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#### **They should specify a type of financial incentive, they don’t –**

#### **Voting issue –**

#### Ground – each type of incentive and the ground against those incentives – they can spike our links which makes the aff a moving target.

#### Independently – there’s a plan flaw, they didn’t say increase in their plan – means it doesn’t actually increase any funding

#### **Key to solvency and meaningful research**

Vaughn 8 (John R., Chairperson – National Council on Disability, “The State of 21st Century Financial Incentives for Americans with Disabilities,” National Council on Disability, 8-11, http://www.ncd.gov/publications/2008/Aug2008#\_Toc204703675)

1. Financial incentives are complex and need explanations pertaining to definition and type.

There is no simple definition of financial incentives. While some operational definitions might involve disability-based, case, in-kind, or other funding streams as categories of financial incentives, this report uses three overarching categories—direct, indirect, and community based—according to the topology developed for this research. **Efforts to gain an understanding of these variations and to account for as many of them as possible will contribute to making this research meaningful**.

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#### Immigration reform will pass, but capital’s key

NYT 1/31 http://www.nytimes.com/2013/02/01/us/politics/senators-look-at-07-failure-for-lessons-on-immigration.html?\_r=0

As eight senators in a bipartisan group look ahead to a broad immigration overhaul, they are also looking back to 2006 and 2007 — the last time a major immigration measure was considered — as something of a reverse playbook. Lesson 1? “Make sure you get out there and define what you’re trying to do,” said former Senator Trent Lott, the Mississippi Republican who, in 2007, was the minority whip when his chamber’s immigration efforts imploded. “Don’t forget to pay attention to the message, and don’t let the media define what you’re trying to do.” It is a tip that Mr. Lott says he has communicated to the staff of Senator Marco Rubio, a Florida Republican involved in the current effort, and so far Mr. Rubio seems to be heeding the advice. In recent weeks, he has focused on conservative media powerhouses, tirelessly wooing influential voices on the right like Bill O’Reilly and Rush Limbaugh. “The outreach by Marco Rubio has been very positive,” Mr. Lott said. “He’s very good at explaining what he wants to do.” Getting out ahead by articulating their immigration principles, as the group did in a Monday news conference, is only one of the ways the senators hope to learn from the mistakes of the past. This time, they said, they are capitalizing on a promising political environment, using more conciliatory language, and trying to harness media outlets to their advantage. They also plan to move their legislation through the Judiciary Committee, a step not taken in 2007 and one that helped doom the bill, and are working more closely **with businesses and labor unions** to make sure the two can also reach a compromise. “Our timing is right,” said Richard J. Durbin of Illinois, the No. 2 Democrat in the Senate. “The election results are still fresh in the minds of my Republican colleagues and they don’t want to go through this again.” President George W. Bush said in 2009 that it was “a mistake” to have pushed for changes to Social Security, rather than immigration, immediately after the 2004 election. By the time he took on immigration late in his second term, he was a lame duck president, weakened by the war in Iraq and facing dissent within his party. “By his own admission, President Bush made a strategic error in not pushing the issue right after his re-election,” said Kevin Appleby, the director of migration policy at the United States Conference of Catholic Bishops. “President Obama is not making the same mistake. He still has a lot of political capital to spend.” In the wake of the 2012 presidential election, where Mr. Obama’s defeat of Mitt Romney came with the help of 71 percent of the Hispanic vote, **those on all sides** of the immigration effort believe the climate is ripe for another attempt. And, at least in the early stages, they are taking steps to reach across the aisle, even with the words they choose. “The most important lesson I took way from 2006 and 2007 is that people had no faith that there wouldn’t be future waves of illegal immigrants,” said Senator Charles E. Schumer, a Democrat of New York in the Senate’s bipartisan immigration group. To show that he is serious about an overhaul, he explained, he is especially conscious of the language he uses; Mr. Schumer now refers to “illegal immigrants,” a term preferred by the right and an acknowledgment that the 11 million illegal immigrants currently in the country did, in fact, break the law. In a similar linguistic concession, Mr. Rubio, during Monday’s immigration news conference, referred to the “undocumented” workers, a term generally preferred by Democrats and loathed by his party’s conservative wing. In 2007, in an attempt to save time and reach a deal, the Senate bypassed the Judiciary Committee and brought the legislation straight to the floor. At the time, the senators who drafted the bill tried to band together to vote down any amendments that changed the substance of their compromise, an agreement that broke down. Several controversial amendments, including one that then-Senator Obama supported, ultimately led to the bill’s collapse. “What we’re doing now is we’re going to put it through committee,” Mr. Schumer said. “When the bill gets through committee, it will be battle-tested and we will be prepared for the floor in a better way.” The group is also considering again trying to maintain **a large voting bloc**, to squash any amendments they believe could kill their bill. “I think we have to unless there’s something that we both agree to,” Senator John McCain, Republican of Arizona, said when asked about such a possibility at an immigration panel on Wednesday. “It’s going to be fragile, as these kinds of things are, and so we will have to take some tough votes in order to keep it intact.”

#### Thorium causes massive backlash

Niiler 12 Eric is a health and science writer at the Washington Post. “Nuclear power entrepreneurs push thorium as a fuel,” Feb 20, http://www.washingtonpost.com/national/health-science/nuclear-power-entrepreneurs-push-thorium-as-a-fuel/2011/12/15/gIQALTinPR\_story.html?wprss=rss\_national

Although the idea of thorium power has been around for decades — and some countries are planning to build thorium-powered plants — it has not caught on with the companies that design and build nuclear plants in the United States or with the national research labs charged with investigating future energy sources.¶ **“There are small boatloads of fanatics on thorium that don’t see the downsides**,” said Dan Ingersoll, senior project manager for nuclear technology at the Oak Ridge National Laboratory in Tennessee. For one thing, he said, it would betoo expensive to replace or convert the nuclear power plants already running in this country: “A thorium-based fuel cycle has some advantages, but **it’s not compelling for infrastructure and investments.”**¶ He also pointed out that thorium would still have some radioactive byproducts — just not as much as uranium and not as long-lived — and that there is no ready stockpile of thorium in the United States. It would have to be mined.¶ Overall, he says the benefits don’t outweigh the huge costs of switching technologies. “I’m looking for something compelling enough to trash **billions of dollars of infrastructure** that we have already and I don’t see that.”¶ Thorium advocates such as Kirk Sorensen, a former NASA engineer who is now chief executive of Huntsville, Ala.-based Flibe Energy, are not deterred.¶ “We recognize this is a new and different technology, and developing it is significantly different from the existing nuclear industry,” Sorensen said. “Part of **the problem is that nuclear only means one thing in the** public and **[U.S.] government’s mind.”**¶ Thorium exists in the ground as thorium oxide and is three to four times as abundant worldwide as uranium, according to a 2005 report from the International Atomic Energy Agency. Thorium is less radioactive than uranium, and it emits alpha particles, which are less biologically harmful than uranium’s gamma particles. That makes thorium easier to store safely.¶ With an extremely high melting point (over 6,000 degrees), thorium has been used in portable gas lanterns, high-temperature ceramic products and aerospace applications. But because of its radioactivity and the development of alternative materials, most uses of the element were phased out.¶ Once a working experiment¶ Half a century ago, however, the United States was taking a serious look at thorium as a nuclear fuel. It was used at a molten-salt reactor that government scientists built and ran from 1965 to 1969 at Oak Ridge.¶ But after India detonated a nuclear bomb in 1974 with plutonium extracted from a reactor designed for non-weapons use, fears of proliferation convinced successive U.S. administrations to cut back on experimental nuclear programs. The thorium-fuel project was mostly forgotten. Instead, all subsequent nuclear plants were designed to use uranium, the fuel that powers all 104 reactors operating in the United States today.¶ Almost all the U.S. plants are at least 25 years old; some are approaching 50. With the federal government unable to come up with a permanent waste disposal site, spent fuel rods — which remain radioactive for thousands of years — are piling up at each reactor site.¶ Nevertheless, utilities have been preparing to build 20 to 30 similar reactors to replace the older ones. (Earlier this month, the Nuclear Regulatory Commission approved Atlanta-based Southern Co.’s proposal to build two such reactors in Georgia. )¶ For the past few years, Sorensen has been trying to convince them to build LFTRs instead. He posts technical documents from the Oak Ridge thorium reactor on his blog, Energy from Thorium. Last year, he left his day job at Teledyne Brown Engineering to start Flibe, the name of which is derived from the mixture of fluoride, lithium and beryllium salts used in a LFTR.¶ “We can look back to Oak Ridge,” he says, to “rebuild the capability that existed in 1974.”¶ Sorensen says a LFTR using a mixture of thorium as a fuel plus either uranium or plutonium to kick-start the reaction could produce higher core temperatures at lower pressures than steam reactors, meaning it would not need as many safety and cooling systems.¶ Even better, he says, LFTRs could be configured to consume the spent fuel that is sitting around the country at nuclear sites.¶ Other entrepreneurs are taking a different tack. McLean-based Lightbridge wants to mix thorium and uranium to slightly boost the output of existing nuclear plants. Lightbridge is helping the Russian government build such a program, said Seth Grae, the company’s president and chief executive.¶ But most U.S. nuclear energy industry executives are wary of both approaches to thorium, saying that neither utilities nor investors are eager to gamble on an unfamiliar technology.

