded that a helium surplus would exist for the foreseeable future. Soon after that report, however, helium usage skyrocketed, as the gas yielded many benefits for industry and medicine. In a January 2010 report for the National Research Council, “Selling the Nation’s Helium Reserve,” Richardson and committee cochair Charles G. “Chip” Groat, a University of Texas at Austin geologist, described the pitfalls of the current U.S. strategy. Many industrial processes rely on helium. In 2007, the most recent year for which figures are available, said Richardson, 28 percent of helium use went to cryogenics for MRI and nuclear magnetic resonance machines—nearly all of it for clinical purposes (scientific cryogenic uses are only 3 percent of that total). Some 26 percent of helium is used in pressurizing and purging of rockets; another 20 percent for welding; and 13 provides inert atmospheres in the production of fiberoptics, LCDs and food.

#### That’s key to effective aerospace innovation

Howard 11 (Courtney E., senior technical editor at Computer Graphics World, "Optical technology: at the speed of light," 4-1-11, <http://www.militaryaerospace.com/articles/print/volume-22/issue-4/technology-focus/optical-technology-at-the-speed-of-light.html>)

Optical advantages Optical components and systems are attractive for airborne applications, ranging from a flight-critical databus to a video or sensor link, given the desire for the reduction of SWaP, ease of installation, and EMI immunity, Powers says. In ground-based applications-such as secure bunker-to-bunker communications, electro-optic (EO) sensor mast-to-control station links, or RF over fiber antennae links-the advantage of optics over distance often is the deciding factor, followed by EMI immunity, security, and reduced weight. "The big thing we're seeing is in a lot of aircraft, they want to reduce weight," observes Kirk Lussier, program and account manager at DiCon Fiberoptics in Richmond, Calif. "Fiber weighs a lot less [than copper]-that's a big advantage of moving to fiber-optic systems. "In telecom, fiber deployment started with the longest networks, where optical technology proved itself quickly from a cost perspective," says Robert Schleicher, vice president of product development at DiCon Fiberoptics. "Over the years, it has spread out and proven itself in smaller and smaller networks-regional and then local networks, even within office networks-and to some extent, the same trend is now extending itself to the networks within planes, ships, and land vehicles." Farther and faster Optical components hold the potential for higher performance, an attractive attribute given the amount of data being acquired and exchanged on the digital battlefield. "Optical interconnects allow faster data transmission and, thus, higher processing speeds," admits Andreas Gerster, worldwide business development manager of optics at Agilent Technologies in Santa Clara, Calif. "As transceivers that are usable on aircraft become faster and faster, designers want higher data rates," Lussier notes. "It's not a problem for optical technology. Our switches are all-optical; there's no OEO (optical-electrical-optical) conversion, so it can handle any data rate." Optical technologies provide the ability to transport high volumes of data over significant distances. Copper backplanes and cable assemblies, as are deployed throughout mil-aero environments, are extremely length sensitive. "The greater the distance, the higher the attenuation and the lower the data rate," Powers explains. "Optical fiber has much, much lower attenuation, thereby eliminating distance as a primary design constraint. Computers that need to communicate can be hundreds of meters apart and interact as though they are in the same chassis."

#### That’s the lynchpin of air power – suppliers are on the brink

Thompson 9 (David, President – American Institute of Aeronautics and Astronautics, “The Aerospace Workforce”, Federal News Service, 12-10, Lexis)

Aerospace systems are of considerable importance to U.S. national security, economic prosperity, technological vitality, and global leadership. Aeronautical and space systems protect our citizens, armed forces, and allies abroad. They connect the farthest corners of the world with safe and efficient air transportation and satellite communications, and they monitor the Earth, explore the solar system, and study the wider universe. The U.S. aerospace sector also contributes in major ways to America's economic output and high- technology employment. Aerospace research and development and manufacturing companies generated approximately $240 billion in sales in 2008, or nearly 1.75 percent of our country's gross national product. They currently employ about 650,000 people throughout our country. U.S. government agencies and departments engaged in aerospace research and operations add another 125,000 employees to the sector's workforce, bringing the total to over 775,000 people. Included in this number are more than 200,000 engineers and scientists -- one of the largest concentrations of technical brainpower on Earth. However, the U.S. aerospace workforce is now facing the most serious demographic challenge in his 100-year history. Simply put, today, many more older, experienced professionals are retiring from or otherwise leaving our industrial and governmental aerospace workforce than early career professionals are entering it. This imbalance is expected to become even more severe over the next five years as the final members of the Apollo-era generation of engineers and scientists complete 40- or 45-year careers and transition to well-deserved retirements. In fact, around 50 percent of the current aerospace workforce will be eligible for retirement within just the next five years. Meanwhile, the supply of younger aerospace engineers and scientists entering the industry is woefully insufficient to replace the mounting wave of retirements and other departures that we see in the near future. In part, this is the result of broader technical career trends as engineering and science graduates from our country's universities continue a multi-decade decline, even as the demand for their knowledge and skills in aerospace and other industries keeps increasing. Today, only about 15 percent of U.S. students earn their first college degree in engineering or science, well behind the 40 or 50 percent levels seen in many European and Asian countries. Due to the dual-use nature of aerospace technology and the limited supply of visas available to highly-qualified non-U.S. citizens, our industry's ability to hire the best and brightest graduates from overseas is also severely constrained. As a result, unless effective action is taken to reverse current trends, the U.S. aerospace sector is expected to experience a dramatic decrease in its technical workforce over the next decade. Your second question concerns the implications of a cutback in human spaceflight programs. AIAA's view on this is as follows. While U.S. human spaceflight programs directly employ somewhat less than 10 percent of our country's aerospace workers, its influence on attracting and motivating tomorrow's aerospace professionals is much greater than its immediate employment contribution. For nearly 50 years the excitement and challenge of human spaceflight have been tremendously important factors in the decisions of generations of young people to prepare for and to pursue careers in the aerospace sector. This remains true today, as indicated by hundreds of testimonies AIAA members have recorded over the past two years, a few of which I'll show in brief video interviews at the end of my statement. Further evidence of the catalytic role of human space missions is found in a recent study conducted earlier this year by MIT which found that 40 percent of current aerospace engineering undergraduates cited human space programs as the main reason they chose this field of study. Therefore, I think it can be predicted with high confidence that a major cutback in U.S. human space programs would be substantially detrimental to the future of the aerospace workforce. Such a cutback would put even greater stress on an already weakened strategic sector of our domestic high-technology workforce. Your final question centers on other issues that should be considered as decisions are made on the funding and direction for NASA, particularly in the human spaceflight area. In conclusion, AIAA offers the following suggestions in this regard. Beyond the previously noted critical influence on the future supply of aerospace professionals, administration and congressional leaders should also consider the collateral damage to the space industrial base if human space programs were substantially curtailed. Due to low annual production rates and highly-specialized product requirements, the domestic supply chain for space systems is relatively fragile. Many second- and third-tier suppliers in particular operate at marginal volumes today, so even a small reduction in their business could force some critical suppliers to exit this sector. Human space programs represent around 20 percent of the $47 billion in total U.S. space and missile systems sales from 2008. Accordingly, a major cutback in human space spending could have large and highly adverse ripple effects throughout commercial, defense, and scientific space programs as well, potentially triggering a series of disruptive changes in the common industrial supply base that our entire space sector relies on.

#### Global nuclear war

Tellis 98 (Ashley, Senior Political Scientist, “Sources of Conflict in the 21st Century”, http://www.rand. org/publications/MR/MR897/MR897.chap3.pdf)

This subsection attempts to synthesize some of the key operational implications distilled from the analyses relating to the rise of Asia and the potential for conflict in each of its constituent regions. The first key implication derived from the analysis of trends in Asia suggests that American air and space power will continue to remain critical for conventional and unconventional deterrence in Asia. This argument is justified by the fact that several subregions of the continent still harbor the potential for full-scale conventional war. This potential is most conspicuous on the Korean peninsula and, to a lesser degree, in South Asia, the Persian Gulf, and the South China Sea. In some of these areas, such as Korea and the Persian Gulf, the United States has clear treaty obligations and, therefore, has preplanned the use of air power should contingencies arise. U.S. Air Force assets could also be called upon for operations in some of these other areas. In almost all these cases, U.S. air power would be at the forefront of an American politico-military response because (a) of the vast distances on the Asian continent; (b) the diverse range of operational platforms available to the U.S. Air Force, a capability unmatched by any other country or service; (c) the possible unavailability of naval assets in close proximity, particularly in the context of surprise contingencies; and (d) the heavy payload that can be carried by U.S. Air Force platforms. These platforms can exploit speed, reach, and high operating tempos to sustain continual operations until the political objectives are secured. The entire range of warfighting capability—fighters, bombers, electronic warfare (EW), suppression of enemy air defense (SEAD), combat support platforms such as AWACS and J-STARS, and tankers—are relevant in the Asia-Pacific region, because many of the regional contingencies will involve armed operations against large, fairly modern, conventional forces, most of which are built around large land armies, as is the case in Korea, China-Taiwan, India-Pakistan, and the Persian Gulf. In addition to conventional combat, the demands of unconventional deterrence will increasingly confront the U.S. Air Force in Asia. The Korean peninsula, China, and the Indian subcontinent are already arenas of WMD proliferation. While emergent nuclear capabilities continue to receive the most public attention, chemical and biological warfare threats will progressively become future problems. The delivery systems in the region are increasing in range and diversity. China already targets the continental United States with ballistic missiles. North Korea can threaten northeast Asia with existing Scud-class theater ballistic missiles. India will acquire the capability to produce ICBM-class delivery vehicles, and both China and India will acquire long-range cruise missiles during the time frames examined in this report.

#### Helium is key to particle accelerator science – specifically the ILC

Cofield 9 (Calla – Science Writer , “Helium’s shrinking bubble”, 7/8, http://www.symmetrymagazine.org/sites/default/files/legacy/pdfs/200907/heliums\_shrinking\_bubble.pdf)

At a couple of degrees above absolute zero, far colder than any living organism can survive, liquid helium stirs to life the largest particle accelerators in the world. It pulses through the veins of the Large Hadron Collider, following thousands of dipole superconducting magnets around a 27-kilometer ring. Flowing through magnets in Fermilab’s Tevatron, it helps jump-start subatomic particles on their way. These and other vital organs at dozens of labs around the world depend on helium to help them thrive. Hot air balloons, blimps, car airbag systems, welding, leak detection, scuba breathing mixtures, and NASA space shuttles all use helium. Cryogenics, which includes cooling for particle accelerators and detectors, consumes 28 percent of helium in the United States, with half of that chilling tens of thousands of Magnetic Resonance Imaging, or MRI, machines. And the market is growing. At the turn of the 20th century, natural gas miners found helium coming from underground, produced by the radioactive decay of uranium and thorium. It appears in pockets of natural gas in small portions, with three percent helium considered a good ratio. Although helium is relatively easy to extract, it falls on the natural gas companies to capture the gas or let it go. Lighter than air, helium released from the Earth escapes the atmosphere into space. As the secondsmallest atom in the universe, the cunning gas finds its freedom through almost any opening, joint or crack, eventually leaking out of party balloons and even passing through some types of glass. Like oil, coal, and natural gas, Earth’s supply of helium will inevitably run out. While the physics community is aware of this impending problem, says Fermilab cryogenic engineer Tom Peterson, “we’re just not sure what to do.” The coldest liquid “ Helium,” says Serge Claudet, “is a very nice gas.” Claudet is head of the Large Hadron Collider’s cryogenics operation team, and he has a very specific set of qualifications for a “nice gas.” Placid helium is non-flammable, a big bonus for facilities storing large quantities of it. A noble gas, it is also easy to keep clean since it doesn’t tend to bond to other elements. Helium is the only element that is liquid at nearly absolute zero, and even at that frigid temperature solidifies only under pressure. Helium’s ultra-cool nature makes it the perfect option—the only option—for many superconducting applications. At super-cold temperatures, certain materials— such as copper, aluminum, and niobium titanium—lose all resistance to electricity. This allows electrons to flow uninhibited, delivering current with 100 percent efficiency. Wrapped into coils, superconducting wires become electromagnets that substantially outperform conventional magnets in the strength of their magnetic fields. With this strength, scientists can steer particle beams around circular tracks, as the particles move at nearly the speed of light. 27 symmetry | volume 06 | issue 03 | july 09 To maintain these cold temperatures, superconducting magnets require a liquid coolant that will flow over them, pick up excess heat, and carry it away. The helium refrigeration system at Fermilab rumbles with the get-up of 10,000 horsepower, cooling 10,000 liters of liquid helium—a little more than enough to fill two double-decker buses. Helium exits the refrigeration unit through pipes of stainless steel, one of the few materials that won’t become brittle and crack at 1.8 kelvin, or minus 456 degrees Fahrenheit. Peterson and the cryogenics team surround that pipe in a vacuum, seal it in a second pipe, box the pipes in a copper thermal shield, wrap that in another layer of shielding, and weld the whole package inside a vacuum-tight steel container. It’s the ultimate thermos, dedicated to reducing heat loss to zero. “ Liquid helium is a utility in the production of the particle beam, like power or water,” Peterson says. “ When the cooling is available, experimenters don’t think much about it. It is when it goes away that you notice it.” A knack for getting loose In theory, a system carrying helium through a facility like Fermilab should never need to replenish its supply. It should carry cold helium to its target, bring warmed helium back to the refrigeration unit, and so forth. But joints in miles of piping and hair-line cracks unseen by engineers leave helium just enough room to escape. Materials commonly used to seal up joints become brittle at 1.8 kelvin and cryogenics teams can dedicate only so much time to searching for leaks. Brookhaven National Laboratory holds 50,000 liters of liquid helium and loses 20 percent to leaks per year; after the LHC’s yearly shut-down, cooling-down, and starting up, the helium loss is about 25-30 percent. This leaked helium is rarely recovered. In addition, power outages cause helium to heat up and expand beyond what facilities can hold, forcing them to release it into the atmosphere. In 1925, the US government recognized helium’s limited availability and began storing it in the Federal Helium Reserve in Amarillo, Texas. In the 1990s, in an effort to keep helium costs down, the government began selling off the reserve. Debate over this decision still rages between those who would like helium costs capped, and those who worry what will happen when the supplies run out. Even so, prices have nearly doubled in the United States in the past three years. In 2007, several US helium refineries failed to come online as scheduled, due to a series of coincidental delays. Helium users felt the pinch. Roberto Than, a cryogenics specialist at Brookhaven, says the lab’s supplier warned of possible delays in delivery. It turned out to be a close call. “We were still able to get it on time,” Than says, allowing the lab’s Relativistic Heavy Ion Collider to start up on schedule. Making recycling pay Although experts know helium isn’t as rare as xenon nor as abundant as nitrogen, they have difficulty assessing just how much helium is left underground, and they can’t tell how much of that will be captured by natural-gas miners. It is possible that in as little as 30 years, world helium production could peak. While there is no direct concern for tomorrow, Claudet says the particle physics community does have a focus on helium conservation, and notes that over the past 30 years helium recovery efforts have improved significantly. Large facilities like CERN, Fermilab, and DESY have always liquefied their own helium and have increased efforts to recapture it. At SLAC National Accelerator Laboratory, workers built a custom recycling unit to purify contaminated helium from the PEP-II accelerator when it was running. “ At CERN we’re working on diminishing losses,” Claudet says. “We’re trying to increase storage and become less dependent” on the helium market. Many small particle physics facilities don’t use enough helium to make recovery cost-effective. Refrigeration machines need frequent maintenance and eat up a significant amount of power. So used helium is often released into the atmosphere. But a new technology may change that. The Soudan Mine in Minnesota hosts the Cryogenic Dark Matter Search, CDMS, in a laboratory a half mile underground. There, protected from cosmic rays, physicists hope to identify the passage of dark matter particles. To reduce thermal noise, they cool their germanium and silicon detectors with liquid helium. In May 2009, Soudan scientists carefully lugged a new type of helium refrigerator, called a “cryocooler,” down a 12-foot-wide, 2341-foot-deep mine shaft that provides the only entrance to the laboratory. These small helium liquefiers, about the size of a household refrigerator, cost less than one-fifth the price of a traditional liquefier. Bauer, who manages the CDMS project, explains that the lab’s 60-literper- day helium usage wouldn’t justify the cost of a traditional liquefier, especially since the older units usually need maintenance every few weeks. But the cryocoolers are a perfect fit for Soudan, and need maintenance only every year or two. Bauer says he learned about the cryocoolers less than two years ago and made a move to obtain them right away. With helium prices climbing the way they are, the coolers should pay for themselves in less than two years. Pressing ahead Peterson is now working on designs for the International Linear Collider, which would rely on liquid helium as well. But by the time it is built and running, physicists may already need to be on the lookout for alternatives. High-temperature superconductors present one possibility. Scientists are working doggedly to understand the mechanics of superconductivity, and hope to achieve it at temperatures where elements such as nitrogen are still liquid and can be used as coolants. Nitrogen is cheaper than helium, represents about 80 percent of the air we breathe, and isn’t flammable or explosive like hydrogen. However, at this time there are no hightemperature superconductors that could fill the needs of particle accelerators. While the particle physics community must do its part to preserve the world’s helium supplies, in some ways its hands are tied. Although facilities like Fermilab and CERN use helium on a larger scale than most, they represent only a very small percentage of overall helium consumption. For that reason, their conservation efforts alone won’t stop a helium shortage. But that hasn’t stopped them from trying. Conservation efforts at large facilities continue to improve and grow, while physicists and engineers press ahead to create new technologies that could cut helium usage across the board. Slowly but surely, high-energy physics is preparing for a possible helium shortage. Only time will tell if it is acting fast enough.