#### Immigration reform generates an effective base of IT experts.

**McLarty 9** (Thomas F. III, President – McLarty Associates and Former White House Chief of Staff and Task Force Co-Chair, “U.S. Immigration Policy: Report of a CFR-Sponsored Independent Task Force”, 7-8, http://www.cfr.org/ publication/19759/us\_immigration\_policy.html)

We have seen, when you look at the table of the top 20 firms that are H1-B visa requestors, at least 15 of those are IT firms. And as we're seeing across industry, much of the hardware and software that's used in this country is not only manufactured now overseas, but it's developed overseas by scientists and engineers who were educated here in the United States. We're seeing a lot more activity around cyber-security, certainly noteworthy attacks here very recently. It's becoming an increasingly dominant set of requirements across not only to the Department of Defense, but the Department of Homeland Security and the critical infrastructure that's held in private hands. Was there any discussion or any interest from DOD or DHS as you undertook this review on the security things about what can be done to try to generate a more effective group of IT experts here in the United States, many of which are coming to the U.S. institutions, academic institutions from overseas and often returning back? This potentially puts us at a competitive disadvantage going forward. MCLARTY: Yes. And I think your question largely is the answer as well. I mean, clearly we have less talented students here studying -- or put another way, more talented students studying in other countries that are gifted, talented, really have a tremendous ability to develop these kind of technology and scientific advances, we're going to be put at an increasingly disadvantage. Where if they come here -- and I kind of like Dr. Land's approach of the green card being handed to them or carefully put in their billfold or purse as they graduate -- then, obviously, that's going to strengthen, I think, our system, our security needs.

#### That deters and solves the impact to cyberattacks

**Saydjari 8** (O. Sami, Cyber Defense Agency, LLC, “Structuring for Strategic Cyber Defense: A Cyber Manhattan Project Blueprint”, 2008 Annual Computer Security Applications Conference, http://www.acsac.org/2008/program /keynotes/saydjari.pdf)

As a step toward a security research plan that includes such capabilities, we should identify endstates— goals in terms of how we want our systems to ideally operate. This fresh perspective includes the overall strategic picture and connects clearly with strategic actions that significantly mitigate strategic vulnerabilities. If, for example, the nation has a capability to quickly recover its critical information infrastructure, then the end-state is that strategic attack damages are mitigated and critical services are restored quickly, possibly deterring adversaries from attempting a future attack. Desired End-States. The National Cyber Defense Initiative (NCDI) Opening Moves Workshop [4] identified important end-states, the outcome of a 10- year research effort to create critical capabilities. The following end-states appear in the workshop proceedings: --Continuity of Critical Information Infrastructure Operations. Create technology that would be the basis for a resilient US cyber infrastructure that would sustain critical functions in the face of attacks, including those that could be affected by determined adversaries. --Well-Defended Critical Assets. Make it economically prohibitive for an adversary to cause strategic damage to critical US infrastructures. Currently, adversaries can attack critical systems without investing substantial resources.

#### Cyberterrorism will cause accidental launch that triggers the Dead Hand and nuclear war

**Fritz 9** (Jason, BS – St. Cloud, “Hacking Nuclear Command and Control”, Study Commissioned on Nuclear Non-Proliferation and Disarmament, July, www.icnnd.org/Documents/Jason\_Fritz\_Hacking\_NC2.doc)  
*Direct control of launch*   
The US uses the two-man rule to achieve a higher level of security in nuclear affairs. Under this rule two authorized personnel must be present and in agreement during critical stages of nuclear command and control. The President must jointly issue a launch order with the Secretary of Defense; Minuteman missile operators must agree that the launch order is valid; and on a submarine, both the commanding officer and executive officer must agree that the order to launch is valid. In the US, in order to execute a nuclear launch, an Emergency Action Message (EAM) is needed. This is a preformatted message that directs nuclear forces to execute a specific attack. The contents of an EAM change daily and consist of a complex code read by a human voice. Regular monitoring by shortwave listeners and videos posted to YouTube provide insight into how these work. These are issued from the NMCC, or in the event of destruction, from the designated hierarchy of command and control centres. Once a command centre has confirmed the EAM, using the two-man rule, the Permissive Action Link (PAL) codes are entered to arm the weapons and the message is sent out. These messages are sent in digital format via the secure Automatic Digital Network and then relayed to aircraft via single-sideband radio transmitters of the High Frequency Global Communications System, and, at least in the past, sent to nuclear capable submarines via Very Low Frequency (Greenemeier 2008, Hardisty 1985). The technical details of VLF submarine communication methods can be found online, including PC-based VLF reception. Some reports have noted a Pentagon review, which showed a potential “electronic back door into the US Navy’s system for broadcasting nuclear launch orders to Trident submarines” (Peterson 2004). The investigation showed that cyber terrorists could potentially infiltrate this network and insert false orders for launch. The investigation led to “elaborate new instructions for validating launch orders” (Blair 2003). Adding further to the concern of cyber terrorists seizing control over submarine launched nuclear missiles; The Royal Navy announced in 2008 that it would be installing a Microsoft Windows operating system on its nuclear submarines (Page 2008). The choice of operating system, apparently based on Windows XP, is not as alarming as the advertising of such a system is. This may attract hackers and narrow the necessary reconnaissance to learning its details and potential exploits. It is unlikely that the operating system would play a direct role in the signal to launch, although this is far from certain. Knowledge of the operating system may lead to the insertion of malicious code, which could be used to gain accelerating privileges, tracking, valuable information, and deception that could subsequently be used to initiate a launch. Remember from Chapter 2 that the UK’s nuclear submarines have the authority to launch if they believe the central command has been destroyed. Attempts by cyber terrorists to create the illusion of a decapitating strike could also be used to engage fail-deadly systems. Open source knowledge is scarce as to whether Russia continues to operate such a system. However evidence suggests that they have in the past. Perimetr, also known as Dead Hand, was an automated system set to launch a mass scale nuclear attack in the event of a decapitation strike against Soviet leadership and military. In a crisis, military officials would send a coded message to the bunkers, switching on the dead hand. If nearby ground-level sensors detected a nuclear attack on Moscow, and if a break was detected in communications links with top military commanders, the system would send low-frequency signals over underground antennas to special rockets. Flying high over missile fields and other military sites, these rockets in turn would broadcast attack orders to missiles, bombers and, via radio relays, submarines at sea. Contrary to some Western beliefs, Dr. Blair says, many of Russia's nuclear-armed missiles in underground silos and on mobile launchers can be fired automatically. (Broad 1993) Assuming such a system is still active, cyber terrorists would need to create a crisis situation in order to activate Perimetr, and then fool it into believing a decapitating strike had taken place. While this is not an easy task, the information age makes it easier. Cyber reconnaissance could help locate the machine and learn its inner workings. This could be done by targeting the computers high of level official’s—anyone who has reportedly worked on such a project, or individuals involved in military operations at underground facilities, such as those reported to be located at Yamantau and Kosvinksy mountains in the central southern Urals (Rosenbaum 2007, Blair 2008) Indirect Control of Launch Cyber terrorists could cause incorrect information to be transmitted, received, or displayed at nuclear command and control centres, or shut down these centres’ computer networks completely. In 1995, a Norwegian scientific sounding rocket was mistaken by Russian early warning systems as a nuclear missile launched from a US submarine. A radar operator used Krokus to notify a general on duty who decided to alert the highest levels. Kavkaz was implemented, all three chegets activated, and the countdown for a nuclear decision began. It took eight minutes before the missile was properly identified—a considerable amount of time considering the speed with which a nuclear response must be decided upon (Aftergood 2000). Creating a false signal in these early warning systems would be relatively easy using computer network operations. The real difficulty would be gaining access to these systems as they are most likely on a closed network. However, if they are transmitting wirelessly, that may provide an entry point, and information gained through the internet may reveal the details, such as passwords and software, for gaining entrance to the closed network. If access was obtained, a false alarm could be followed by something like a DDoS attack, so the operators believe an attack may be imminent, yet they can no longer verify it. This could add pressure to the decision making process, and if coordinated precisely, could appear as a first round EMP burst. Terrorist groups could also attempt to launch a non-nuclear missile, such as the one used by Norway, in an attempt to fool the system. The number of states who possess such technology is far greater than the number of states who possess nuclear weapons. Obtaining them would be considerably easier, especially when enhancing operations through computer network operations. Combining traditional terrorist methods with cyber techniques opens opportunities neither could accomplish on their own. For example, radar stations might be more vulnerable to a computer attack, while satellites are more vulnerable to jamming from a laser beam, thus together they deny dual phenomenology. Mapping communications networks through cyber reconnaissance may expose weaknesses, and automated scanning devices created by more experienced hackers can be readily found on the internet. Intercepting or spoofing communications is a highly complex science. These systems are designed to protect against the world’s most powerful and well funded militaries. Yet, there are recurring gaffes, and the very nature of asymmetric warfare is to bypass complexities by finding simple loopholes. For example, commercially available software for voice-morphing could be used to capture voice commands within the command and control structure, cut these sound bytes into phonemes, and splice it back together in order to issue false voice commands (Andersen 2001, Chapter 16). Spoofing could also be used to escalate a volatile situation in the hopes of starting a nuclear war. “ \*\*[they cut off the paragraph]\*\* “In June 1998, a group of international hackers calling themselves Milw0rm hacked the web site of India’s Bhabha Atomic Research Center (BARC) and put up a spoofed web page showing a mushroom cloud and the text “If a nuclear war does start, you will be the first to scream” (Denning 1999). Hacker web-page defacements like these are often derided by critics of cyber terrorism as simply being a nuisance which causes no significant harm. However, web-page defacements are becoming more common, and they point towards alarming possibilities in subversion. During the 2007 cyber attacks against Estonia, a counterfeit letter of apology from Prime Minister Andrus Ansip was planted on his political party website (Grant 2007). This took place amid the confusion of mass DDoS attacks, real world protests, and accusations between governments.

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#### Text: the fifty state governments of the United States should increase financial incentives for thorium energy production in the amount of 1 Billion dollars immediately and 5 billion dollars in 2017. The fifty state governments should issue licenses for thorium energy production.

#### States solves upfront capital costs of nuclear power

Yanosek 12 (Kassia, Entrepreneur-in-Residence – Stanford University’s Steyer-Taylor Center for Energy Policy and Finance, “Financing Nuclear Power in the US,” Stanford Energy Journal, Spring, http://energyclub.stanford.edu/index.php/Journal/Financing\_Nuclear\_Power\_by\_Kassia\_Yanosek)

Furthermore, capital costs are inherently high, ranging in the billions or tens of billions of dollars, and are compounded by financing charges during long construction times. Without government support, financing nuclear is currently not possible in the capital markets. Recently, Constellation Energy and NRG separately pulled the plug on new multi-billion dollar plants, citing financing problems. Projects, however, will get done on a one-off basis. Southern Company’s Vogtle Plant in Eastern Georgia is likely to be the sponsor of the first new generation to be constructed, taking advantage of local regulatory and federal support. Two new reactors of next-generation technology are in the permitting stage, which will bring online 2,200 megawatts (MW) of new capacity, and will cost $14 billion. The project will take advantage of tax credits and loan guarantees provided in the 2005 Energy Policy Act. What is the ideal financial structure for funding new nuclear generation? The simplest answer is “through the rate base.” This is typically accomplished by state-level legislation which allows utilities to pass the construction costs through to the ratepayers. The ideal mechanism, which exists in a few states, allows the utility to raise rates during plant construction and adjust rates periodically for delays or cost overruns. However, this structure is not possible in most markets. California, for example, has a moratorium where utilities are not legislatively authorized to recover rates for nuclear development. And even with a regulated territory, utilities often require additional financing to raise sufficient up-front funds for construction or to mitigate risks in markets where cost recovery through the rate base is not assured. Another option, which could be a complementary solution, is a project finance model, in which debt is raised at the project level and backstopped by long-term contracts with creditworthy parties. Even this would be complex, since project financing would require finding a suite of investors willing to take on the different risk/return profiles that exist at different stages of the project. In addition, federal and/or state-based financial support designed specifically for nuclear would still be critical.

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#### Electricity prices are on the decline; trends prove

**Platts 1/9** (“EIA data show US wholesale power price declines in 2012”, 01/09, http://www.platts.com/RSSFeedDetailedNews/RSSFeed/ElectricPower/6004476)

The average day-ahead wholesale power price in every region of the US declined during 2012, continuing a trend from 2011, the US Energy Information Administration said Wednesday. Lower natural gas prices and generally mild temperatures contributed to the declines in on-peak power prices, EIA said. The largest drop from 2011 was in the Electric Reliability Council of Texas, which experienced a 43% decline to an average of $35.91/MWh, EIA said in a daily note on energy market trends in 2012. The large drop in ERCOT was mainly due to a return to more typical power prices in 2012 following significant price spikes in the summer of 2011, the agency said. In much of the US, such as the Southeast, Mid-Atlantic, New England and Northwest, average wholesale power prices were from 22% to 27% lower than in 2011, EIA reported.