#### Specifically, the International Linear Collider is key to antimatter propulsion --- stops nuclear rockets

Genuth 6 (Iddo, Founder and Chief Editor – FoT, “New Antimatter Engine Design”, The Future of Things, 10-29, http://thefutureofthings.com/articles.php?itemId=33/64/)

A team of scientists is currently working with NASA to develop a new form of space propulsion technology based on positrons. This revolutionary antimatter engine will require only a few milligrams of positrons to send a spaceship to Mars. Facing many hurdles along the way, this is the first time some of the real problems of building a real antimatter engine are being confronted. Space travel has always been mankind's dream. The 1969 historic moon landing brought the hope that soon we will be able to visit other planets in our solar system, but almost 40 years later this dream is still just that. Reaching Mars will require huge investments in and development of many new technologies. One of the biggest technological hurdles we shall need to surpass is the development of a cost-effective and practical propulsion system for a Mars-bound spaceship. Use of conventional chemical rockets, like the Saturn V that took the Apollo team to the Moon, is not practical since the new spaceship would have to carry too much fuel, making it expensive and complicated to lift into orbit. For this reason, a nuclear-powered engine has been suggested for the Mars mission. Nuclear propulsion systems for rockets have been studied by NASA since the early 1960's under the Nuclear Engine for Rocket Vehicle Application (NERVA) program, subsequently cancelled in 1972. In 2003, the nuclear space propulsion idea was revived by the Prometheus Project still under development. Although the nuclear propulsion option looks like a prime candidate for the future Mars mission, its disadvantages (mainly extreme radioactivity) led people like Dr. Gerald A. Smith, founder of [Positronics Research](http://www.pr-llc.com/) in Santa Fe, New Mexico, to suggest a bold new alternative – antimatter. First predicted by the British physicist Paul Dirac in 1928 (and experimentally confirmed 4 years), antimatter is comprised of antiparticles that annihilate when they come in contact with ordinary particles, producing a burst of energy in the form of energetic photons. NASA's Institute for Advanced Concepts ([NIAC](http://www.niac.usra.edu/)) recently funded Dr. Smith's research to examine the potential applications of antimatter as a fuel for a manned mission to Mars. Dr. Smith and his team at Positronics Research [suggested](http://www.niac.usra.edu/files/studies/abstracts/1147Smith.pdf) to NASA three possible propulsion concepts, all based on positrons (or anti-electrons). Interview with Positronics Research [TFOT](http://www.tfot.info) recently conducted an interview with Dr. Smith to learn more about the potential of positron-based space propulsion systems.  Q: Were you the first to come up with the idea for a positron-based propulsion system? A: The first positron engine was proposed by a German engineer, Eugen Saenger, in 1953. This was the classic photon rocket, but the photons (gamma rays) had to be made to reflect in order to give thrust. Unfortunately, there was no way to deflect the gamma rays, then or now. We are different in that we make the gamma rays interact, producing ablative residue, which generates thrust. Compared to antiprotons, positrons are very advantageous: no residual radioactivity, low energy gamma rays make for a compact engine (energy confinement is much simpler), and costs for making positrons are many orders of magnitude less (due to technology of electron accelerators versus proton accelerators). As for the original idea, I can say with 95% confidence that we were the first to tackle the real issues of positron propulsion. Saenger did the early work on dynamical computations of a true photon rocket, but did not deal with the real issues of how to get thrust out of his photons. Sanger deserves the credit for the "big idea", we for solving the physics and engineering problems.  Q: You mentioned that positrons emit less powerful gamma rays than antiprotons. Is the energy produced by positrons still sufficient for a useful propulsion system? A: The energy of a single positron-electron annihilation is a factor of 1836 less than the energy of a single antiproton-proton annihilation. So, the energy per particle emitted in the annihilation is much less for positron annihilation. Combined with the constraints of conservation of momentum and energy, this leads to the result that positron-electron annihilation gives two gamma rays of equal energy, equal to 511 keV. Conversely, the antiproton-proton annihilation gives on average five particles, called pi-mesons, with an average energy of 367 MeV (1 MeV = 1000 keV). On average, 1.5 of the five mesons are neutral pi mesons, and each decays into two gamma rays. So, the average gamma ray energy is 367/2 or 183 MeV. The low energy of the positron annihilation gamma rays make these very easy to contain and turn into propulsive energy. But, it takes 1836 times more positrons to get the same amount of energy as one antiproton. The antiproton annihilation energy is very hard to contain and turn into propulsive energy. In fact, the only way I know to use antiprotons is to make them create nuclear fission reactions in materials like uranium, which results in one of the nasty sides of nuclear fission, namely the presence of radioactive isotopes created by the engine. Q: Can the positron engine perform liftoff or is it more like an ion engine, which can only be used in space? A: Yes to the first question, and no to the second question. But, for many practical reasons we prefer for the first trials to assemble the spacecraft in LEO (low-earth orbit) and power it with positrons from LEO into space. Q: Is this mainly a safety issue or are there other considerations? A: It is partly a safety issue and partly an economic issue. 10 milligrams (mg) (a Mars mission) of positrons contains the energy of 428 tons of TNT. Or, to put it another way, 10 mg of positrons contains the energy of 23 external fuel tanks on the Space Shuttle. We would want to make sure that we know how to handle the positrons with utter confidence before attempting a liftoff from Earth. This would come with time. (Recall the early attempts to launch rockets from Earth in the 1920-1940's with all the mishaps.) The other reason is economy. It takes a lot of energy to lift the spacecraft into LEO. We know how to do this with chemical fuels. It is much cheaper to put the parts of the spacecraft into LEO with chemical fuels than lift the whole thing into LEO using positrons.    Q: Would you describe in a few words the three positron-based propulsion concepts you have come up with, how they work, and what their main advantages and disadvantages are? A: The three positron-based propulsion systems we suggested to NIAC were: Solid core - Energy is transferred to a propellant in tungsten metal matrix heated by annihilation gamma rays. Advantages - Well understood technology. Disadvantages - Performance limited by melting temperature of tungsten. Gas core - Energy is transferred to liquid/gas propellant directly heated by annihilation gamma rays. Advantages - Improvement over solid core, not limited by melting temperature. Disadvantages - Flowing multi-fluid is unstable at boundaries, may ionize and create plasma.  Solid Ablation - Energy is transferred to a material that ablates off surface of a pusher plate. Advantages - Simplicity in design, no obvious technology limits. Disadvantages - Half of the gamma rays do not strike the pusher plate, maximum efficiency 50%.   Q: How do you intend to deal with the two major problems of antimatter propulsion systems - the creation of antimatter and finding a way to store it for long periods of time? A: We are working on production of positrons in large quantities. We are getting a big boost from work being done for the International Linear Collider (ILC). The production rates required for the ILC are just a factor of 10-100 below those required for propulsion systems. Our company, Positronics Research LLC, has been working on storage for 5 years. We think we have found the pathway to long-term storage of large amounts of positrons. It involves making electrically neutral positronium (neutral atom of an electron and positron) atoms, then stabilizing them in magnetic and electric fields. You cannot hold 10 mg of bare positrons in a magnetic trap. The "space charge" forces are enormous and the "positron plasma" blows itself apart. But, with electrically neutral atoms containing positrons, this is not a problem. Our work with positronium is on-going. My sponsors implore me to not discuss details at this time. Suffice it to say we have had some very encouraging results.

#### Nuclear propulsion causes accidents and extinction

Gutheinz 5 (Joseph, Former Senior Special Agent – NASA Office of Inspector and JD, “NASA’s Plutonium Gamble”, http://www.paranoiamagazine.com/plutogamble.html)

Nukes in Space  
The Cassini-Huygens mission is a joint project of NASA and the European Space Agency (ESA) to explore Saturn and its moons. Launched in October 1997 and powered by 72.3 pounds of plutonium-238, Cassini circled the entire Earth only 312 miles above our heads. The 1999 Cassini "fly-by" heightened fears of an "inadvertent reentry" that could have dosed Earth's entire population.

Dr. Helen Caldicott, of Physicians for Social Responsibility, explains that less than 1 millionth of a gram of plutonium is a carcinogenic dose. One pound, if uniformly distributed, could induce lung cancer in every person on Earth. These physicians believe NASA's plutonium accidents are responsible for a worldwide increase in cancer rates since that time. (see Grossman)

Dr. Michio Kaku says NASA's environmental impact studies underestimated the possible risks of the Cassini mission. He notes that NASA's studies appeared as though accurate calculations had been made, but in reality "no full-scale test of any realistic accident scenario has ever been carried out." Rates of uncertainty cannot be calculated, he concludes, because NASA's numbers are all "educated guesses." NASA's facts and figures are assumed to be correct and are not to be questioned.

NASA claimed that solar power wouldn't work for Cassini because the probe would be too far from the sun. NASA had also claimed the Galileo mission had no other alternative than nuclear power. Weeks after its launch, a JPL study showed that Galileo could have used solar power without impacting its objectives.

Physicist Carla Signorini stated in 1995, "If given the money to do the work, within five years [ESA] could have solar cells ready to power a space mission to Saturn." Yet, NASA and ESA still use nuclear fuel on deep space missions because the budgets for solar power systems are "a grain of sand from the huge bucket in which nuclear research is funded."

Many now believe that NASA is motivated more by a desire for military funding, and that plutonium fueled space missions will indirectly aid public acceptance of the nuclear weaponization of space. Against the Outer Space Treaty of 1967, NASA's $3 billion Project Prometheus program will place nuclear reactors on the moon from where it will launch atomic-propelled rockets.

#### ILC key to advanced nuclear detection systems

Varadarajan 9 (Dr. U., “The Societal Benefits of the U.S. International Linear Collider Research and Development Program”, www.hep.net/falc/ILC%20wider%20scientific%20benefits.doc)

B.  Detector R&D

Exploring with precision the physics of the Terascale at the ILC poses tremendous challenges to current detector technology. Most ILC detector subsystems will have to perform beyond the current state-of-the-art.  A comparison of the ILC detector requirements with the performance of the detectors recently built for the Large Hadron Collider (LHC) can provide a sense of the challenge.  For example, at the heart of an ILC detector system will be a vertex detector, a compact particle tracking device about the size of a wine bottle which surrounds the interaction region.  The vertex detector is analogous to a 3D digital camera – it consists of concentric cylinders of finely segmented silicon detectors, similar to the arrays of small sensors used to record pixels in digital cameras. However, for the ILC, a billion pixels are needed in this 3D camera to measure the tracks of outgoing particles with micron precision.  In particular, this kind of precision is critical in order to accurately detect and characterize exotic heavy quarks produced by the collisions at the ILC which are critical pointers to new physics.  These heavy quarks live only for a billionth of a second and decay at “vertices” within the detector to familiar forms of matter. In order to achieve this precision, the sensor size for an ILC vertex detector must be reduced by a factor of 30 and the sensors must be thinner by a factor of 20 (to avoid disturbing the particles) as compared to those used at LHC detectors.  Further, as we describe in detail below, the readout speed required for the ILC is also much greater than the present state-of-the-art can provide – that is, we must be able to take consecutive 3D gigapixel pictures of the particle tracks much faster than any digital camera can today.   Meeting these demands is plausible only because the environment at the ILC is benign by LHC standards. The LHC demands detectors that are extremely radiation hard and that can operate at high speeds. The ILC, on the contrary, relaxes the radiation hardness requirement, admitting many additional technologies. It runs at comparatively low rates and consequently poses lighter demands for power dissipation. High precision, thin detectors are needed, which have not been developed for LHC.   Vertex Detector   The vertex detector is challenging because of the need to combine high precision with speed.  The electron and positron beams at the ILC consist of trains of electrons and positrons which cross about five times a second.  Each of these trains, in turn, consist of about 3000 bunches of more than 1010 electrons each, spaced by about 300 ns.  Thus, 1010 electrons and positrons cross within the detector (a bunch crossing) every 300ns for a period of 0.9 microseconds, five times a second.  Now, each of these bunch crossings will result in the deposition of roughly 5 particles per square centimeter in the innermost layer of the vertex detector.  If the signals are read out only once for the entire train of 3000 bunches-crossings, the accumulated backgrounds overwhelm the signal, and render the device useless. Unfortunately, the state-of-the-art in the technology that was the basis of the precise SLD detector used in the linear collider at SLAC, Charge Coupled Devices (CCDs, also familiar as the core technologies in digital cameras and camcorders), permits no more than one readout per train.   A British group has developed a new system based on CCDs, but while it is several orders of magnitude faster than any previous CCD system for science, it is probably still too sluggish, and the devices may not hold up in the radiation environment of the ILC.  Other groups are pursuing a variety of other approaches. Some are attempting to adapt the LHC devices, with their higher readout speeds, to the ILC environment by making them thinner and more finely grained. Others are developing smart devices with streamlined readout, or with the ability to timestamp the signals locally.  One of these strategies will need to work if the detector is to meet ILC needs.   Electromagnetic Calorimeter   The electromagnetic calorimeter (ECAL) is designed to measure the energy of light, high energy particles emerging from the interaction region that interact primarily via electromagnetic interactions, such as electrons or photons.  The ECAL is a “sandwich calorimeter” consisting of finely segmented, alternating layers of an absorber material with high electric charge nuclei (like tungsten or lead) and a sensor and readout material.  A high energy electron entering a tungsten absorber layer of sufficient thickness will likely be deflected by the high electric field near some nucleus strongly enough so that it will emit a virtual photon with enough energy and momentum to decay into an electron positron pair, roughly moving in the same direction as the original electron.  Thus, one high energy particle becomes three, which in turn further interact with other tungsten nuclei, creating a cascade or shower of particles.  This shower will then enter a sensor plane, which may be made of silicon pad diodes, monolithic active pixel sensors (MAPS) or of scintillator strips or tiles.  In this last case, as the shower passes through the scintillators, each particle creates a further shower of photons which can then be readout by novel solid-state, silicon based photo-sensors or silicon photomultipliers.  The energy contained in the initial high energy electron can be computed by measuring the depth and size of the resulting showers of light through the many layers of the ECAL.   The need for exquisite energy resolution for precision tests of the physics of the Terascale will require substantial improvements over current ECAL technology.  The sensor sizes in the electromagnetic calorimeter need to be a factor of 200 smaller than those in the LHC.  Currently, the CALICE collaboration, with 190 physicists and engineers drawn from 32 institutes and 9 countries drawn from Europe, Asia and the Americas, is studying the fine-grained silicon-tungsten device that might make this possible. A group from SLAC, Oregon and Brookhaven and another from Asia are testing devices based on the same principle, but with somewhat different electronics and mechanical design. Further, though silicon-based photo-sensors have been developed by various groups, the signal-to-noise ratio, gain, long-term performance, and pixel density required for the ILC calorimeter has not yet been achieved.  It is expected that the ILC R&D effort will be a significant driver for this new technology.    Hadronic Calorimeter   The Hadronic Calorimeter (HCAL) is responsible for measuring the energy of the heavier hadrons (that is, particles which experience nuclear as well as possibly electromagnetic interactions) that may deposit only some of their energy in the ECAL.  Several technologies of fine-segmented sampling calorimeters (i.e. with separate absorber and sensor layers just like the ECAL above) are under investigation with either analog or digital readout. The analog readout hadronic calorimeters use scintillator tiles as sensors, and steel or lead as absorbers.  These scintillator tiles would be readout by the silicon photo-detectors discussed above.   The digital readout calorimeters make use of gaseous signal amplification, such as GEMs (Gaseous Electron Multipliers), Micromegas (Micro mesh gaseous structures) or RPCs (Resistive Plate Chambers) which are being developed in-house specifically for this applications.  These calorimeters consist of thin and large area gas-filled chambers interspersed between steel absorber plates.  The hadronic showers generated in the steel absorber plates create ionized electrons in the gas-filled chambers as they pass through. These are then accelerated and detected digitally at the chamber anode, which is segmented in small pads of about 1 cm2 size, matching the granularity needed for the particle flow algorithms used to compute jet energies to the precision required.   The Detector Magnet   Fundamental to determining the momentum of charged particles is the fact that their trajectories bend in the presence of a magnetic field.  Thus, a basic component of any ILC detector will be a large superconducting electromagnet providing such a magnetic field.  The precision in momentum needed for an ILC detector requires a very strong magnetic field, nearly 50,000 times the strength of the magnetic field at the Earth’s surface, which is also highly uniform over a large volume.   Data Acquisition, Management, and Analysis   While the overall rate of bunch crossings at the ILC will be on the order of 104 per second or 10 kHz, the pulsed nature of the ILC beam will result in much higher peak rates of several MHz.  Appropriately tailored strategies for the acquisition and management for the large amount of vertex and calorimeter data associated with such a data stream need to be developed and validated.  Further, novel data analysis and sharing tools will be needed on a global scale to extract the relevant physics from the data emerging from the ILC.   Broader Impacts of ILC Detector R&D   ILC detector R&D will have important payoffs for instrumentation and data analysis in many other fields ranging from medicine to astrophysics. [[14]](http://www.hep.net/falc/ILC%20wider%20scientific%20benefits.doc" \l "_ftn14)  q        A new method for photon detection that is suitable for whole-body PET scans.  The ILC calorimeters may require a huge number of photon detectors.  One candidate device is a silicon photomultiplier, in which a photon triggers an avalanche in silicon. The silicon photomultiplier is small and inexpensive, and thus very suitable as a readout sensor both for the calorimeter and whole-body PET scans, but current test chips are too noisy. ILC physicists are working to improve their quality. q        Medical imaging may also benefit from the development of CMOS devices for the ILC vertex detectors.  q        Future experiments in particle physics, astrophysics and nuclear physics will also benefit from ILC detector R&D. Even those with very different goals are likely to draw upon technological advances driven by ILC detector needs, just as some candidate ILC devices draw upon advances made in connection with LHC detector R&D. In the case of the ILC, R&D on a fast, finely-segmented vertex detector and new calorimetry are likely to benefit other experiments, as are technologies associated with the high resolution tracking devices, the large, high-field, highly uniform magnet, and the detector stabilization, alignment, and monitoring systems. q        Particle detector instrumentation.  The very finely pixelated track detectors developed for ILC experiments will find applications such as security scanning and medical imaging. New large scale detector technologies that will be stimulated by ILC include very thin silicon pixel detectors, GEMs and micromegas.

#### That prevents nuclear terrorism

SD 5 (Science Daily, “Muon Detector could Thwart Nuclear Smugglers”, 3-5, http://www.scienceblog.com/cms/node/7136/print)

Existing radiographic methods are inefficient for detecting shielded nuclear materials and present radiation hazards to inspectors and vehicle passengers. Muon radiography uses the natural scattering of muons - produced by the decay of cosmic rays showering down on Earth - as a radiographic probe. In fact, efforts to shield nuclearmaterials with lead or similar heavy metals make a smuggled object easier to detect with muons. "We believe we've worked through all of the major obstacles to building a prototype system for a range of security scenarios," Morris said. Muon radiography works because muons are energetic enough to penetrate thick rock or heavy metals. Materials with large numbers of protons and tightly packed nuclei, such as plutonium and uranium or metals like lead and tungsten, produce stronger electromagnetic forces and therefore deflect muons more than less dense materials such as steel, aluminum or plastic. A pair of detectors above and another pair beneath a truck, cargo container or other suspect object record each muon's path before and after it passes through the cargo. By analyzing changes in energy and trajectory, computer algorithms build a three-dimensional mathematical map of dense items in the cargo. In the 1960s, Luis Alvarez usedmuon counters to seek hidden chambers inside the Second Pyramid of Giza. Muons strike the Earth from every angle, so the key to a workable detection system is to keep improving the computer algorithms for tomographic reconstruction. "If we measure themuon 's path and energy with two detectors going in and two coming out, we have a straight line on either side that tells us how much the target deflects themuon, and we can locate highly dense objects, as well distinguishing between materials," said Larry Schultz, a member of the Los Alamos team. One advantage of muon radiographs is their ability to discriminate between shielding materials and less dense metals. With an average energy of 3 billion electron volts, most muons can penetrate about six feet of lead. Gamma-ray detectors are far less penetrating, produce only cluttered, two-dimensional views that need additional interpretation and require hazardous materials such as cobalt. One drawback of detection systems such as airport screeners is the need for people to interpret images and data. The automation built into theLos Alamos computer algorithm makes inspectors' jobs easier because it doesn't convert data from nearly a million detector coordinates into images, Chartrand explained. Instead, using machine learning techniques, the algorithm is trained with known examples until it can decide directly whether a bomb, nuclearmaterials or shielding are present. "We've shown we can put the data through a machine-learning algorithm and train the system to spot objects of interest with a rate of false positives and false negatives that is less than 3 percent," Chartrand said. "We think we can continue to improve that."

#### Nuclear terrorism causes retaliation that sparks global nuclear war and extinction

Ayson 10 (Robert, Professor of Strategic Studies and Director of the Centre for Strategic Studies: New Zealand – Victoria University of Wellington, “After a Terrorist Nuclear Attack: Envisaging Catalytic Effects”, Studies in Conflict & Terrorism, 33(7), July)

*A Catalytic Response: Dragging in the Major Nuclear Powers*

A terrorist nuclear attack, and even the use of nuclear weapons in response by the country attacked in the first place, would not necessarily represent the worst of the nuclear worlds imaginable. Indeed, there are reasons to wonder whether nuclear terrorism should ever be regarded as belonging in the category of truly existential threats. A contrast can be drawn here with the global catastrophe that would come from a massive nuclear exchange between two or more of the sovereign states that possess these weapons in significant numbers. Even the worst terrorism that the twenty-first century might bring would fade into insignificance alongside considerations of what a general nuclear war would have wrought in the Cold War period. And it must be admitted that as long as the major nuclear weapons states have hundreds and even thousands of nuclear weapons at their disposal, there is always the possibility of a truly awful nuclear exchange taking place precipitated entirely by state possessors themselves. But these two nuclear worlds—a non-state actor nuclear attack and a catastrophic interstate nuclear exchange—are not necessarily separable. It is just possible that some sort of terrorist attack, and especially an act of nuclear terrorism, could precipitate a chain of events leading to a massive exchange of nuclear weapons between two or more of the states that possess them. In this context, today's and tomorrow's terrorist groups might assume the place allotted during the early Cold War years to new state possessors of small nuclear arsenals who were seen as raising the risks of a catalytic nuclear war between the superpowers started by third parties. These risks were considered in the late 1950s and early 1960s as concerns grew about nuclear proliferation, the so-called n+1 problem. It may require a considerable amount of imagination to depict an especially plausible situation where an act of nuclear terrorism could lead to such a massive inter-state nuclear war. For example, in the event of a terrorist nuclear attack on the United States, it might well be wondered just how Russia and/or China could plausibly be brought into the picture, not least because they seem unlikely to be fingered as the most obvious state sponsors or encouragers of terrorist groups. They would seem far too responsible to be involved in supporting that sort of terrorist behavior that could just as easily threaten them as well. Some possibilities, however remote, do suggest themselves. For example, how might the United States react if it was thought or discovered that the fissile material used in the act of nuclear terrorism had come from Russian stocks,[40](http://www.informaworld.com.proxy-remote.galib.uga.edu/smpp/section?content=a923238837&fulltext=713240928" \l "EN0040) and if for some reason Moscow denied any responsibility for nuclear laxity? The correct attribution of that nuclear material to a particular country might not be a case of science fiction given the observation by Michael May et al. that while the debris resulting from a nuclear explosion would be “spread over a wide area in tiny fragments, its radioactivity makes it detectable, identifiable and collectable, and a wealth of information can be obtained from its analysis: the efficiency of the explosion, the materials used and, most important … some indication of where the nuclear material came from.”[41](http://www.informaworld.com.proxy-remote.galib.uga.edu/smpp/section?content=a923238837&fulltext=713240928#EN0041) Alternatively, if the act of nuclear terrorism came as a complete surprise, and American officials refused to believe that a terrorist group was fully responsible (or responsible at all) suspicion would shift immediately to state possessors. Ruling out Western ally countries like the United Kingdom and France, and probably Israel and India as well, authorities in Washington would be left with a very short list consisting of North Korea, perhaps Iran if its program continues, and possibly Pakistan. But at what stage would Russia and China be definitely ruled out in this high stakes game of nuclear Cluedo? In particular, if the act of nuclear terrorism occurred against a backdrop of existing tension in Washington's relations with Russia and/or China, and at a time when threats had already been traded between these major powers, would officials and political leaders not be tempted to assume the worst? Of course, the chances of this occurring would only seem to increase if the United States was already involved in some sort of limited armed conflict with Russia and/or China, or if they were confronting each other from a distance in a proxy war, as unlikely as these developments may seem at the present time. The reverse might well apply too: should a nuclear terrorist attack occur in Russia or China during a period of heightened tension or even limited conflict with the United States, could Moscow and Beijing resist the pressures that might rise domestically to consider the United States as a possible perpetrator or encourager of the attack? Washington's early response to a terrorist nuclear attack on its own soil might also raise the possibility of an unwanted (and nuclear aided) confrontation with Russia and/or China. For example, in the noise and confusion during the immediate aftermath of the terrorist nuclear attack, the U.S. president might be expected to place the country's armed forces, including its nuclear arsenal, on a higher stage of alert. In such a tense environment, when careful planning runs up against the friction of reality, it is just possible that Moscow and/or China might mistakenly read this as a sign of U.S. intentions to use force (and possibly nuclear force) against them. In that situation, the temptations to preempt such actions might grow, although it must be admitted that any preemption would probably still meet with a devastating response. As part of its initial response to the act of nuclear terrorism (as discussed earlier) Washington might decide to order a significant conventional (or nuclear) retaliatory or disarming attack against the leadership of the terrorist group and/or states seen to support that group. Depending on the identity and especially the location of these targets, Russia and/or China might interpret such action as being far too close for their comfort, and potentially as an infringement on their spheres of influence and even on their sovereignty. One far-fetched but perhaps not impossible scenario might stem from a judgment in Washington that some of the main aiders and abetters of the terrorist action resided somewhere such as Chechnya, perhaps in connection with what Allison claims is the “Chechen insurgents' … long-standing interest in all things nuclear.”[42](http://www.informaworld.com.proxy-remote.galib.uga.edu/smpp/section?content=a923238837&fulltext=713240928#EN0042) American pressure on that part of the world would almost certainly raise alarms in Moscow that might require a degree of advanced consultation from Washington that the latter found itself unable or unwilling to provide.