#### New nuclear reactors drive up electricity prices

Cooper 9 (Mark, SENIOR FELLOW FOR ECONOMIC ANALYSIS INSTITUTE FOR ENERGY AND THE ENVIRONMENT¶ VERMONT LAW SCHOOL, "THE ECONOMICS OF NUCLEAR REACTORS: RENAISSANCE OR RELAPSE?," http://www.vermontlaw.edu/Documents/Cooper%20Report%20on%20Nuclear%20Economics%20FINAL%5B1%5D.pdf)

Within the past year, estimates of the cost of nuclear power from a new generation of ¶ reactors have ranged from a low of 8.4 cents per kilowatt hour (kWh) to a high of 30 cents. This ¶ paper tackles the debate over the cost of building new nuclear reactors, with the key findings as ¶ follows: ¶ • The initial cost projections put out early in today’s so-called “nuclear renaissance” were about ¶ one-third of what one would have expected, based on the nuclear reactors completed in the ¶ 1990s. ¶ • The most recent cost projections for new nuclear reactors are, on average, over four times as ¶ high as the initial “nuclear renaissance” projections. ¶ • There are numerous options available to meet the need for electricity in a carbon-constrained ¶ environment that are superior to building nuclear reactors. Indeed, nuclear reactors are the worst ¶ option from the point of view of the consumer and society. ¶ • The low carbon sources that are less costly than nuclear include efficiency, cogeneration, ¶ biomass, geothermal, wind, solar thermal and natural gas. Solar photovoltaics that are presently ¶ more costly than nuclear reactors are projected to decline dramatically in price in the next ¶ decade. Fossil fuels with carbon capture and storage, which are not presently available, are ¶ projected to be somewhat more costly than nuclear reactors. ¶ • Numerous studies by Wall Street and independent energy analysts estimate efficiency and ¶ renewable costs at an average of 6 cents per kilowatt hour, while the cost of electricity from ¶ nuclear reactors is estimated in the range of 12 to 20 cents per kWh. ¶ • The additional cost of building 100 new nuclear reactors, instead of pursuing a least cost ¶ efficiency-renewable strategy, would be in the range of $1.9-$4.4 trillion over the life the ¶ reactors. ¶ Whether the burden falls on ratepayers (in electricity bills) or taxpayers (in large subsidies), ¶ incurring excess costs of that magnitude would be a substantial burden on the national economy and ¶ add immensely to the cost of electricity and the cost of reducing carbon emissions.

#### Low electricity prices spurs manufacturing "reshoring" and sparks US economic growth via consumer spending and investment

Perry 7/31/12 (Mark, Prof of Economics @ Univ. of Michigan, "America's Energy Jackpot: Industrial Natural Gas Prices Fall to the Lowest Level in Recent History," http://mjperry.blogspot.com/2012/07/americas-energy-jackpot-industrial.html)

Building petrochemical plants could suddenly become attractive in the United States. Manufacturers will "reshore" production to take advantage of low natural gas and electricity prices. Energy costs will be lower for a long time, giving a competitive advantage to companies that invest in America, and also helping American consumers who get hit hard when energy prices spike.¶ After years of bad economic news, the natural gas windfall is very good news. Let's make the most of it." ¶ The falling natural gas prices also make the predictions in this December 2011 study by PriceWaterhouseCoopers, "Shale gas: A renaissance in US manufacturing?"all the more likely: ¶ U.S. manufacturing companies (chemicals, metals and industrial) could employ approximately one million more workers by 2025 because of abundant, low-priced natural gas.¶ Lower feedstock and energy cost could help U.S. manufacturers reduce natural gas expenses by as much as $11.6 billion annually through 2025.¶ MP: As I have emphasized lately, America's ongoing shale-based energy revolution is one of the real bright spots in an otherwise somewhat gloomy economy, and provides one of the best reasons to be bullish about America's future. The shale revolution is creating thousands of well-paying, shovel-ready jobs in Texas, North Dakota and Ohio, and thousands of indirect jobs in industries that support the shale boom (sand, drilling equipment, transportation, infrastructure, steel pipe, restaurants, etc.). In addition, the abundant shale gas is driving down energy prices for industrial, commercial, residential and electricity-generating users, which frees up billions of dollars that can be spent on other goods and services throughout the economy, providing an energy-based stimulus to the economy. ¶ Cheap natural gas is also translating into cheaper electricity rates, as low-cost natural gas displaces coal. Further, cheap and abundant natural gas is sparking a manufacturing renaissance in energy-intensive industries like chemicals, fertilizers, and steel. And unlike renewable energies like solar and wind, the natural gas boom is happening without any taxpayer-funded grants, subsidies, credits and loans. Finally, we get an environmental bonus of lower CO2 emissions as natural gas replaces coal for electricity generation. Sure seems like a win, win, win, win situation to me.

#### Manufacturing strength is key to both the economy and military power

Ettlinger and Gordon 11 (Michael and Kate, the Vice President for Economic Policy at the Center for American Progress, former director of the Economic Analysis and Research Network of the Economic Policy Institute and Vice President for Energy Policy at the Center for American Progress. Most recently, Kate was the co-director of the national Apollo Alliance, where she still serves as senior policy advisor. Former senior associate at the Center on Wisconsin Strategy, "The Importance and Promise of American Manufacturing" <http://www.americanprogress.org/issues/2011/04/pdf/manufacturing.pdf-)>

Manufacturing is critically important to the American economy. For generations, the strength of our country rested on the power of our factory floors—both the machines and the men and women who worked them. We need manufacturing to continue to be a bedrock of strength for generations to come. Manufacturing is woven into the structure of our economy: Its importance goes far beyond what happens behind the factory gates. The strength or weakness of American manufacturing carries implications for the entire economy, our national security, and the well-being of all Americans. Manufacturing today accounts for 12 percent of the U.S. economy and about 11 percent of the private-sector workforce. But its significance is even greater than these numbers would suggest. The direct impact of manufacturing is only a part of the picture. First, jobs in the manufacturing sector are good middle-class jobs for millions of Americans. Those jobs serve an important role, offering economic opportunity to hard-working, middle-skill workers. This creates upward mobility and broadens and strengthens the middle class to the benefit of the entire economy. What’s more, U.S.-based manufacturing underpins a broad range of jobs that are quite different from the usual image of manufacturing. These are higher-skill service jobs that include the accountants, bankers, and lawyers that are associated with any industry, as well as a broad range of other jobs including basic research and technology development, product and process engineering and design, operations and maintenance, transportation, testing, and lab work. Many of these jobs are critical to American technology and innovation leadership. The problem today is this: Many multinational corporations may for a period keep these higher-skill jobs here at home while they move basic manufacturing elsewhere in response to other countries’ subsidies, the search for cheaper labor costs, and the desire for more direct access to overseas markets, but eventually many of these service jobs will follow. When the basic manufacturing leaves, the feedback loop from the manufacturing floor to the rest of a manufacturing operation—a critical element in the innovative process—is eventually broken. To maintain that feedback loop, companies need to move higher-skill jobs to where they do their manufacturing. And with those jobs goes American leadership in technology and innovation. This is why having a critical mass of both manufacturing and associated service jobs in the United States matters. The "industrial commons" that comes from the crossfertilization and engagement of a community of experts in industry, academia, and government is vital to our nation’s economic competitiveness. Manufacturing also is important for the nation’s economic stability. The experience of the Great Recession exemplifies this point. Although manufacturing plunged in 2008 and early 2009 along with the rest of the economy, it is on the rebound today while other key economic sectors, such as construction, still languish. Diversity in the economy is important—and manufacturing is a particularly important part of the mix. Although manufacturing is certainly affected by broader economic events, the sector’s internal diversity—supplying consumer goods as well as industrial goods, serving both domestic and external markets— gives it great potential resiliency. Finally, supplying our own needs through a strong domestic manufacturing sector protects us from international economic and political disruptions. This is most obviously important in the realm of national security, even narrowly defined as matters related to military strength, where the risk of a weak manufacturing capability is obvious. But overreliance on imports and substantial manufacturing trade deficits weaken us in many ways, making us vulnerable to everything from exchange rate fluctuations to trade embargoes to natural disasters.

#### Heg solves multiple scenarios for nuke war

Kagan 7 (Robert, Senior Associate – Carnegie Endowment for International Peace, “End of Dreams, Return of History: International Rivalry and American Leadership”, Policy Review, August/September, http://www.hoover.org/publications/policyreview/8552512.html#n10)

The jostling for status and influence among these ambitious nations and would-be nations is a second defining feature of the new post-Cold War international system. Nationalism in all its forms is back, if it ever went away, and so is international competition for power, influence, honor, and status. American predominance prevents these rivalries from intensifying —  its regional as well as its global predominance. Were the United States to diminish its influence in the regions where it is currently the strongest power, the other nations would settle disputes as great and lesser powers have done in the past: sometimes through diplomacy and accommodation but often through confrontation and wars of varying scope, intensity, and destructiveness. One novel aspect of such a multipolar world is that most of these powers would possess nuclear weapons. That could make wars between them less likely, or it could simply make them more catastrophic. It is easy but also dangerous to underestimate the role the United States plays in providing a measure of stability in the world even as it also disrupts stability. For instance, the United States is the dominant naval power everywhere, such that other nations cannot compete with it even in their home waters. They either happily or grudgingly allow the United States Navy to be the guarantor of international waterways and trade routes, of international access to markets and raw materials such as oil. Even when the United States engages in a war, it is able to play its role as guardian of the waterways. In a more genuinely multipolar world, however, it would not. Nations would compete for naval dominance at least in their own regions and possibly beyond. Conflict between nations would involve struggles on the oceans as well as on land. Armed embargos, of the kind used in World War i and other major conflicts, would disrupt trade flows in a way that is now impossible. Such order as exists in the world rests not only on the goodwill of peoples but also on American power. Such order as exists in the world rests not merely on the goodwill of peoples but on a foundation provided by American power. Even the European Union, that great geopolitical miracle, owes its founding to American power, for without it the European nations after World War II would never have felt secure enough to reintegrate Germany. Most Europeans recoil at the thought, but even today Europe ’s stability depends on the guarantee, however distant and one hopes unnecessary, that the United States could step in to check any dangerous development on the continent. In a genuinely multipolar world, that would not be possible without renewing the danger of world war. People who believe greater equality among nations would be preferable to the present American predominance often succumb to a basic logical fallacy. They believe the order the world enjoys today exists independently of American power. They imagine that in a world where American power was diminished, the aspects of international order that they like would remain in place. But that ’s not the way it works. International order does not rest on ideas and institutions. It is shaped by configurations of power. The international order we know today reflects the distribution of power in the world since World War ii, and especially since the end of the Cold War. A different configuration of power, a multipolar world in which the poles were Russia, China, the United States, India, and Europe, would produce its own kind of order, with different rules and norms reflecting the interests of the powerful states that would have a hand in shaping it. Would that international order be an improvement? Perhaps for Beijing and Moscow it would. But it is doubtful that it would suit the tastes of enlightenment liberals in the United States and Europe. The current order, of course, is not only far from perfect but also offers no guarantee against major conflict among the world ’s great powers. Even under the umbrella of unipolarity, regional conflicts involving the large powers may erupt. War could erupt between China and Taiwan and draw in both the United States and Japan. War could erupt between Russia and Georgia, forcing the United States and its European allies to decide whether to intervene or suffer the consequences of a Russian victory. Conflict between India and Pakistan remains possible, as does conflict between Iran and Israel or other Middle Eastern states. These, too, could draw in other great powers, including the United States. Such conflicts may be unavoidable no matter what policies the United States pursues. But they are more likely to erupt if the United States weakens or withdraws from its positions of regional dominance. This is especially true in East Asia, where most nations agree that a reliable American power has a stabilizing and pacific effect on the region. That is certainly the view of most of China ’s neighbors. But even China, which seeks gradually to supplant the United States as the dominant power in the region, faces the dilemma that an American withdrawal could unleash an ambitious, independent, nationalist Japan. Conflicts are more likely to erupt if the United States withdraws from its positions of regional dominance. In Europe, too, the departure of the United States from the scene — even if it remained the world’s most powerful nation — could be destabilizing. It could tempt Russia to an even more overbearing and potentially forceful approach to unruly nations on its periphery. Although some realist theorists seem to imagine that the disappearance of the Soviet Union put an end to the possibility of confrontation between Russia and the West, and therefore  to the need for a permanent American role in Europe, history suggests that conflicts in Europe involving Russia are possible even without Soviet communism. If the United States withdrew from Europe — if it adopted what some call a strategy of “offshore balancing” — this could in time increase the likelihood of conflict involving Russia and its near neighbors, which could in turn draw the United States back in under unfavorable circumstances.

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#### DOE will block natural gas exports – increased demand means exports hurt “public interest”

Ebinger et al 12 (Charles, Senior Fellow and Director of the Energy Security Initiative – Brookings, Kevin Massy, Assistant Director of the Energy Security Initiative – Brookings, and Govinda Avasarala, Senior Research Assistant in the Energy Security Initiative – Brookings, “Liquid Markets: Assessing the Case for U.S. Exports of Liquefied Natural Gas,” Brookings Institution, Policy Brief 12-01, http://www.brookings.edu/~/media/research/files/reports/2012/5/02%20lng%20exports%20ebinger/0502\_lng\_exports\_ebinger.pdf)

From the perspective of the U.S. federal government, the issue of implications is viewed in terms of “public interest.” Under existing legislation, exports of natural gas to countries with a free trade agreement (FTA) with the United States are, by law, deemed to be in the public interest and authorization is required to be given without modification or delay. Projects looking for authorization to export LNG to countries without an FTA, which account for roughly 96 percent of current global LNG demand, are required to be approved by the Secretary of Energy unless, after public hearing, the Department of Energy finds that such exports are not in the public interest. 80 Although the legal definition of “public interest” is not explicitly given in existing legislation, according to public statements by officials from the Department of Energy, “public interest” includes:

• Adequate domestic natural gas supply;