### 1AC – Solvency

#### Certainty is key – and no link to environment DA

Griles 3 (Lisa, Deputy Secretary – Department of the Interior, “Energy Production on Federal Lands,” Hearing before the Committee on Energy and Natural Resources, United States Senate, 4-30)

Mr. GRILES. America’s public lands have an abundant opportunity for exploration and development of renewable and nonrenewable energy resources. Energy reserves contained on the Department of the Interior’s onshore and offshore Federal lands are very important to meeting our current and future estimates of what it is going to take to continue to supply America’s energy demand. Estimates suggest that these lands contain approximately 68 percent of the undiscovered U.S. oil resources and 74 percent of the undiscovered natural gas resources. President Bush has developed a national energy policy that laid out a comprehensive, long-term energy strategy for America’s future. That strategy recognizes we need to raise domestic production of energy, both renewable and nonrenewable, to meet our dependence for energy. For oil and gas, the United States uses about 7 billion barrels a year, of which about 4 billion are currently imported and 3 billion are domestically produced. The President proposed to open a small portion of the Arctic National Wildlife Refuge to environmentally responsible oil and gas exploration. Now there is a new and environmentally friendly technology, similar to directional drilling, with mobile platforms, self-containing drilling units. These things will allow producers to access large energy reserves with almost no footprint on the tundra. Each day, even since I have assumed this job, our ability to minimize our effect on the environment continues to improve to where it is almost nonexistent in such areas as even in Alaska. According to the latest oil and gas assessment, ANWR is the largest untapped source of domestic production available to us. The production for ANWR would equal about 60 years of imports from Iraq. The National Energy Policy also encourages development of cleaner, more diverse portfolios of domestic renewable energy sources. The renewable policy in areas cover geothermal, wind, solar, and biomass. And it urges research on hydrogen as an alternate energy source. To advance the National Energy Policy, the Bureau of Land Management and the DOE’s National Renewable Energy Lab last week announced the release of a renewable energy report. It identifies and evaluates renewable energy resources on public lands. Mr. Chairman, I would like to submit this for the record.\* This report, which has just come out, assess the potential for renewable energy on public lands. It is a very good report that we hope will allow for the private sector, after working with the various other agencies, to where can we best use renewable resource, and how do we take this assessment and put it into the land use planning that we are currently going, so that right-of-ways and understanding of what renewable resources can be done in the West can, in fact, have a better opportunity. The Department completed the first of an energy inventory this year. Now the EPCA report, which is laying here, also, Mr. Chairman, is an estimate of the undiscovered, technically recoverable oil and gas. Part one of that report covers five oil and gas basins. The second part of the report will be out later this year. Now this report, it is not—there are people who have different opinions of it. But the fact is we believe it will be a good guidance tool, as we look at where the oil and gas potential is and where we need to do land use planning. And as we update these land use plannings and do our EISs, that will help guide further the private sector, the public sector, and all stakeholders on how we can better do land use planning and develop oil and gas in a sound fashion. Also, I have laying here in front of me the two EISs that have been done on the two major coal methane basins in the United States, San Juan Basis and the Powder River Basin. Completing these reports, which are in draft, will increase and offer the opportunity for production of natural gas with coal bed methane. Now these reports are in draft and, once completed, will authorize and allow for additional exploration and development. It has taken 2 years to get these in place. It has taken 2 years to get some of these in place. This planning process that Congress has initiated under FLPMA and other statutes allows for a deliberative, conscious understanding of what the impacts are. We believe that when these are finalized, that is in fact what will occur. One of the areas which we believe that the Department of the Interior and the Bureau of Land Management is and is going to engage in is coordination with landowners. Mr. Chairman, the private sector in the oil and gas industry must be good neighbors with the ranchers in the West. The BLM is going to be addressing the issues of bonding requirements that will assure that landowners have their surface rights and their values protected. BLM is working to make the consultation process with the landowners, with the States and local governments and other Federal agencies more efficient and meaningful. But we must assure that the surface owners are protected and the values of their ranches are in fact assured. And by being good neighbors, we can do that. In the BLM land use planning process, we have priorities, ten current resource management planning areas that contain the major oil and gas reserves that are reported out in the EPCA study. Once this process is completed, then we can move forward with consideration of development of the natural gas. We are also working with the Western Governors’ Association and the Western Utilities Group. The purpose is to identify and designate right-of-way corridors on public lands. We would like to do it now as to where right-of-way corridors make sense and put those in our land use planning processes, so that when the need is truly identified, utilities, energy companies, and the public will know where they are Instead of taking two years to amend a land use plan, hopefully this will expedite and have future opportunity so that when the need is there, we can go ahead and make that investment through the private sector. It should speed up the process of right-of-way permits for both pipelines and electric transmission. Now let me switch to the offshore, the Outer Continental Shelf. It is a huge contributor to our Nation’s energy and economic security. The CHAIRMAN. Mr. Secretary, everything you have talked about so far is onshore. Mr. GRILES. That is correct. The CHAIRMAN. You now will speak to offshore. Mr. GRILES. Yes, sir, I will. Now we are keeping on schedule the holding lease sales in the areas that are available for leasing. In the past year, scheduled sales in several areas were either delayed, canceled, or **put under moratoria**, even though they were in the 5-year plan. It undermined certainty. It made investing, particularly in the Gulf, more risky. We have approved a 5-year oil and gas leasing program in July 2002 that calls for 20 new lease sales in the Gulf of Mexico and several other areas of the offshore, specifically in Alaska by 2007. Now our estimates indicate that these areas contain resources up to 22 billion barrels of oil and 61 trillion cubic feet of natural gas. We are also acting to raise energy production from these offshore areas by providing royalty relief on the OCS leases for new deep wells that are drilled in shallow water. These are at depths that heretofore were very and are very costly to produce from and costly to drill to. We need to encourage that exploration. These deep wells, which are greater than 15,000 feet in depth, are expected to access between 5 to 20 trillion cubic feet of natural gas and can be developed quickly due to existing infrastructure and the shallow water. We have also issued a final rule in July 2002 that allows companies to apply for a lease extension, giving them more time to analyze complex geological data that underlies salt domes. That is, where geologically salt overlays the geologically clay. And you try to do seismic, and the seismic just gets distorted. So we have extended the lease terms, so that hopefully those companies can figure out where and where to best drill. Vast resources of oil and natural gas lie, we hope, beneath these sheets of salt in the OCS in the Gulf of Mexico. But it is very difficult to get clear seismic images. We are also working to create a process of reviewing and permitting alternative energy sources on the OCS lands. We have sent legislation to Congress that would give the Minerals Management Service of the Department of the Interior clear authority to lease parts of the OCS for renewable energy. The renewables could be wind, wave, or solar energy, and related projects that are auxiliary to oil and gas development, such as offshore staging facilities and emergency medical facilities. We need this authority in order to be able to **truly give the private sector what are the rules to play from and buy**, so they can have certainty about where to go.

#### Demand for offshore rigs is up – NEWEST EVIDENCE

Pickerell 12/31/12 (Emily, “Demand for offshore rigs up, while onshore count keeps falling”, http://fuelfix.com/blog/2012/12/31/demand-for-offshore-rigs-up-while-onshore-count-keeps-falling/)

While demand for onshore rigs declined as the result of less natural gas drilling, demand for offshore rigs continues to flourish, driven by Gulf of Mexico demand, industry analysts said Monday. The Gulf of Mexico rig count has increased slightly in the last three months, with 33 floating rigs and 29 jackups for the fourth quarter, up from 27 floating rigs and 27 jackups for the third quarter, according to a Tudor Pickering analyst’s note. Likewise, demand for offshore rigs grew from 73 in January 2012 to 80 by the end of November, as improved technology, such as water flooding, has provided new opportunities to extract oil from maturing wells. The relatively strong price of oil, which closed on Friday on the New York Mercantile Exchange at $90.80 for West Texas Intermediate Crude, compared with natural gas, which closed on Friday at $3.46 per million cubic feet, has been an additional driver. Oil and gas services companies are working hard to meet the offshore demand: Ensco, for example, has three ultra-deepwater rigs that will be available in 2013. Demand has dipped in onshore drilling, as the big operators have shifted away from chasing natural gas exploration, resulting in a 61 percent decline for onshore rigs in 2012, down from 2,082 in January to 1,841 at the end of November 2011. The downturn comes after 13 quarters of increased drilling activity, Tudor Pickering said in its report. The Permian and the Eagle Ford basins have been the hardest hit by the decline, according to Tudor Pickering, while East Texas and North Louisiana have held up the best. Companies are also trending **towards the newer and more efficient alternating-current technology for drilling rigs.** Alternating-current engines allow for greater mobility and control over the drilling process, and are considered to be safer and more environmentally friendly. The older mechanical rigs have made up 72 percent of the rig decline, according to Tudor Pickering, who noted that “as activity trended lower during the quarter, we noticed operators clearly holding onto and/or high-grading their fleets.” Chesapeake continues to have the highest U.S. natural gas rig count, with 37 rigs, while Exxon and Devon have 31 and 30, respectively. Likewise, Chesapeake also has by far the biggest number of onshore oil rigs, 73, while Anadarko has 47 and Devon has 42.

#### Contentious fights coming now – costs PC

Cillizza 2-6 (Chris, Political Reporter, “President Obama is Enjoying a Second Political Honeymoon. But How Long Will It Last?” Washington Post, 2013, http://www.washingtonpost.com/blogs/the-fix/wp/2013/02/06/president-obama-is-enjoying-a-second-political-honeymoon-but-how-long-will-it-last/)

Another factor contributing to the truncation of political honeymoons is that in the world of 24-hour cable networks, Twitter and the fracturing of the traditional media, the attention span of the American public is much shorter than it once was — meaning that momentum simply dies away much faster nowadays. Regardless of the reason, it’s clear that Obama has a limited time — six months perhaps? — to take legislative advantage of his second political honeymoon. He seems committed to taking on three separate and distinct fights during that time: 1) gun control 2) immigration reform 3) debt and spending. Each of those legislative scraps will shorten his honeymoon as he expends political capital to try to get what he wants out of a Congress — particularly in the House — that seems likely to be resistant. And, it’s possible — given the glacially slow pace at which Congress works and the aforementioned partisanship that seems to seize any and every issue — that Obama’s honeymoon will fade well before he gets all three of those priorities accomplished. A look back at the trend line on his job approval in his first term is telling in that regard. Even though Obama started off considerably higher in his first term than he began his second term, by August 2009 he had dropped to 54 percent approval in WaPo-ABC polling — thanks to the bailout of the American auto industry, the fight over the economic stimulus package and the earlier positioning over his health-care bill. Considering that Obama is — at best — in the mid-50s in terms of job approval at the moment and the fact that the past showdowns on fiscal issues have revealed the massively different approaches advocated by the two parties, it’s not at all far-fetched to assume that taking on just one of those fights might be enough to end the president’s second term honeymoon. In short: The time is now for Obama to act on his legislative priorities. His political honeymoon will almost certainly be over by the time Congress recesses for its month-long August break this summer.

#### 20 years of shale gas now – that takes out your DA

Berman 12 (Art, Former Editor – Oil and Gas Journal, Geological Consultant – American Association of Petroleum Geologists, “After the Gold Rush: A Perspective on Future U.S. Natural Gas Supply and Price,” Oil Drum, 2-8-12, http://www.theoildrum.com/node/8914)

The Potential Gas Committee (PGC) is the standard for resource assessments because of the objectivity and credentials of its members, and its long and reliable history. In its biennial report released in April 2011, three categories of technically recoverable resources are identified: probable, possible and speculative. The President and many others have taken the PGC total of all three categories (2,170 trillion cubic feet (Tcf) of gas) and divided by 2010 annual consumption of 24 Tcf. This results in 90 and not 100 years of gas. Much of this total resource is in accumulations too small to be produced at any price, is inaccessible to drilling, or is too deep to recover economically. More relevant is the Committee’s probable mean resources value of 550 (Tcf) of gas (Exhibit 4). If half of this supply becomes a reserve (225 Tcf), the U.S. has approximately 11.5 years of potential future gas supply at present consumption rates. When proved reserves of 273 Tcf are included, there is an additional 11.5 years of supply for a total of almost 23 years. It is worth noting that proved reserves include proved undeveloped reserves which may or may not be produced depending on economics, so even 23 years of supply is tenuous. If consumption increases, this supply will be exhausted in less than 23 years. Revisions to this estimate will be made and there probably is more than 23 years but based on current information, 100 years of gas is not justified.

## 2AC

### Advantage CP

#### Multilateralism fails – empirically proven by arctic council

Brigham 10 (Lawson - FP, “Think Again: The Arctic”, 2010, http://www.foreignpolicy.com/articles/2010/08/16/think\_again\_the\_arctic?page=0,4)

It's highly unlikely, however, that the Arctic countries **would ever agree to the same sort of comprehensive treaty for the north.** All have huge economic stakes in the Arctic; some have centuries of sovereign claims to the region, and others still use its waterways for strategic purposes, even 20 years after the Cold War. And that's fine, because we already have a diplomatic framework to deal with most of the Arctic: the U.N. Convention on the Law of the Sea. The treaty allows coastal states everywhere -- not just those in the Arctic -- to extend their seabed claims beyond their sovereign waters, but only after extensive scientific surveys and submissions of geologic data to the New York-based U.N. Commission on the Limits of the Continental Shelf. It is a complex process, but an orderly one. And it isn't new: More than 50 claims have been submitted to the commission over the past decade. The International Maritime Organization, a U.N. agency, can also craft binding rules for shipping in the Arctic Ocean. Then there's the Arctic Council, a 14-year-old intergovernmental forum that brings the eight Arctic states to the table along with six indigenous groups (and other observers) to discuss environmental protection and sustainable development. The council is essentially toothless, at least in a legal sense: It's not bound by any treaties, and members **have chosen not to deal with military and security issues**, or even fisheries management. But it has nonetheless been a force for good, getting everyone in the habit of discussing the future of the region in a diplomatic setting. It has also conducted several pioneering assessments on climate change, oil and gas, and Arctic shipping. Look for it to take a more forceful role as Arctic relations become ever more important. Already, it has a task force negotiating the first legally binding agreement among its members, on search and rescue in the region.

#### Links to politics

Block – 1/22 Ben, *Worldwatch Institute*, “U.S. Leaders Support Law of the Sea Treaty,” http://www.worldwatch.org/node/5993

Newly appointed U.S. leadership is promising to join a longstanding international agreement that oversees ocean resource and pollution disputes. During last week's Cabinet confirmation hearings, leaders in both the U.S. Senate and the administration of newly elected President Barack Obama conveyed support for the treaty, known as the United Nations Law of the Sea Convention, suggesting an end to decades of dispute over U.S. accession. The treaty already has support from a diverse coalition of U.S. interest groups that represent national security, industry, and the environment. **Yet continued opposition from Republican lawmakers may stall ratification, in a test for whether the Obama administration can galvanize support for international environmental agreements, observers said.**

#### CP causes price spikes

Morath 12

[Eric, Wall Street journal, 8/10/12, <http://online.wsj.com/article/SB10000872396390443545504577567102314948314.html>]

However, many helium industry insiders say they are already experiencing instability, largely as a result of government price-setting. Increased demand and limited supplies have resulted in the government's rate—which will rise to $84 per thousand cubic feet in October—essentially setting the global price. But the government sells the gas using a formula designed to guarantee repayment of the debt by 2015, and some are calling for the government to sell at higher, open-market prices, a move that also would provide additional revenue for the government.

#### CP links to politics and can’t solve

* Decision is controversial
* Their prioritization arg proves the CP links
* Opposition and uncertainty
* Private demand vs federal need

McClatchy, 11 (McClatchy-Tribune News Service, 7/24. “Helium reserve is running out.” http://www.cleveland.com/business/index.ssf/2011/07/helium\_reserve\_is\_running\_out.html)

In the 1990s, a controversy erupted as the reserve accumulated a sizable stockpile of helium when about 10 percent of the amount mined was being sold. Critics said there was more private demand than federal need for helium. Government officials said it was time for private industry to take over the helium business. "Once, our defense and aviation industries had a strong need for helium, and the nation lacked a market to supply it," President Bill Clinton said in 1996 when he signed the bill to sell the helium. "Today, over 90 percent of U.S. helium needs are met by private producers and suppliers. "A government-operated program is no longer needed." Congress developed a plan to sell off all the spare helium by Jan. 1, 2015. As part of that plan, the reserve offers more than 2 billion cubic feet of helium for sale each year. Some years, all of it is sold. Other years, such as when the economy is tighter, some goes unsold. The upshot is that the reserve won't deplete its supply by 2015. Theiss and others say they don't know how the Federal Reserve will work after 2015 because the privatization act calls for the facility to be mostly empty by then. "It appears (**Congress) believed this would be a nice, clean process** -- sell it all and go away, like a fire sale. **It wasn't that neat**," she said. "We don't know if they want us to keep producing. ... We don't know what we are supposed to do. "Congress has to decide what to do," she said. "We know we're not the biggest fish for (Congress) to fry right now, with the debt ceiling and everything else they are dealing with. But we would like to know what will happen." Government officials say an undetermined amount of helium is available through private industry and is being processed in southwest Wyoming and in overseas sites including Australia, the Middle East and Russia. The U.S. could eventually depend on those areas for helium, which has drawn criticism. "Selling off the helium reserve ... has adversely affected critical users of helium and is not in the best interest of U.S. taxpayers or the country," said a study last year by Richardson and Chip Groat, a University of Texas at Austin professor in the energy and earth resources department.