• Domestic demand for natural gas proposed for export; Economic impacts of exports (on GDP, consumers, and industry); • U.S. energy security; • Job creation; • U.S. balance of trade; • International considerations; • Environmental considerations; • Consistency with DoE’s policy of promoting market competition through free negotiation of trade 81 The first two of these criteria were addressed in Part I. The remainder focus on the various domestic and international implications of U.S. LNG exports. domestic implications The domestic implications of U.S. LNG exports include their impact on natural gas prices, natural gas price volatility, jobs and competitiveness, and on overall energy security. Price of domestic natural Gas The domestic price impact of natural gas exports will be a significant factor in determining whether or not the United States should export LNG. While it is generally acknowledged that a domestic price increase will result from largescale LNG exports, the size of the price increase is the subject of debate, with a number of studies suggesting a range of possible outcomes. The important considerations when analyzing the results and conclusions of the various existing studies are the assumptions and models that are used when making price forecasts. Below are the results and methodologies of five major pricing studies done by the EIA and three consultancies: Deloitte, ICF International, and Navigant Consulting, which published two studies. 2012 Energy information Administration study In January 2012, the EIA published a study entitled “Effect of Increased Natural Gas Exports on Domestic Energy Markets.” 82 The study, conducted at the request of the Office of Fossil Energy of the Department of Energy, analyzed four different export scenarios across four different resource base or economic assumptions to project price responses to LNG exports. In addition to a “baseline” scenario, where no LNG is exported, the EIA model considered four different export scenarios: • A low export/slow growth scenario, where 6 bcf/day of LNG is exported, phased in at a rate of 1 bcf/day per year; • A low export/rapid growth scenario, where 6 bcf/day of LNG is exported, phased in at a rate of 3 bcf/day per year; • A high export/slow growth scenario, where 12 bcf/day of LNG is exported, phased in at a rate of 1 bcf/day per year; • A high export/rapid growth scenario, where 12 bcf/day of LNG is exported, phased in at a rate of 3 bcf/day per year Given the uncertainty over the actual size of the shale gas resource base and the future growth of the U.S. economy, each of these scenarios (both “baseline” and export) were applied to four alternate background cases: • A reference case, based on the EIA’s 2011 Annual Energy Outlook; • A low-shale estimated ultimate recovery (EUR) case, in which shale gas production from new, undrilled wells is 50 percent below the reference case scenario; • A high-shale EUR case, in which shale gas production from new, undrilled wells is 50 percent higher than the reference case; • A high economic growth case, in which U.S. GDP grows at 3.2 percent as opposed to the 2.7 percent assumed in the reference case. Given the range of assumptions, the range of results was unsurprisingly wide. The results range from a 9.6 percent increase (from $3.56 to $3.90/ mcf) in domestic natural gas prices in 2025 due to exports (in the case of high shale gas recovery, low export volumes and a slow rate of export growth) to a 32.5 percent increase (in the case of low shale gas recovery, high export volumes and a high rate of export growth). The percentage premium for domestic natural gas prices in 2025 for each scenario relative to the baseline scenario price estimate is detailed in table 3. In addition to the price premium for exporting natural gas that exists in each case, the EIA study projected a short-term spike in natural gas prices as a result of LNG exports. As figure 7 below illustrates, in 2015, the first year that LNG exports occur, domestic natural gas prices rise rapidly until total export capacity is reached. In the “lowrapid” scenario prices peak in 2016, after the 6 bcf/day of export capacity is built over 2 years; in the “high-slow” scenario, natural gas prices peak in 2026, after the 12 bcf/day of export capacity is built over 12 years. The immediate jump in price becomes more pronounced in the scenarios where LNG export capacity increases quickly. In the “low-rapid” scenario, the price of natural gas peaks at nearly 18 percent above the baseline case; in the “high-rapid” scenario, natural gas prices peak at 36 percent above the baseline case. This price impact is exacerbated in the Low Shale EUR and High Macroeconomic Growth cases, as LNG exports further tighten domestic natural gas markets. In the most extreme example, the high-rapid scenario for exports in a Low Shale EUR case, the price for natural gas peaks at more than 50 percent than the baseline case. 83 There are two factors that should be considered when interpreting the results of this price impact study. The first is the assumption regarding the rate at which LNG could be exported. The results of EIA’s analysis represent an extreme scenario for LNG exports. In the existing LNG market, it is particularly unlikely that either the “low-rapid” or the “high-rapid” scenarios would materialize. The former assumption stipulates that the United States would export 6 bcf/day of LNG by 2016. Given that, at the time of writing, only one facility has been approved to export 2.2 bcf/day to nonFTA countries starting in 2015, it is unlikely that another three plants would be approved and built in such a short time frame. 84 The latter scenario, that the United States would be exporting 12 bcf/ day of LNG by 2018, suggests that in the next several years, the United States would grow from exporting negligible volumes of LNG to having roughly one-third of the global LNG export capacity. Not only would this supply growth outpace growth in global LNG demand, but this capacity addition would also have to compete with roughly 11 bcf/day of Australian-origin LNG that is expected to hit the market around the same time. 85 The second issue is the model’s assumptions for incremental investment in natural gas production as a result of increased export capacity. The spike in price depicted in figure 7 occurs because investment from gas producers lags additional demand. In the model, producers respond to, rather than anticipate, additional demand. For this reason, prices peak once the export capacity is filled, before steadily decreasing. In reality, the expectation of future demand would likely induce gas producers to invest in additional production before incremental demand occurs. As a result, the increase in prices would likely begin earlier and peak at a lower level than suggested by the model. deloitte study An earlier study released in November 2011 from the Deloitte Center for Energy Solutions highlighted the producer-response in its model. In addition to finding that LNG exports would produce a smaller increase in gas prices than the EIA report suggests, the Deloitte study points out that “producers can develop more reserves in anticipation of demand growth, such as LNG exports. There will be ample notice and time in advance of the exports to make supplies available.” 86 Using a dynamic model, in which production increased in anticipation of new demand, the Deloitte study found that 6 bcf/day of exports of LNG would result in, on average, a 1.7 percent increase (from $7.09 to $7.21/MMBtu) in the price of natural gas between 2016 and 2035. Further, the Deloitte study noted that there would be regional variations to the increase in natural gas prices resulting from LNG exports. As most of the proposed liquefaction terminals are expected to be on the Gulf Coast, the price of Henry Hub gas, which is the key benchmark for natural gas from the Gulf Coast, will increase by $0.22/ MMBtu by 2035 as a result of U.S. LNG exports. This is more than double the price increase projected in regions further away from the LNG export terminals. In New York and Illinois, natural gas prices are projected to increase by less than $0.10/MMBtu. This is particularly important in the Northeast, which historically experiences some of the highest natural gas prices in the country, but will benefit from the development and consumption of natural gas from the nearby Marcellus shale play. other studies Three other studies of note have analyzed the price impacts of U.S. LNG exports. In August 2010, Navigant Consulting found that 2 bcf/day of LNG exports would cause a price increase of between 7 and 7.9 percent from 2015 to 2035 relative to a scenario with no gas exports. ICF International found in August 2011 that 6 bcf/day of exports would result in an 11 percent ($0.64/MMBtu) increase in natural gas prices over the same period. 87 More recently, Navigant released another study that analyzed the impact of two separate export scenarios. The first scenario modeled the impact of 3.6 bcf/day of LNG exports from three terminals in North America: Sabine Pass in Louisiana, Kitimat in British Columbia, and Coos Bay in Oregon. The second scenario modeled the impact of 6.6 bcf/day of LNG exports from the three aforementioned export projects and 2 bcf/day of added exports from the Gulf Coast and 1 bcf/day from Maryland. 88 This Navigant study found that 6.6 bcf/day of LNG exports would result in a 6 percent ($0.35/MMBtu) increase in natural gas prices from 2015 to 2035. As with the EIA and Deloitte studies, the results of both Navigant and ICF’s studies must be analyzed in the context of their respective methodologies and assumptions. Navigant’s first study uses a more static supply model, which, unlike dynamic supply models, does not fully take account of the effect that higher prices have on spurring additional production. As a result, it takes a conservative estimate of supply growth potential. The report acknowledges that the price outcomes modeled in its analysis “establish the upper range of impacts that exports […] might have on natural gas prices.” 89 This study also did not factor in the reemergence of the industrial sector as a major consumer of natural gas following the shale gas “revolution.” The study assumes that natural gas consumption by the industrial sector will decline by 0.3% per year to 2035. By contrast, the EIA model assumes that industrial sector demand will increase by roughly 1% per year over the same period. 90 The ICF study factors in various levels of production response from an increase in price. Under its 6 bcf/day export scenario, the price impact ranges from a $0.52/ MMBtu increase in a more responsive drilling activity scenario to a $0.75/MMBtu increase in a less responsive drilling activity scenario. which study is right? Given that these studies forecast natural gas prices two decades into the future, it is difficult to determine which study is most accurate. (table 4 shows a comparison of the price impact forecasts of the various models.) However, policymakers would benefit from having a better understanding of the results that are generated from each report. This includes choosing the most relevant results from each report. For instance, following the release of the EIA study, many commentators were quick to highlight that natural gas prices could increase by more than 50 percent as a result of LNG exports. However, this ignored the assumptions behind this number: it was based on the price of natural gas in one year under the most extreme assumptions of exports and domestic resource base. A more comprehensive analysis should include an assessment of the average price impact from 2015 to 2035. When distinguishing between the various studies, policymakers should identify which assumptions most resemble the existing natural gas market and its likely direction, and which models are most reflective of the complex nature of domestic and global natural gas trade. Assuming realistic volumes of natural gas exports as well as a reasonable supply response by natural gas producers are important considerations. It is important to note that the supply curves in the various studies reflect different interpretations of the economics of marginal production. The Power sector and industrial sector Part I indicated that the power-generation and industrial sectors would account for most of the demand for newly available natural gas resources. As shown above, LNG exports are likely to increase domestic prices of natural gas, suggesting negative consequences for these two competing sectors. In their analyses, both Deloitte and EIA found that the majority—63 percent, according to both studies—of the exported natural gas will come from new production as opposed to displaced consumption from other sectors. By contrast, between 17 and 38 percent of supply of natural gas for export would be met by reduced demand, as higher prices pushes some domestic consumers to use less gas. In the power generation and industrial sectors, the price impacts of LNG exports are likely to have modest impacts. In the power sector, natural gas has historically been used as a back up to coal and nuclear base-load generation. For such gas used at the margin, the increase in electricity prices as a result of LNG exports would be limited by its competitiveness relative to other fuels: as soon as it becomes more expensive than the alternative for back up generation, power producers will substitute away from gas. 91 According to ICF International, a $0.64/MMBtu increase in the price of natural gas would result in an electricity price increase of between $1.66 and $4.97/megawatt-hour (MWh), depending on how often gas is used as the marginal fuel for electricity. Deloitte estimates that the price increase of electricity would not be more than $1.65/MWh. 92 EIA estimates that electricity price impacts will be marginal as well (between $1.40/MWh and $2.90/MWh) except in the “highrapid” export scenario. 93 The EIA Annual Energy Outlook 2011 estimates that, without exporting LNG, the average price of electricity (across all fuels) in 2035 will be $92/MWh. 94 In the longer term, natural gas is itself likely to be used for more base-load generation. The rapid increase in shale gas production, coupled with the retirements of as much as 50 gigawatts (GW) of coal-fired electricity due to plant age or inability to adhere to possibly forthcoming EPA regulations is likely to increase the demand for natural gas in the power sector. According to some analysts, the near-term demand caused by the retirements of the oldest and least efficient coal-fired power plants could result in an additional natural gas demand of 2 bcf/day. 95 Given the lack of environmentally and economically viable alternatives, a moderate increase in gas prices is unlikely to result in a large move away from natural gas, although increased costs will be transferred to customers. Natural gas consumption in the power sector has been considered economic at prices much higher than those resulting from LNG exports in even the highest price-impact projections. Even prior to the shale gas “revolution,” when natural gas prices were high, natural gas demand was increasing in the power sector. The EIA Annual Energy Outlook 2005— published in a year when average well head prices were over $7/MMBTU—projected that natural gas demand in the electricity sector would increase by 70 percent between 2003 and 2015. 96 Unlike the power sector, which continued to build natural-gas fired generation during a period of increasing gas prices, the industrial sector was negatively affected by growing natural gas import dependence, high gas prices, and gas price volatility. Between 2000 and 2005, the price of natural gas increased by 99 percent and LNG imports more than doubled. 97 By 2005, the ratio of the price of oil to the price of natural gas was approximately 6:1, just below the 7:1 oil-to-gas price ratio at which U.S. petrochemical and plastics producers are globally competitive. 98 That same year Alan Greenspan, then-Chairman of the Federal Reserve, noted that because of natural gas price increases “the North American gas-using industry [was] in a weakened competitive position.” 99 Since then the price of natural gas has collapsed. In 2011, the oil-to-natural gas price ratio was more than 24:1. In 2012 it has been even higher. The decline in natural gas prices has galvanized the industrial sector. A joint study by PwC and the National Association for Manufacturers, an industry trade group, found that the development of shale gas could save manufacturers as much as $11.6 billion per year in feedstock costs through 2025. 100 New investments in petrochemical and plastics producing facilities are occurring throughout the East and Southeast, largely predicated on the availability of inexpensive natural gas. Opponents of LNG exports contend that such investments would be deterred in the future as a result of increases in the price of natural gas. However, the evidence suggests that the competitive advantage of U.S. industrial producers relative to its competitors in Western Europe and Asia is not likely to be affected significantly by the projected increase in natural gas prices resulting from LNG exports. As European and many Asian petrochemical producers use oil-based products such as naphtha and fuel oil as feedstock, U.S. companies are more likely to enjoy a significant cost advantage over their overseas competitors. Even a one-third decline in the estimated price of crude oil in 2035 would result in an oil-to-gas ratio of 14:1. 101 There is also the potential for increased exports to help industrial consumers. Ethane, a liquid byproduct of natural gas production at several U.S. gas plays, is the primary feedstock of ethylene, a petrochemical product used to create a wide variety of products. According to a study by the American Chemistry Council, an industry trade body, a 25 percent increase in ethane production would yield a $32.8 billion increase in U.S. chemical production. By providing another market for cheap dry gas, LNG exports will encourage additional production of natural gas liquids (NGL) that are produced in association with dry gas. According to the EIA, ethane production increased by nearly 30 percent between 2009 and 2011 as natural gas production from shale started to grow substantially. Ethane production is now at an alltime high, with more than one million barrels per day of ethane being produced. 102 Increased gas production for exports results in increased production of such natural gas liquids, in which case exports can be seen as providing a benefit to the petrochemical industry. natural gas price volatility A major concern among domestic end users of natural gas is the possibility of an increase in natural gas price volatility resulting from an increase in U.S. LNG exports. As figure 8 demonstrates, the price volatility experienced during the 2000s was the highest the domestic gas market has experienced in the past three decades. The volatility of the natural gas market in the 2000s was largely caused by a tight supply-demand balance. Natural gas demand increased substantially as the U.S. economy grew and natural gas was viewed as environmentally preferable to coal for power generation. This increase in demand coincided with a reduction in domestic supply and an increased reliance on imports. The recent surge in U.S. natural gas production has resulted in less market volatility since 2010. According to EIA, the standard deviation of the price of natural gas (a general statistical indicator of volatility) between 2010 and 2011 was one-third what it was during the 2000s. 103 Potential exports of U.S. LNG concerns some domestic consumers for two principal reasons: greater volatility in domestic natural gas prices; and exposure of domestic natural gas prices to higher international prices resulting in a convergence between low U.S. prices and high international prices. There is an insufficient amount of data and quantitative research on the relationship between do mestic natural gas price volatility and LNG exports. However, certain characteristics of the LNG market are likely to limit volatility. LNG is bound by technical constraints: it must be liquefied and then transported on dedicated tankers before arriving at terminals where a regasification facility must be installed. Liquefaction facilities have capacity limits to how much gas they can turn into LNG. If they are operating at or close-to full capacity, such facilities will have a relatively constant demand for natural gas, therefore an international price or supply shock would have little impact on domestic gas prices. Moreover, unlike oil trading, in which an exporter—theoretically—sells each marginal barrel of production to the highest bidder in the global market, the capacity limit on LNG production and export means that LNG exporters have an infrastructure-limited demand for natural gas leaving the rest of the natural gas for domestic consumption. As most LNG infrastructure facilities are built on a project finance basis and underpinned by long-term contracts, this demand can be anticipated by the market years in advance, reducing the likelihood of volatility. The macroeconomy and jobs The macroeconomic and job implications of LNG exports depend on two principal factors: the gains from trade from exploiting pricing differentials and inefficiencies of the global market; and the employment implications of those gains, higher domestic natural gas prices, and greater domestic natural gas production. The Department of Energy has commissioned a study on both the macroeconomic and employment implications of U.S. LNG exports, which will be released later this year. This study will provide a qualitative assessment of the implications of LNG exports to the U.S. economy and employment. LNG exports are likely to be a net benefit to the U.S. economy, although probably not a significant contributor in terms of total U.S. GDP. Exports of U.S. natural gas will take advantage of the benefits of the existing producer’s surplus resulting from the pricing differentials between the natural gas markets in the United States, Europe, and Asia. Contractual terms will determine how this surplus is shared between U.S. sellers and foreign buyers. 