#### Icebreakers are key to resupply the Thule Air base

O’Rourke 12 (Ronald, Specialist in Naval Affairs, Congressional Research Service, "Coast Guard Polar Icebreaker Modernization: Background and Issues for Congress," http://www.fas.org/sgp/crs/weapons/RL34391.pdf)

- Pacer goose= Resupply mission

Existing capability and capacity gaps **are expected to significantly impact future Coast Guard performance** in two Antarctic mission areas: Defense Readiness and Ice Operations. Future gaps may involve an inability to carry out probable and easily projected mission requirements, such as the McMurdo resupply, or readiness to respond to less-predictable events. By their nature, contingencies requiring the use of military capabilities often occur quickly. As is the case in the Arctic, the deterioration of the Coast Guard’s **icebreaker fleet is the primary driver for this significant mission impact**. This will further widen mission performance gaps in the coming years. The recently issued Naval Operations Concept 2010 requires a surface presence in both the Arctic and Antarctic. This further exacerbates the capability gap left by the deterioration of the icebreaker fleet.... The significant deterioration of the Coast Guard icebreaker fleet and the emerging mission demands to meet future functional requirements in the high latitude regions dictate that the Coast Guard acquire material solutions to close the capability gaps.... To meet the Coast Guard mission functional requirement, the Coast Guard icebreaking fleet must be capable of supporting the following missions: • Arctic North Patrol. Continuous multimission icebreaker presence in the Arctic. • Arctic West Science. Spring and summer science support in the Arctic. • Antarctic, McMurdo Station resupply. Planned deployment for break-in, supply ship escort, and science support. This mission, conducted in the Antarctic summer, also requires standby icebreaker support for backup in the event the primary vessel cannot complete the mission. • Thule Air Base Resupply and Polar Region Freedom of Navigation Transits. Provide vessel escort operations in support of the Military Sealift Command’s Operation Pacer Goose; then complete any Freedom of Navigation exercises in the region.

#### Thule early warning systems are key to missile warning and defense

OUSD 12 (Office of the Under-Secretary of Defense, May 2011, "Department of Defense Report to Congress on Arctic Operations and the Northwest Passage", http://www.defense.gov/pubs/pdfs/Tab\_A\_Arctic\_Report\_Public.pdf)

U.S. Air Force. U.S. Air Force capabilities in the Arctic are primarily located in the Alaska region with bases near Anderson, Alaska, and in Thule, Greenland. Capabilities at Thule Air Base include the Ballistic Missile Early Warning System (BMEWS), which is a multi-mission radar providing missile warning, missile defense, and space situational awareness. Additionally, Thule hosts an Air Force Satellite Control Network facility that provides the capability to control numerous U.S. satellites. Thule AB **has a robust basing support infrastructure** that includes the world's northernmost deep-water port, a 10,000-foot runway with radar approach control, and a 20-million gallon fuel farm. Clear Air Force Station, located near Anderson, Alaska, provides the Western U.S. counterpart to Thule Air Base. Capabilities at Clear include a BMEWS similar to the one at Thule. Clear Air Force Station will undergo a three-year upgrade to add the missile defense mission starting in early 2012.

#### BMD failure leads to extinction

Lambakis, 7 (Sr. Analyst-National Institute for Public Policy & Editor-Comparative Strategy, PhD-Catholic University, Missile Defense From Space, 2/1, http://www.hoover.org/publications/policy-review/article/6124

The ballistic missile threat to the United States, its deployed forces, and allies and friends has been well defined.6 This is a threat we downplay at our peril. Nations such as North Korea and Iran — which also have significant programs to develop nuclear, biological, and chemical weapons — as well as nonstate groups can pose significant, even catastrophic, dangers to the U.S. homeland, our troops, and our allies. Russia and China, two militarily powerful nations in transition, have **advanced ballistic missile modernization** and countermeasure programs. Indeed, despite the reality that trade relations with China continue to expand, its rapid military modernization represents a potentially serious threat. Whether these nations become deadly adversaries hinges on nothing more than a political change of heart in their respective capitals. The intelligence community’s ability to provide timely and accurate estimates of ballistic missile threats is, by many measures, poor. Our leaders have been consistently surprised by foreign ballistic missile developments. Shortened development timelines and the ability to move or import operational missiles, buy components, and hire missile experts from abroad mean the United States may have little or no warning before it is threatened or attacked. There is no escaping the uncertainty we face. And the stakes couldn’t be higher. A ballistic missile delivering a nuclear payload to an American city would be truly devastating. For comparison, the Insurance Information Institute estimates total economic loss so far from Hurricane Katrina at more than $100 billion. By some calculations, it is going to take New Orleans 25 years to recover fully, and the cost of rebuilding the city is predicted to be as high as $200 billion. The direct cost to the New York City economy following the September 11, 2001, terrorist attacks was between $80 billion and $100 billion. These figures do not include indirect costs or the incalculable human losses. Now just imagine the costs imposed by a ballistic missile nuclear strike against a U.S. city. The economic toll from a single nuclear attack against a major city, which would involve extensive decontamination activities and impact the national economy, could rise above $4 trillion.7 The economy could also be devastated by the electromagnetic pulse generated by a high-altitude nuclear explosion. The resulting electromagnetic shock would fry transformers within regional electrical power grids.8 The interdependent telecommunications (including computers), transportation, and banking and financial infrastructures that people and businesses rely on would be significantly damaged. Such an event would leave us, in some cases, with nineteenth-century technologies. **This situation could jeopardize the very viability of society and the survival of the nation.**

#### Icebreakers are critical to maintain access to the Polar Regions. Specifically, Antarctic science stations close – collapsing science

Falkner 11 (Dr. Kelly, Deputy Director The National Science Foundation Office of Polar Programs, PhD Chemical Oceanography, College of Oceanic and Atmospheric Sciences, Oregon State University, 12/1/11, written testimony, http://transportation.house.gov/hearings/Testimony.aspx?TID=6905)

Chairman LoBiondo, Ranking Member Larsen and distinguished members of the Subcommittee, I am pleased to appear before the Subcommittee to speak in my capacity as Deputy Director of the Office of Polar Programs. Let me first note for context that the Director of the National Science Foundation (NSF) is privileged to chair the Interagency Arctic Research Policy Committee under the President's National Science and Technology Council that coordinates key research activities in the Arctic. We appreciate this opportunity to discuss how the Foundation is meeting its icebreaking needs for research in the Arctic as well as for research and operations in Antarctic waters that NSF coordinates on behalf of the U.S. government. As NSF executes its mission to promote the progress of science, it must continuously **anticipate logistical requirements** that enable frontier science and engineering research. With respect to advancing the scientific frontiers to understand our planet, NSF **bears a critical responsibility for providing scientists with access** to the oceans, which not only dominate the surface area of the earth and but are vital to life as we know it. I focus today on the polar oceans. While they comprise only about ten percent of global ocean area, the polar seas exert a disproportionate influence on our climate and global carbon cycling. Scientists have documented recent changes in the polar oceans that have significant global implications and demand more research and analysis to understand. The science community accordingly places a premium on improving knowledge of the polar oceans--the Arctic and Southern oceans--in order to better project future climate, the rate of sea level rise and the fate of important marine ecosystems upon which we depend for food and biodiversity. I will first outline the important needs of the U.S. research community for polar ocean access from NSF's perspective as the predominant source of funding for fundamental research in these regions. I will then offer some brief comments on Section 307 of HR 2838, the authorization bill for U.S. Coast Guard appropriations for FY 2012 through 2015. I will conclude my testimony by highlighting some of the globally relevant research areas for which the U.S. polar marine research community requires icebreaker capabilities. As an indication of the strong international interest in research on the polar oceans I point out that a substantial number of countries--Australia, Canada, China, Germany, Korea, Japan, Norway, Russia and South Africa--have, through their own research enterprises, recently constructed or are in the process of bringing into being new ice-capable research ships. Absent the U.S. polar class icebreakers, only Russia currently has the heavy icebreaker capability needed to access the Arctic Ocean in winter; only Russia and Sweden currently have the proven capability to provide resupply access for two of our nation's three year-round research stations on the Antarctic continent. Heightened international interest in polar regions is driven in part by changes underway in the Arctic; increased human activity in the Arctic has important implications for the environment, commerce and security that you have heard about in testimony today. Underpinning an appropriate national response to these changes is an urgent need for coordinated and enhanced research efforts. NSF has been a strong supporter and partner in the ongoing interagency process of coordinating Arctic Region policy. It is of course important for NSF to coordinate and leverage its Arctic research program investments in this regard. NSF is providing funding for an important new ship, the SIKULIAQ, which will begin supporting scientific research in 2014. As a light-duty icebreaker, SIKULIAQ is designed for open water and is able to operate in ice up to about three-feet-thick. It will be extremely important for studying ecosystems in the Gulf of Alaska and southern Bering Sea, and in summer as far north as the Chukchi Sea, some of which, in addition to being scientifically interesting, are among the most productive fisheries in the world. Through Memoranda of Agreement with the U.S. Coast Guard, NSF has made use of Coast Guard icebreakers to meet NSF's needs. The only U.S.-owned research icebreaker currently capable of operating in the Arctic and Southern oceans is the 12-year-old medium-duty USCG Cutter HEALY, **which was designed some 20 years ago**. HEALY can operate routinely in ice up to 4.5 feet continuously at 3 knots and 8 feet back-and-ram. HEALY has been and will continue to be a primary support research icebreaker for NSF-supported researchers in the years to come, working alone and also in company with other nation's research icebreakers; by working together the ships effectively expand each other's capability to provide access for research in multi-year ice. While focused on science support, HEALY is a commissioned military vessel, capable of executing all Coast Guard missions. HEALY has not been deployed to the Southern ocean in support of marine research; however, HEALY has supported POLAR SEA on logistic resupply of McMurdo. NSF-supported researchers in that ocean rely on two leased vessels, the NATHANIEL B. PALMER and the LAWRENCE M. GOULD, both owned by Edison Chouest Offshore. Both of these ships were designed and built to the specifications of the U.S. science community nearly 20 years ago. The NATHANIEL B. PALMER's capability in ice is somewhat greater than that of SIKULIAQ while the LAWRENCE M. GOULD is designed to operate in the more benign one-foot ice regimes typical of the Antarctic Peninsula. Thus, U.S. research ships cannot provide access to some of the more scientifically important portions of the Southern Ocean, particularly those within the sea ice pack and extending up to the ice sheet edge around the perimeter of Antarctica. We were able to provide access to our research community for several years (2007-2010) through a partnership with Sweden that supported joint research expeditions aboard the Swedish icebreaker ODEN. However, this year Sweden concluded that it needed ODEN at home to support marine transportation in northern ice-covered waters. As a result, the U.S. no longer has access to that capability. Our only domestic alternative to ODEN would require the Coast Guard to re-deploy HEALY from current operations in the Arctic, where it is in heavy demand by researchers. Because HEALY can only offer 185 at-sea science days annually under its current arrangements, any attempt to use HEALY in the Southern Ocean would severely impact our ability to support U.S. scientists working in the Arctic Ocean. My Coast Guard colleagues can speak better than I to the impact that deployment of HEALY to the south would have on their missions. Ice-strengthened research platforms such as the HEALY are essential to keep the U.S. at the forefront of polar research. But I should also emphasize another aspect of NSF's reliance on icebreakers. As articulated in Presidential Memorandum 6646 and reaffirmed in a series of Presidential Decision Directives over the years, U.S. Policy calls for year-round U.S. presence at three research stations in Antarctica, including one at the geographic South Pole. The Memorandum assigns NSF the responsibility for managing the U.S. Antarctic Program, including support for those stations. These stations support forefront research while simultaneously maintaining a presence deemed **essential to U.S. geopolitical and diplomatic interests** on this continent. In particular, maintaining an active and influential scientific presence in Antarctica enables the U.S. to assume a leading role § Marked 08:46 § in governance of the continent under the Antarctic Treaty. For many years, the U.S. Coast Guard provided the icebreakers to open a seasonal channel in the ice to McMurdo Station for a tanker and a cargo vessel to bring fuel and supplies to McMurdo Station. Without heavy icebreaker support, both McMurdo and South Pole Station **would have to close for lack of supplies**. When the Coast Guard's heavy icebreakers--the POLAR STAR and POLAR SEA--approached the end of their design lifetimes without funding for maintenance and renovations, NSF began contracting for icebreaker support from other countries, first in 2005 with Russia (KRASIN as a back up to POLAR STAR at USCG suggestion), then in 2006 (again KRASIN with POLAR STAR as back up), then with Sweden (with ODEN as back up to POLAR SEA in 2007 and then ODEN alone in 2008-2011 but with POLAR SEA on standby in 2008-2010), and now once again with a Russian company. Our current contract with the Murmansk Shipping Company will continue for three years. As you might imagine Mr. Chairman, NSF would prefer to rely on U.S. assets and we will continue to work with our sister agencies to develop a robust, long-term solution. It is for that reason that NSF was disappointed to learn that the House-passed HR 2838 Coast Guard and Maritime Transportation Act of 2011 called for the decommissioning of POLAR STAR within three years. We had been hoping that the POLAR STAR would be available to provide U.S. sourced icebreaking services once the ongoing renovations to POLAR STAR are completed. Earlier congressional action to provide funding for that renovation gave us hope that the POLAR STAR would be available for use by the U.S. Antarctic program for 7-10 years. NSF will continue to work with the Coast Guard and other ocean science agencies to **develop a longer-term solution to the nation's icebreaking needs..**

#### Antarctic science is key to global science diplomacy

Collins 11 (Terry, associate editor of Green Chemistry, professor at Auckland University, “Founded on science, world cooperation in Antarctica a model for meeting climate, other challenges”, 6/16/11,

http://www.eurekalert.org/pub\_releases/2011-06/cfgs-fos061011.php)

The success of world co-operation based on science and practiced since the Cold War by nations operating in Antarctica **offers a model to humanity** as it confronts challenges to common interests like climate change, biodiversity loss and overfishing, says the editor of a new book on science diplomacy. Since the end of the Second World War science has become an important tool of diplomacy, not only for issues involving environmental management, but for peace in the world we live in, says Paul Berkman, former Head of the Arctic Ocean Geopolitics Programme, Scott Polar Research Institute, University of Cambridge, UK, and Research Professor at the Bren School of Environmental Science & Management at the University of California Santa Barbara. Says Dr. Berkman, keynote speaker at an international conference on Antarctica being held in Malaysia: "For half a century, it has become increasingly obvious that we face planetary-scale phenomena that cannot be solved by any one nation or region, nor solved quickly. Today and forever after, national and international interests need to find the type of balance practiced today under the Antarctic Treaty." "I believe that the view expressed by some US lawmakers at the time of its creation is as true today as then: the Antarctic Treaty will be seen one day as the Magna Carta of peaceful, cooperative international diplomacy." Negotiated amid deep military distrust between the USA and former USSR in the 1950s, the Antarctic Treaty designates the vast polar area – 10% of Earth's surface – as a place for peaceful, scientific purposes exclusively. It bans the testing or storage of nuclear weapons on the continent, constituting the world's first nuclear arms treaty with rigorous inspection provisions included to ensure transparency. The Treaty includes just 14 provisions and the 12 original signatory nations have since grown in number to 47. Malaysia is in its final phase of national preparations to accede to the Antarctic Treaty this year. In a new book published by the Smithsonian Institution, Science Diplomacy: Antarctica, Science and the Governance of International Spaces, Dr. Berkman writes: "The two world wars of the 20th Century underscored animosity on a global scale. In contrast, reflecting unparalleled international cooperation, institutions have evolved since 1945 to prevent or resolve disputes transcending national boundaries. Most of these institutions relate to issues that cross national boundaries. However, there is a suite of institutions that has emerged to manage regions beyond the reach of national jurisdiction in the high seas (1958), Antarctica (1959), outer space (1967), and the deep sea (1971)." The origin, development and success of the Antarctic Treaty offers hope and inspiration applicable to the challenges of climate change, biodiversity loss, overfishing and a host of similarly vexing environmental problems, he writes. "Any lessons we are able to glean from the Antarctic experience will be relevant not only to those interested in traditional international spaces but also to those in search of effective approaches to governing an expanding range of issues (e.g., climate change)…that are destined to become even more important in the future." "Perhaps the broadest legacy of the first 50 years of the (Antarctic Treaty) is the development of a suite of practices that are useful in any effort to ensure that interactions between science and policy produce positive results for both communities in addressing a wide range of large-scale issues for the benefit of humankind and the world we inhabit." "The parts of the planet that fall under national jurisdiction constitute just 30% of the world," says Dr. Berkman. "We're still in infancy in terms of how to work as a civilization. The extent of humanity's common interests and inter-connectedness has only become truly apparent in the second part of the 20th Century." The fundamental role of science in international governance as exemplified in the Antarctic Treaty includes such responsibilities as monitoring and assessing change over time and space, the discovery of new beneficial health and other products derived from biological resources, and prioritizing and framing issues for consideration. "Most political decision making involves short term perspective when the problems involve results likely to take place decades or even centuries in the future," says Zakri Abdul Hamid, Science Advisor to Prime Minister of Malaysia, Chair of the International Advisory Panel of the Centre for Global Sustainability Studies at Universiti Sains Malaysia, and a member of the International Advisory Board created to mark the Antarctic Treaty's 50th anniversary in 2009. "Science is free of such time-bound blinders and therefore is fundamental to environment-related diplomacy at a global scale," says Dr. Zakri, who co-chairs as well the Malaysian Industry-Government Group for High Technology (MIGHT). "The world is changing always. Science provides the common language, culture and foundation for nations and people to work together in decision-making on shared global interests."

#### Science diplomacy solves every impact – extinction

Fedoroff 8 (Nina, - Science and Technology Adviser to the Secretary of State and the Administrator of USAID Testimony Before the House Science Subcommittee on Research and Science Education, 4/2, <http://www.state.gov/g/oes/rls/rm/102996.htm>)

Science by **its nature facilitates diplomacy because it strengthens political relationships**, embodies powerful ideals, and creates opportunities for all. The global scientific community embraces principles Americans cherish: transparency, meritocracy, accountability, the objective evaluation of evidence, and broad and frequently democratic participation. Science is inherently democratic, respecting evidence and truth above all.Science is also a common global language, able to bridge deep political and religious divides. Scientists share a common language. Scientific interactions serve to keep open lines of communication and cultural understanding. As scientists everywhere have a common evidentiary external reference system, members of ideologically divergent societies can use the common language of science to cooperatively address both domestic and the increasingly trans-national and global problems confronting humanity in the 21st century. There is a growing recognition that science and technology will increasingly drive the successful economies of the 21st century. Science and technology provide an immeasurable benefit to the U.S. by bringing scientists and students here, especially from developing countries, where they see democracy in action, make friends in the international scientific community, become familiar with American technology, and contribute to the U.S. and global economy. For example, in 2005, over 50% of physical science and engineering graduate students and postdoctoral researchers trained in the U.S. have been foreign nationals. Moreover, many foreign-born scientists who were educated and have worked in the U.S. eventually progress in their careers to hold influential positions in ministries and institutions both in this country and in their home countries. They also contribute to U.S. scientific and technologic development: According to the National Science Board’s 2008 Science and Engineering Indicators, 47% of full-time doctoral science and engineering faculty in U.S. research institutions were foreign-born. Finally, some types of science – particularly those that address the grand challenges in science and technology – are inherently international in scope and collaborative by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to earth. ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world – Japan, Korea, China, E.U., India, Russia, and United States – representing 70% of the world’s current population.. The recent elimination of funding for FY08 U.S. contributions to the ITER project comes at an inopportune time as the Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project had entered into force only on October 2007. The elimination of the promised U.S. contribution drew our allies to question our commitment and credibility in international cooperative ventures. More problematically, it jeopardizes a platform for reaffirming U.S. relations with key states. It should be noted that even at the height of the cold war, the United States used science diplomacy as a means to maintain communications and avoid misunderstanding between the world’s two nuclear powers – the Soviet Union and the United States. In a complex multi-polar world, relations are more challenging, the threats perhaps greater, and the need for engagement more paramount. Using Science Diplomacy to Achieve National Security Objectives The welfare and stability of countries and regions in many parts of the globe require a concerted effort by the developed world to address the causal factors that render countries fragile and cause states to fail. Countries that are unable to defend their people against starvation, or fail to provide economic opportunity, are susceptible to extremist ideologies, autocratic rule, and abuses of human rights. As well, the world faces common threats, among them climate change, energy and water shortages, public health emergencies, environmental degradation, poverty, food insecurity, and religious extremism. These threats can undermine the national security of the United States, both directly and indirectly. Many are blind to political boundaries, becoming regional or global threats. The United States has no monopoly on knowledge in a globalizing world and the scientific challenges facing humankind are enormous. Addressing these common challenges demands common solutions and necessitates scientific cooperation, common standards, and common goals. We must increasingly harness the power of American ingenuity in science and technology through strong partnerships with the science community in both academia and the private sector, in the U.S. and abroad among our allies, to advance U.S. interests in foreign policy.  § Marked 08:45 § There are also important challenges to the ability of states to supply their populations with sufficient food. The still-growing human population, rising affluence in emerging economies, and other factors have combined to create unprecedented pressures on global prices of staples such as edible oils and grains. Encouraging and promoting the use of contemporary molecular techniques in crop improvement is an essential goal for US science diplomacy. An essential part of the war on terrorism is a war of ideas. The creation of economic opportunity can do much more to combat the rise of fanaticism than can any weapon. The war of ideas is a war about rationalism as opposed to irrationalism. Science and technology put us firmly on the side of rationalism by providing ideas and opportunities that improve people’s lives. We may use the recognition and the goodwill that science still generates for the United States to achieve our diplomatic and developmental goals. Additionally, the Department continues to use science as a means to reduce the proliferation of the weapons’ of mass destruction and prevent what has been dubbed ‘brain drain’. Through cooperative threat reduction activities, former weapons scientists redirect their skills to participate in peaceful, collaborative international research in a large variety of scientific fields. In addition, new global efforts focus on improving biological, chemical, and nuclear security by promoting and implementing best scientific practices as a means to enhance security, increase global partnerships, and create sustainability.

### Fem K – 2AC

#### Alternative fails – critical theory has no mechanism to translate theory into practice

**Jones 99** (Richard Wyn, Lecturer in the Department of International Politics – University of Wales, Security, Strategy, and Critical Theory, CIAO, http://www.ciaonet.org/book/wynjones/wynjones06.html)

Because emancipatory political practice is central to the claims of critical theory, one might expect that proponents of a critical approach to the study of international relations would be reflexive about the relationship between theory and practice. Yet their thinking on this issue thus far does not seem to have progressed much beyond **grandiose statements of intent**. There have been no systematic considerations of how critical international theory can help generate, support, or sustain emancipatory politics beyond the seminar room or conference hotel. Robert Cox, for example, has described the task of critical theorists as providing “a guide to strategic action for bringing about an alternative order” (R. Cox 1981: 130). Although he has also gone on to identify possible agents for change and has outlined the nature and structure of some feasible alternative orders, he has not explicitly indicated whom he regards as the addressee of critical theory (i.e., who is being guided) and thus how the theory can hope to become a part of the political process (see R. Cox 1981, 1983, 1996). Similarly, Andrew Linklater has argued that “a critical theory of international relations must regard the practical project of extending community beyond the nation–state as its most important problem” (Linklater 1990b: 171). However, he has little to say about the role of theory in the realization of this “practical project.” Indeed, his main point is to suggest that the role of critical theory “is not to offer instructions on how to act but to reveal the existence of unrealised possibilities” (Linklater 1990b: 172). But the question still remains, reveal to whom? Is the audience enlightened politicians? Particular social classes? Particular social movements? Or particular (and presumably particularized) communities? In light of Linklater’s primary concern with emancipation, one might expect more guidance as to whom he believes might do the emancipating and how critical theory can impinge upon the emancipatory process. There is, likewise, little enlightenment to be gleaned from Mark Hoffman’s otherwise important contribution. He argues that critical international theory seeks not simply to reproduce society via description, but to understand society and change it. It is both descriptive and constructive in its theoretical intent: it is both an intellectual and a social act. It is not merely an expression of the concrete realities of the historical situation, but also a force for change within those conditions. (M. Hoffman 1987: 233) Despite this very ambitious declaration, once again, Hoffman gives no suggestion as to how this “force for change” should be operationalized and what concrete role critical theorizing might play in changing society. Thus, although the critical international theorists’ critique of the role that more conventional approaches to the study of world politics play in reproducing the contemporary world order may be persuasive, their account of the relationship between their own work and emancipatory political practice is unconvincing. Given the centrality of practice to the claims of critical theory, this is a very significant weakness. Without some plausible account of the **mechanisms** by which they hope to aid in the achievement of their emancipatory goals, proponents of critical international theory are hardly in a position to justify the assertion that “it represents the next stage in the development of International Relations theory” (M. Hoffman 1987: 244). Indeed, without a more convincing conceptualization of the theory–practice nexus, one can argue that critical international theory, by its own terms, has no way of redeeming some of its central epistemological and methodological claims and thus that it is a **fatally flawed** enterprise.

#### Gender IR not root cause

Martin 90

Brian Martin. 1990. (Professor of Social Sciences in the [School of Social Sciences, Media and Communication](http://www.uow.edu.au/arts/ssmac/index.html) at the University of Wollongong. “Uprooting War.” http://www.uow.edu.au/arts/sts/bmartin/pubs/90uw/uw10.html)

While these connections between war and male domination are suggestive, they do not amount to a clearly defined link between the two. It is too simplistic to say that male violence against women leads directly to organised mass warfare. Many soldiers kill in combat but are tender with their families; many male doctors are dedicated professionally to relieving suffering but batter their wives. The problem of war cannot be reduced to the problem of individual violence. Rather, social relations are structured to promote particular kinds of violence in particular circumstances. While there are some important connections between individual male violence and collective violence in war (rape in war is a notable one), these connections are more symptoms than causes of the relationship between patriarchy and other war-linked structures

#### No floating piks – their independently a voter b/c they steal all aff ground – aff is structurally behind – all the reasons their K are good are not reasons it comes before the aff

#### -- Alt fails – reverses the error and can’t build transformational theory

Caprioli 4 (Mary, Professor of Political Science – University of Tennessee, “Feminist IR Theory and Quantitative Methodology: A Critical Analysis”, International Studies Review, 42(1), March, http://www.blackwell-synergy.com/links/doi/10.1111/0020-8833.00076)

If researchers cannot add gender to an analysis, then they must necessarily use a purely female-centered analysis, even though the utility of using a purely female centered analysis seems equally biased. Such research would merely be gendercentric based on women rather than men, and it would thereby provide an equally biased account of international relations as those that are male-centric. Although one might speculate that having research done from the two opposing worldviews might more fully explain international relations, surely an integrated approach would offer a more comprehensive analysis of world affairs. Beyond a female-centric analysis, some scholars (for example, Carver 2002) argue that feminist research must offer a critique of gender as a set of power relations. Gender categories, however, do exist and have very real implications for individuals, social relations, and international affairs. Critiquing the social construction of gender is important, but it fails to provide new theories of international relations or to address the implications of gender for what happens in the world.

#### Alt causes right to fill in – turns the K

Olav. F. **Knudsen**, Prof @ Södertörn Univ College, **‘1** [*Security Dialogue* 32.3, “Post-Copenhagen Security Studies: Desecuritizing Securitization,” p. 366]

A final danger in focusing on the state is that of building the illusion that states have impenetrable walls, that they have an inside and an outside, and that nothing ever passes through. Wolfers’s billiard balls have contributed to this misconception. But the state concepts we should use **are in no need of** such an illusion. Whoever criticizes the field for such sins in the past needs to **go back to the literature**. Of course, we must continue to be open to a frank and unbiased assessment of the transnational politics which significantly in- fluence almost every issue on the domestic political agenda. The first decade of my own research was spent studying these phenomena – and I disavow none of my conclusions about the state’s limitations. Yet I am not ashamed to talk of a domestic political agenda. Anyone with a little knowledge of Euro- pean politics knows that Danish politics is not Swedish politics is not German politics is not British politics. Nor would I hesitate for a moment to talk of the role of the state in transnational politics, where it is an important actor, though only one among many other competing ones. In the world of transnational relations, the exploitation of states by interest groups – by their assumption of roles as representatives of states or by convincing state representatives to argue their case and defend their narrow interests – is a significant class of phenomena, today as much as yesterday. Towards a Renewal of the Empirical Foundation for Security Studies Fundamentally, the sum of the foregoing list of sins blamed on the Copen- hagen school amounts to a lack of attention paid to just that ‘reality’ of security which Ole Wæver consciously chose to leave aside a decade ago in order to pursue the politics of securitization instead. I cannot claim that he is void of interest in the empirical aspects of security because much of the 1997 book is devoted to empirical concerns. However, the attention to agenda-setting – confirmed in his most recent work – draws attention away from the important issues we need to work on more closely if we want to contribute to a better understanding of European **security as it is** currently developing**.** That inevitably requires a more **consistent** interest in security policy in the making – not just in the development of alternative security policies. The dan- ger here is that, as alternative policies are likely to fail grandly on the political arena, crucial decisions may be made in the ‘**traditional’ sector of security** policymaking, **unheeded by any but the most uncritical minds.**

### Arctic Link Turn – 2AC

#### only a deterrent force prevents conflict and escalation

Backus 12 - Principal member of technical staff at Sandia National Laboratories and uses behavioral and physical simulation methods to access security risks associated with climate change [George Backus (Director of environmental and energy research at Cambridge Econometrics), “Arctic 2030: What are the consequences of climate change? The US response,” Bulletin of the Atomic Scientists July/August 2012 vol. 68 no. 4 9-16

Because no entity, other than perhaps the Russian government, has the military bases and means to accommodate area-wide protection and enforcement needs, the United States will necessarily have to maintain strong cooperative arrangements with nations and corporations for the coordinated, safe, and secure use of Arctic resources. Although the Arctic nations themselves may strive for cooperation, entanglement with corporations and other foreign entities will assuredly produce tensions that are outside the domain of the US Coast Guard. Right now, the US military position in the Arctic is problematic. Both the Northern Command and the European Command have responsibility for what, in a cooperative multinational environment, is a single area (Carafano et al., 2011; Carmen et al., 2010). Some analysts argue that NATO should play the coordinating role in the Arctic (Conley, 2012), but such a path would create new tensions among the national players, and it does not resolve the specific position of the United States in the Arctic (Wezeman, 2012). The United States asserts that it has power projection and strategic deterrence capabilities in the Arctic because of its submarine, missile, and airborne assets (Defense Department, 2011). But security events in the Arctic may be largely associated with expensive commercial assets populated by civilians and monitored or escorted by foreign government representatives. Fighter jets and torpedoes have no role to play in such confrontations. A naval presence is required, with personnel who can board and secure the facility, as necessary. In general, the US Defense Department lacks the naval resources to maintain sea control for these situations. If non-Arctic countries set a precedent—even simply through prospecting surveys or shipping activity—their case for limiting the unresolved sovereignty rights of the Arctic nations is strengthened. Corporations necessarily engage in such activities, and it is natural for commercial ventures to test the boundaries of their franchises. But in a more negative sense, there is also the fear that access to a relatively unmonitored Arctic may offer an alternative location for companies to dispose of toxic waste. In assessing US security needs in the Arctic, the question to ask is not “What are the security risks when the Arctic opens?” but rather “How will security risks evolve as the geopolitical and economic expansion play out?” The physical speed with which the Arctic changes will determine the gap between reality and expectations. For example, the more Russia, China, or South Korea experience significant benefit from Arctic activities—to the point where they expect and depend on the growth from those activities—the more likely that a period where the Arctic again becomes environmentally inhospitable, or that the rules of sovereignty change to limit access, or that commercialization of the region will cause political strains from lost revenue or prestige. Abrupt changes in expectations and in a nation’s ability to cope with changing circumstances appear to be factors that can trigger conflict (Agency for International Development, 2009). If the early international relations dynamics in the Arctic move fairly slowly, all parties could co-evolve toward balanced positions with relatively little conflict. Rapid dynamics could raise tensions. If all nations sustain approximately equal positive or negative repercussions from changes in Arctic regulations or climatic conditions, or they all believe they could limit the pace and extent of negative impacts through negotiation, routine diplomatic processes could mollify tensions. Climate change will, however, produce an ever-shifting playing field that heightens tensions among countries more concerned with relative rather than absolute advantage in the area. Will events in the Arctic require US military responses before 2030? The consideration of uncertainty is part of climate and economic forecasting (Hendry and Ericsson, 2001; Meehl et al., 2007), and uncertainty is a mainstay of military planning: The adversary seldom announces battle plans prior to engagement. Military preparedness hinges not on best estimates, but on uncertainties that reflect risks the nation wants managed. From the vantage point of the present, the best estimate is that the Arctic of the near future will be free of military conflict. Risk, however, is the combination of probability (uncertainty) and consequence. Lower-probability, high-consequence events generally contribute more to risk than the best estimate. They are consequently much more relevant to national security planning than high-probability, routine-consequence conditions. **Perceived economic accessibility to the Arctic** and commercial success in the Arctic change the conditional probabilities; **they increase the odds that a sequence of events that leads to conflict will materialize**. It would be foolhardy to disregard the risks that low-probability, high-consequence events imply. An unexpected confluence of vessels and aircraft being in the wrong place, when Arctic weather conditions prevent adequate communications, could lead to tense situations, unless national security forces have the ability to readily manage the situation.

#### Relations collapse inevitable

Kupchan 8/21/12 (Charles, Whitney Shepardson Senior Fellow, 8/21/12, <http://www.cfr.org/russian-fed/russia-joins-wto-amid-continuing-tensions-us/p28858>)

Russia’s accession to the WTO this Wednesday marks the successful end of a long and tortuous road of negotiations. Washington played an important role in paving the way, in the end game helping to remove the final hurdle by pressing Georgia to acquiesce to Russian membership despite the continuing acrimony between Tblisi and Moscow. Russia’s admission to the WTO should thus mark a significant advance in U.S.-Russian relations – a major step forward in the so-called “reset.” But the opposite is true. Relations between Washington and Moscow have been particularly strained of late, with the Obama administration justifiably angry over the Kremlin’s intransigent alignment with a Syrian regime using brute force against its own people. Meanwhile, the U.S. Congress has yet to graduate Russia from Jackson-Vanik restrictions – economic sanctions put in place in the 1970s intended to pressure the Soviet Union to allow emigration of its Jews. Congress is also considering legislation which would link normal trade relations with Russia to the country’s readiness to improve its record on human rights. The so-called Magnitsky Bill and related proposals envisage the public disclosure of a blacklist of human rights violators and the imposition of a visa ban on such individuals. Sergei Magnitsky was a Russian whistleblower who was imprisoned and then died while under policy custody in 2009. Without Russia’s graduation from Jackson-Vanik, commerce between the U.S. and Russia will not fully benefit from Russia’s accession to the WTO. And the Kremlin has expressed outrage that Congress is linking trade and human rights, claiming that Washington has no right to interfere in Russia’s domestic affairs. Senior Russian officials have threatened to retaliate with their own restrictions on visas for Americans, a move that could impair economic cooperation. Congress’ reluctance to repeal Jackson-Vanik stems in part from partisan wrangling amid the home stretch of the presidential race. Mitt Romney is positioning himself as the foreign policy hardliner in the contest, seeking to portray Obama as insufficiently tough in his conduct of statecraft. Romney is reserving his best rhetoric for the Kremlin, going so far as to declare that Russia is America’s chief foe. Although such claims bear little semblance to reality, the Republicans are ready to pounce if Democrats appear to be too accommodating of the Kremlin. As a result, the effort to move Russia past the Jackson-Vanick era has bogged down on Capitol Hill. Moreover, although Congress is more than justified in criticizing Russia on matters of human rights, there is also a counterproductive Russophobia on Capitol Hill that is best explained as a hangover from the Cold War. It is appears probable that Congress will be finally be ready to graduate Russia from Jackson-Vanik during the lame duck session that follows the November election. But even so, this episode is revealing America’s schizophrenic view of Russia and casting an unfortunate shadow over what should be an auspicious moment in commercial ties between the two countries. For its part, Russia has played right into the hands of American voices arguing that the Kremlin should be kept at arm’s length. The Russian government continues to trample on political freedoms; last week’s conviction of the punk band Pussy Riot is a case in point. The Kremlin’s **repression of political opponents** is not only distasteful, but also unnecessary; Putin’s political machine and personal popularity are more than sufficient to give him a strong hand. Putin’s more **confrontational foreign policy** is also costing him dearly in Washington. Initially, many American observers presumed that his more blustery tone was aimed at shoring up support in preparation for the presidential election. But Putin’s provocations have not abated, especially when it comes to NATO’s plans for **missile defense and**, most importantly, the crisis in **Syria**. Putin was arguably justified in reacting with pique to the NATO operation in Libya on the grounds that it brought about regime change under the cover of a UN mandate intended to protect civilians. But smarting over the Libya mission provides Putin no reason whatsoever to embrace a government in Syria that is mercilessly killing its own citizens. Indeed, the Kremlin seems to have backed itself into a corner, stuck supporting a regime that has lost its legitimacy and decency in the court of world opinion. Russia gains nothing from standing with Assad – and the chilling effect on U.S.-Russian relations will last a long time. Indeed, the Kremlin’s policy toward Syria is raising troubling questions in Washington about Russian intentions and its suitability as a strategic partner. Even in the absence of these tensions in U.S.-Russian relations, the implications of Russia’s accession to the WTO should not be overstated. To be sure, there will be significant economic benefits to Russia and its trading partners. But WTO membership has only modest potential to foster ambitious economic and political reforms or to encourage Russia to more fully embrace Western norms. After all, China has been a WTO member since 2001, but its inclusion has done little to dismantle state capitalism or encourage political reform. Russia takes an important step in the right direction on Wednesday. But when it comes to consolidating rapprochement between Washington and Moscow and more fully anchoring Russia in Western markets and institutions, there is still much hard work to be done.

### Immigration – 2AC

#### Immigration won’t pass, PC isn’t key, other issues thump

Page 2-21 (Susan, “Obama supported on guns, debt; Divided and dissatisfied with both sides, public is less aligned with Republicans,” Lexis)

An immigration divide A 51% majority of Americans say it's essential for the president and Congress to pass a sweeping immigration bill this year, and nearly everybody, nine in 10, say a major bill is needed within the next few years. But to do what? One in four want the bill to focus on better border security -- that's down 10 percentage points from a year ago -- and another one in four want the focus to be on creating a pathway to citizenship for illegal immigrants now in this country. Nearly half of those surveyed, 47%, say both should be equal priorities. There is a predictable partisan divide on the issue: Democrats want a pathway to citizenship while Republicans back stronger security and enforcement of existing immigration laws. That could create problems for Republican leaders, including Florida Sen. Marco Rubio, who are working on bipartisan bills that would include a path to legal status for illegal immigrants as well as border security measures. By a wide margin, 50%-33%, Obama's approach to immigration is preferred over the GOP. For Obama, having higher ratings than congressional Republicans doesn't guarantee passage of any legislation, given the polarization in a divided Congress. But it does put him in a stronger position to bring public pressure on lawmakers. And it complicates Republican efforts to unite a fractured party behind a message that will appeal to voters. "Lots of things need to be passed in Congress, and it seems everything is a filibuster," says Jaime Cortez, 23, of Edinburg, Texas. "I know a lot of strong, far-right Republicans, but I just think they need to ease up and listen to the public's opinion." While most Americans want action on the deficit and immigration this year, Obama faces a more difficult task in pressing two other priorities he's outlined, on gun control and climate change.

#### Gun control thumps – even if Obama doesn’t push

Stirewalt 2-12 (Chris, “Gun Control Will Crowd Out Other Obama Policy Points,” Fox News, 2013, <http://www.foxnews.com/politics/2013/02/12/gun-control-will-crowd-out-other-obama-policy-points/#ixzz2LSmfmUC8>)

How much political capital is President Obama willing to spend to achieve gun control? The choice may not be entirely up to him. Obama tonight will talk about many things in his fourth State of the Union address in an effort to goad his adversaries into action or increase the political penalties for their resistance. He will batter Republicans on their refusal to accept his plan to replace part of automatic cuts to federal spending that begin at the end of the month with a tax hike on top earners. Expect to hear of dire consequences that will befall the nation if spending drops by $120 billion this year: unsafe medicines, hungry children, unsecured nukes, etc. Obama will denounce foes of a rapid amnesty for illegal immigrants and call for additional stimulus spending to “invest” in middle-income jobs. That jobs plea will, as it has invariably become for Obama, be tied to global warming. Obama Democrats see the fight against changes in the earth’s climate as a twofer: it’s environmentalism and a jobs subsidy program. There will be all of those things and more in what promises to be a flurry of policy provisions befitting a re-elected president determined to have a transformative second term. He may not match Bill Clinton’s record for longest-ever (1 hour, 28 minutes and 49 seconds in 2000), but Obama will certainly not be wrapping up quickly. But whatever Obama talks about, it is likely to be overshadowed by his call for a gun ban in response to mass shootings and a steady tide of urban shootings, particularly in his hometown of Chicago. The Constitution instructs the president “from time to time” to update Congress on the state of the union and “recommend to their consideration such measures as he shall judge necessary and expedient. The tradition since 1790 has been for presidents to do this once a year, but the Framers included the line in order to make sure that there was at least some communication between the legislative and executive branches. Presidents since Woodrow Wilson have needed little encouragement to tell Congress what’s on their minds, especially the current chief executive. Obama talks to, about and around Congress constantly. So all that Obama says tonight about immigration, taxes, stimulus and global warming will have been heard and re-heard by the lawmakers Obama is ostensibly there to talk to. The real purpose of States of the Union addresses since Lyndon Johnson moved his speech to primetime from the sleepy midday affairs of his predecessors is to talk to the folks at home and to get the political press to restate your talking points. The speeches are predictable news events that allow for lavish coverage and great pictures – lots of cheering, the big Stars and Stripes, etc. What the president says can be analyzed, re-analyzed and dissected for the evening, and, since Obama will give partial versions of the speech in three campaign stops, for days afterward. But the full laundry list of policies won’t make it through the media wringer. Despite Obama’s claims that Washington can “walk and chew gum at the same time” he surely knows by now that it cannot. In the case of this speech, it seems inevitable that his push on gun control will predominate. It’s an issue that his political base adores, it being an article of faith on the American left that limiting gun sales will reduce gun crime. Add to that the double bias in favor of the issue in the press – dramatic stories for the “if it bleeds it leads” set and a policy that fits overall view in the establishment press that firearms are bad. To that end, the president will use the parents and survivors of the Newtown, Conn. tragedy and other victims of gun violence to personalize his message on gun control. Reports will follow these breadcrumbs and produce the stories that reinforce the president’s message. People getting shot and killed makes for better copy than “sequestration” or “out-year entitlement reform” or “green jobs” or whatever fiscal and economic crisis the government and the nation are currently stumbling through. But the risk here for Obama is that for all of his pivots and policy pounding, the speech may end up being recalled as one about gun control. On each subsequent retelling, the storyline will grow shorter and shorter but guns will never drop from the lead. And given the deep resistance, even among some his own party, to gun control, in political conflict over the subject will never go away.

#### Rubio loves offshore drilling

Johnson 10 (Luke, “Marco Rubio’s consistency on offshore drilling may cost him at the polls”, 6/23, http://floridaindependent.com/2677/marco-rubios-consistency-on-offshore-drilling-may-cost-him-at-the-polls)

Even as tar balls wash up on Florida Panhandle shores from the April 20 oil spill, Republican U.S. Senate candidate Marco Rubio stands consistently behind offshore drilling. “The bottom line is that there is going to be drilling off the coast of Florida. There is right now. Other countries are going to be drilling, Cuba, Venezuela, China, Brazil and Russia. The issue is not whether there is going to be offshore drilling, it’s whether America will benefit from it,” he said in an interview on MSNBC’s Morning Joe — broadcasting from Pensacola instead of New York — on June 11. “I don’t think any of that is premature conversation,” he added towards the end of the interview. On CNBC the same day, Rubio said to host Larry Kudlow, “In the long term, offshore drilling has to be part of our overall energy strategy.” He added, “Other countries are going to do it, and if they have an accident, that’s going to impact [the U.S.] just the same.”

#### **Obama’s backing off – and Rubio is key**

Avlon 1-31 (John, “Immigration Reform Proposal Shows Similar Ideas between Bush and Obama,” Daily Beast, 2013, http://www.thedailybeast.com/articles/2013/01/31/immigration-reform-proposal-shows-similar-ideas-betweeen-bush-and-obama.html)

Wehner’s comments cut to the heart of the lessons learned. After essentially ignoring immigration reform in its first term, the Obama administration is front-loading the ambitious effort and—for the time, at least—deferring to the Gang of Eight in hopes that it might be less polarizing if the president’s name isn’t on the bill when senators from the opposing party try to sell it to their base. What’s old is new. It’s an irony not lost on Bush administration alumni and family members. The death of the Bush bill came largely at the hands of a right-wing talk-radio revolt that attacked any path to citizenship as “amnesty.” The fact that then–presidential candidate John McCain was sponsoring the bill with none other than Ted Kennedy created an opening for competitors like Mitt Romney to try to get to McCain’s right in a play to the primary’s conservative populist cheap seats. But the other hostile front came from resurgent House Democrats who frankly did not want to give the polarizing lame-duck incumbent named Bush a political win. Fast-forward six years, and the right-wing talk-radio crowd is weakened. The evangelical, law-enforcement, and business communities are now united behind comprehensive immigration reform. Responsible Republicans know they cannot afford to alienate Hispanics any longer. And the presence of Florida Sen. Marco Rubio—a onetime Jeb Bush protégé—is an essential addition to the coalition. “Senator Rubio, a Tea Party choice, is well respected and well liked and trusted,” adds Wehner. “With him as the lead in these negotiations, conservatives are more willing to consider immigration reform than in the past. You’re not seeing the explosion of opposition now that we saw in 2007. That doesn’t mean it won’t happen; but for now, it hasn’t.” Long story short: it’s much easier for Marco Rubio to make the case for the Senate’s bipartisan path to citizenship than to argue on behalf of President Obama’s bill, which would be a nonstarter to much of the base. And so the president wisely held off from offering his specific policy vision in the much-hyped Las Vegas speech earlier this week. It’s not unlike the reason Harry Truman gave for naming the postwar European-aid bill after his secretary of state, George Marshall: “Anything that is sent up to the Senate and House with my name on it will quiver a couple of times and then turn over and die.”

#### OCS drilling is key to the economy

Mason 9 (Joseph R. – Louisiana State University Endowed Chair of Banking and nationally-renowned economist , “The Economic Contribution of Increased Offshore Oil Exploration and Production to Regional and National Economies”, February, <http://www.americanenergyalliance.org/images/aea_offshore_updated_final.pdf>)

As above, the analysis estimates both the immediate and the total economic effects associated with increased OCS oil and gas production. Using the investment multipliers (denominated in job-years per $1 million change in final demand) in Table A3 and total investment costs in Table 3, the expected coastal state changes in employment are represented in Table 9.51 The annual increase in coastal state employment from initial investments in previously unavailable OCS planning areas and additional refining capacity is estimated to be 185,320 fulltime jobs per year. Again, this number does not consider the secondary effects of investment in productive capacity and refining to other U.S. states. To estimate the total increase in employment tied to production in previously unavailable OCS Planning Areas, the BEA’s final-demand employment multiplier is applied to the estimated total resource value estimates in Table 4. The total increase in U.S. employment from the investment phase is approximately 271,570 full-time jobs per year. Applying the BEA multipliers to the estimated production value results in the employment estimates in Table 10.52 According to Table 10, approximately 870,000 coastal state jobs would be created in addition to the jobs created during the initial investment phase. Again, the state BEA multipliers do not account for increases in employment outside of the target state. As a result, secondary jobs created in one state based on OCS production in another state are omitted from the totals in Table 10. The total increase in U.S. employment in all states that results from increased OCS production is estimated by applying the overall U.S. employment multiplier (10.4152 job-years per $1 million) to the total value of the additional OCS resources ($3,427,667,487,135), suggesting that approximately 35,700,000 total job-years would be created over the course of production in newly opened OCS Planning Areas. If we again assume a 30 year production horizon, approximately 1,190,000 jobs would be sustained for the entire production period, approximately 340,000 of which are secondary jobs outside the coastal regions.

#### Arctic is a massive win for Obama – assumes their link arguments

Geman 12 (Ben, energy and environment reporter for The Hill, “Senator: Arctic drilling a political win for Obama,” 6-29-12, <http://thehill.com/blogs/e2-wire/e2-wire/235679-senator-arctic-drilling-a-political-win-for-obama>)

The Obama administration’s expected approval of Royal Dutch Shell's plan to drill in Arctic waters off Alaska’s coast this summer is a political plus for President Obama, according to Sen. Mark Begich (D-Alaska), an advocate of the project. “I think what he is showing is — and [Interior Secretary Ken] Salazar and the whole team and what we have been doing with them — is [saying] ‘look, let’s manage it right, let’s manage it carefully, and at the end of the day let’s also constantly review what we are doing,’ ” Begich said in the Capitol Friday. Interior is on the cusp of providing Shell its drilling permits for the long-planned, long-delayed project to drill exploratory wells in the Beaufort and Chukchi seas. The department is [vowing robust safety oversight](http://thehill.com/blogs/e2-wire/e2-wire/232665-overnight-energy-interior-lays-groundwork-to-green-light-shells-arctic-drilling-plan-) — it plans to have inspectors on the rigs around-the-clock — and the permits will follow testing of Shell’s spill containment equipment and other inspections of the company’s infrastructure. But environmentalists oppose the project. They say there’s not sufficient capacity to respond to a potential oil spill in the harsh seas, which are home to polar bears, bowhead and beluga whales and other fragile species. Begich, however, said he did not think the decision will erode Obama’s standing with an environmental base that’s focused on many issues, but will allow Obama to show voters that he’s committed to developing domestic oil resources that displace imports from people that “hate us.” “If anything, I think it gives him something to talk about in the sense of ‘look, we are doing it, we are bringing domestic [resources],” Begich said, citing estimates of very large amounts of oil beneath the Arctic seas.

#### Winners win.

Halloran 10 (Liz, Reporter – NPR, “For Obama, What A Difference A Week Made”, National Public Radio, 4-6, http://www.npr.org/templates/story/story.php?storyId=125594396)

Amazing what a win in a major legislative battle will do for a president's spirit. (Turmoil over spending and leadership at the Republican National Committee over the past week, and the release Tuesday of a major new and largely sympathetic book about the president by New Yorker editor David Remnick, also haven't hurt White House efforts to drive its own, new narrative.) Obama's Story Though the president's national job approval ratings failed to get a boost by the passage of the health care overhaul — his numbers have remained steady this year at just under 50 percent — he has earned grudging respect even from those who don't agree with his policies. "He's achieved something that virtually everyone in Washington thought he couldn't," says Henry Olsen, vice president and director of the business-oriented American Enterprise Institute's National Research Initiative. "And that's given him confidence." The protracted health care battle looks to have taught the White House something about power, says presidential historian Gil Troy — a lesson that will inform Obama's pursuit of his initiatives going forward. "I think that Obama realizes that presidential power is a muscle, and the more you exercise it, the stronger it gets," Troy says. "He exercised that power and had a success with health care passage, and now he wants to make sure people realize it's not just a blip on the map." The White House now has an opportunity, he says, to change the narrative that had been looming — that the Democrats would lose big in the fall midterm elections, and that Obama was looking more like one-term President Jimmy Carter than two-termer Ronald Reagan, who also managed a difficult first-term legislative win and survived his party's bad showing in the midterms. Approval Ratings Obama is exuding confidence since the health care bill passed, but his approval ratings as of April 1 remain unchanged from the beginning of the year, according to [Pollster.com](http://www.pollster.com/polls/us/jobapproval-obama.php). What's more, just as many people disapprove of Obama's health care policy now as did so at the beginning of the year. According to the most recent numbers: Forty-eight percent of all Americans approve of Obama, and 47 disapprove. Fifty-two percent disapprove of Obama's health care policy, compared with 43 percent who approve. Stepping Back From A Precipice Those watching the re-emergent president in recent days say it's difficult to imagine that it was only weeks ago that Obama's domestic agenda had been given last rites, and pundits were preparing their pieces on a failed presidency. Obama himself had framed the health care debate as a referendum on his presidency. A loss would have "ruined the rest of his presidential term," says Darrell West, director of governance studies at the liberal-leaning Brookings Institution. "It would have made it difficult to address other issues and emboldened his critics to claim he was a failed president." The conventional wisdom in Washington after the Democrats lost their supermajority in the U.S. Senate when Republican Scott Brown won the Massachusetts seat long held by the late Sen. Edward Kennedy was that Obama would scale back his health care ambitions to get something passed. "I thought he was going to do what most presidents would have done — take two-thirds of a loaf and declare victory," says the AEI's Olsen. "But he doubled down and made it a vote of confidence on his presidency, parliamentary-style." "You've got to be impressed with an achievement like that," Olsen says. But Olsen is among those who argue that, long-term, Obama and his party would have been better served politically by an incremental approach to reworking the nation's health care system, something that may have been more palatable to independent voters Democrats will need in the fall. "He would have been able to show he was listening more, that he heard their concerns about the size and scope of this," Olsen says. Muscling out a win on a sweeping health care package may have invigorated the president and provided evidence of leadership, but, his critics say, it remains to be seen whether Obama and his party can reverse what the polls now suggest is a losing issue for them.

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#### Putin makes relations collapse inevitable

Traub 7-6 (Fellow of the Center on International Cooperation, columnist for Foreign Policy, “Making Enemies from Friends”, http://www.foreignpolicy.com/articles/2012/07/06/making\_enemies\_from\_friends\_0)

But this brings us to the really interesting question: Is the reset over? Is Russia now in fact becoming a geopolitical foe? And if so, why? One obvious answer is that Putin has now replaced the more moderate and modern Dmitry Medvedev as president. Medvedev sought to be an interlocutor with the West; Putin does not. But that presupposes that it was Medvedev, not Putin, who was guiding Russian policy during the period of the reset; and frankly, no Russia expert -- or Russian citizen -- believes that. As a recent report from the Carnegie Endowment for International Peace puts it, the new era began not with Putin's inauguration this past May, but with the unprecedented demonstrations against his rule starting late last year. The old formula of "authoritarianism with the consent of the governed" no longer held, since "that consent has been partially withdrawn." What has changed, in short, is not Putin's view of the world but his own political predicament.¶ The good news is that Putin remains the same brutally realist calculator of Russian national interest he has long been. The bad news is that the new confrontation at home appears to be making him yet more confrontational toward the rest of the world. As Stephen Sestanovich of the Council on Foreign Relations told me, he has "shifted from the people who benefited most from Putinism" -- the new urban middle class -- "to the people who benefited least, a Nixon 'silent-majority' strategy." And he is feeding that audience a steady diet of nationalism, raging against alleged enemies both in their midst and abroad. This almost certainly accounts for the almost farcically hostile reception he has accorded U.S. Ambassador Michael McFaul, one of the chief architects of the reset. "Standing up" to America and the West has thus become more central to Putin's strategy for political survival. What's more, as Sestanovich points out, the United States, whether under a President Obama or a President Romney, will continue to feel compelled to criticize Putin's domestic repression, which will in turn drive the Russian leader into a fury.¶ So how should Washington deal with this not-quite-rival, not-quite-foe? Obama administration officials I spoke to pointed out that the United States and Russia continue to work together on a wide range of issues and insisted that Putin, like Obama, can operate a "dual-track policy," alternating hostile rhetoric with pragmatic calculations of national interest. But I'm not sure even they believe that. In recent months the Obama administration has notably hardened its own rhetoric, including Clinton's dramatic accusation that Russia was stoking Syria's killing machine by supplying and servicing attack helicopters for the Assad regime. Romney says that the time has come to "reset the reset," but you could argue that the administration has already begun to do just that. The rosy era of "engagement," when Obama believed that he could establish a more benign global environment through gestures of deference to national sensibilities, quotations from the Quran, or inspiring autobiographical references is over. A second Obama term, should it happen, would probably focus more on strengthening bonds with traditional allies -- in Asia, as we have now heard ad nauseam -- and less on trying to convert rivals and adversaries.

#### Putin dooms US-Russia relations

Kuchins 3/1 (Andrew, Senior Fellow and Director of the CSIS Russia and Eurasia Program, " The End of the 'Reset'" 2012, http://www.foreignaffairs.com/articles/137308/andrew-c-kuchins/the-end-of-the-reset, EMM)

But now those propositions look highly dubious. Putin's latest campaign article, "Russia and the Changing World," makes clear that the so-called reset in U.S.-Russia relations is over, and that tough times lie ahead. Addressing his own question -- "Who undermines confidence?" -- Putin pointed at the United States and NATO, but especially at the Americans, who "have become obsessed with the idea of becoming absolutely invulnerable." Some may write off Putin's anti-American tone as campaign rhetoric, but it has become increasingly clear that his brash posture toward Washington reflects what he actually thinks about the United States and its foreign policy. In fact, Putin has long held these views. Today it's as if Putin has dialed the U.S.-Russia relationship back to 2007, when he unleashed his anti-American diatribe at the Wehrkunde security conference in Munich. Then, Putin's anti-Americanism was angry and aggressive; now, as Russian foreign affairs expert Fyodor Lukyanov told a Washington audience this week, "his anti-Americanism is defensive." He sees foreign policy challenges at every turn, especially Europe's debt fiasco and China's rise; these are dilemmas over which he has little control. But domestic political stability is his principal concern, and Putin sees the United States as a threat to his sovereign rule. Anti-Americanism, at least to some extent, has been a staple of Russian political campaign rhetoric since the onset of the Putin era, but never like this. The rapprochement in U.S.-Russia relations had already begun to slow last spring over the Western military intervention in Libya and the breakdown in discussions about missile defense cooperation. Putin announced his return to the presidency on September 24, 2011, and subsequently the tone of Russian statements about differences with Washington on Syria, the Iranian nuclear program, and missile defense plans sharpened. Then came December's parliamentary elections, after which tens of thousands of Russian citizens took to the streets on three occasions. It was as if Russian domestic politics crashed into foreign policy. In response to U.S. Secretary of State Hillary Clinton's criticism of those elections as "flawed," Putin accused her of "sending signals" to support the opposition. When the new U.S. ambassador to Russia, Michael McFaul, arrived in Moscow, he was lambasted on Russian national television for his supposed mission to foment revolution in Russia. Even in the darkest days of the Cold War, no U.S. ambassador ever received such harsh treatment upon arrival. To add insult to injury, the Russian leadership knows very well that McFaul is a highly valued and trusted adviser to Obama; his poor treatment is on some level an affront to the president.

#### US and Russia will keep ties despite disputes

Gvosdev 12 -- former editor of the National Interest, on the faculty of the U.S. Naval War College (Nikolas, 3/9, "The Realist Prism: Relocating U.S.-Russia Ties Beyond Obama, Putin," http://www.worldpoliticsreview.com/articles/11711/the-realist-prism-relocating-u-s-russia-ties-beyond-obama-putin)

Something else that both American and Russian observers have noted is that despite all the heated rhetoric both sides toss around, no one in Washington or Moscow is particularly eager to disrupt the profitable ties that have sprouted up in recent years. This gives hope that the U.S.-Russia relationship is finally starting to acquire the necessary ballast to keep the inevitable disagreements between Moscow and Washington from throwing the entire endeavor off-kilter. The message seems to be that the presidents don’t have to be friends themselves in order for both countries to maintain beneficial relations.