104 The benefit of this trade will likely outweigh the cost to domestic consumers of the increase in the price of natural gas as most of the natural gas demanded by exports will come from new natural gas production as opposed to displacing existing production from domestic consumers. On the other hand, LNG exports from the United States are likely to put marginal upward pressure on the relative value of the U.S. dollar. In March 2012, Citigroup released a report on North American hydrocarbon production that included a model of the macroeconomic impact of U.S. oil and gas exports. The Citi analysis found that oil and gas exports would cause a nearly two percent decline in the current account deficit by 2020, but that the exchange rate implications would be modest. By 2020, the U.S. dollar would appreciate by between 1.6 and 5.4 percent. 105 The implications of LNG exports on job creation are similarly difficult to quantify. Other than temporary construction jobs created by the need to build liquefaction capacity, pipelines, and other ancillary infrastructure, the operation of the liquefaction facility will likely provide little permanent employment benefit. As outlined in the section on price impacts above, as much of the gas for export will come from new production, rather than the displacement of consumption in other sectors, the negative economic, and therefore jobrelated, effects on those sectors is likely to be limited. Beyond the labor required for additional gas production to satisfy LNG exports, the net impact of LNG exports is likely to be minimal. Further upstream, the job potential may be greater. By increasing domestic natural gas production, employment from additional oil and gas producers will increase, as will the demand for manufacturers of equipment for oil and gas production, gathering, and transportation. domestic energy security Aside from the price impact of potential U.S. LNG exports, a major concern among opponents is that such exports would diminish U.S. “energy security”; that exports would deny the United States of a strategically important resource. The extent to which such concerns are **valid** depends on several factors, including the size of the domestic resource base, and the liquidity and functionality of global trade. As Part I of this report notes, geological evidence suggests that the volumes of LNG export under consideration would not materially affect the availability of natural gas for the domestic market. Twenty years of LNG exports at the rate of 6 bcf/day, phased in over the course of 6 years, would increase demand by approximately 38 tcf. As presented in Part I, four existing estimates of total technically recoverable shale gas resources range from 687 tcf to 1,842 tcf; therefore, exporting 6 bcf/day of LNG over the course of twenty years would consume between 2 and 5.5 percent of total shale gas resources. While the estimates for **shale gas reserves are uncertain**, in a scenario where reserves are perceived to be lower than expected, domestic natural gas prices would increase and exports would almost immediately become uneconomic. In the long-term, it is possible that U.S. prices and international prices will converge to the point at which they settle at similar levels. In that case, the United States would have more than adequate import capacity (through bi-directional import/export facilities) to import gas when economic. A further gas-related consideration with regard to energy security is the effects of increased production of associated natural gas with the increasing volumes of U.S. unconventional oil. As the primary energy-security concern for the United States related to oil, the application of fracking and horizontal drilling in oil production is reducing U.S. oil import dependence, while simultaneously producing substantial volumes of natural gas, which, given the relative economics of oil and gas, is effectively delivered at zero (or, in the case of producers who have to invest in equipment to manage flaring and venting, negative) cost. To the extent that associated gas from unconventional oil production is used for LNG export, it can be seen as a consequence of—rather than a threat to—increased U.S. energy security. international implications The international implications of LNG exports from the United States can be divided into pricing, geopolitics, and environment. international Pricing As discussed in Part I, the global LNG market is informally separated into three markets: North America, the Atlantic Basin (mostly Europe), and the Pacific Basin (including Japan, South Korea, Taiwan, China, and India). These markets are separated because of important technical differences that impact the pricing structure for LNG in each market. The North American natural gas market is competitive and prices are traded in a transparent and open market. The Atlantic Basin is dominated by European LNG consumers such as the United Kingdom, Spain, France, and Italy, and is a hybrid of a competitive U.K. market that was liberalized in the mid-1990s and a Continental European market that is dominated by oil-linked, take-or-pay contracts. In recent years, the U.K. hub, the National Balancing Point (NBP), has traded at a premium to the U.S. hub, the Henry Hub. The Pacific Basin is a more rigid market that depends heavily on oilindexed contracts that are more expensive than those used in the Atlantic Basin. While they have no central trading hub, the Pacific Basin consumers such as Japan and South Korea (which is implementing its recently-signed free-trade agreement with the United States) currently import LNG based on a pricing formula known informally as the Japan Crude Cocktail, the average price of custom-cleared oil imports into Tokyo. Many Pacific Basin contracts have a built-in price floor and price ceiling depending on the price of oil. 106 Without exporting any natural gas, the U.S. shale gas “revolution” has already had a positive impact on the liquidity of global LNG markets. Many LNG cargoes that were previously destined for gas-thirsty U.S. markets were diverted and served spot demand in both the Atlantic and Pacific Basins. The increased availability of LNG cargoes has helped create a looser LNG market for other consumers (see figure 9). This in turn has helped apply downward pressure to the terms of oillinked contracts resulting in the renegotiation of some contracts, particularly in Europe. Increased availability of LNG cargoes also accelerated a recent trend of increasing reliance of consumers on spot LNG markets. In 2010 short-term and spot contracts represented 19 percent of the total LNG market, up from only a fraction one decade earlier. 107 In this case, increasing demand for spot cargoes indicates that consumers are taking advantage of spot prices that are lower than oilindexed rates. LNG exports will help to sustain market liquidity in what looks to be an increasingly tight LNG market beyond 2015 (see figure 10). Should LNG exports from the United States continue to be permitted, they will add to roughly 10 bcf/day of LNG that is expected to emerge from Australia between 2015 and 2020. Nevertheless, given the projected growth in demand for natural gas in China and India and assuming that some of Japan’s nuclear capacity remains offline, demand for natural gas will outpace the incremental supply. This makes U.S. LNG even more valuable on the international market. Although it will be important to global LNG markets, it is unlikely that the emergence of the United States as an exporter of LNG will change the existing pricing structure overnight. Not only is the market still largely dependent on long-term contracts, the overwhelming majority of new liquefaction capacity emerging in the next decade (largely from Australia) has already been contracted for at oil-indexed rates. 108 The incremental LNG volumes supplied by the United States at floating Henry Hub rates will be small in comparison. But while U.S. LNG will not have a transformational impact, by establishing an alternate lower price for LNG derived through a different market mechanism, U.S. exports may be central in catalyzing future changes in LNG contract structure. As previously mentioned, this impact is already be ing felt in Europe. A number of German utilities have either renegotiated contracts or are seeking arbitration with natural gas suppliers in Norway and Russia. The Atlantic Basin will be a more immediate beneficiary of U.S. LNG exports than the Pacific Basin as many European contracts allow for periodic revisions to the oil-price linkage. 109 In the Pacific Basin this contractual arrangement is not as common and most consumers are tied to their respective oil-linkage formulae for the duration of the contract. 110 Despite the increasing demand following the Fukushima nuclear accident, however, Japanese LNG consumers are actively pursuing new arrangements for LNG contracts. 111 There are other limits to the extent of the impact that U.S. LNG will have on global markets. It is unlikely that many of the LNG export facilities under consideration will reach final investment decision. Instead, it is more probable that U.S. natural gas prices will have rebounded sufficiently to the point that exports are not commercially viable beyond a certain threshold. (figure 11 illustrates the estimated costs of delivering LNG to Japan in 2020.) This threshold, expected by many experts to be roughly 6 bcf/day by 2025, is modest in comparison to the roughly 11 bcf/day of Australian LNG export projects that have reached final investment decision and are expected to be online by 2020. Also, the impact of U.S. LNG exports could be limited by a number of external factors that will have a larger bearing on the future of global LNG prices. For instance, a decision by the Japanese government to phase-out nuclear power would significantly tighten global LNG markets and probably displace any benefit provided by U.S. LNG exports. Conversely, successful and rapid development of China’s shale gas reserves would limit the demand of one of the world’s fastest-growing natural gas consumers. However, to the extent that U.S. LNG exports can help bring about a more globalized pricing structure, they will have economic and geopolitical consequences. Geopolitics A large increase in U.S. LNG exports would have the potential to increase U.S. foreign policy interests in both the Atlantic and Pacific basins. Unlike oil, natural gas has traditionally been an infrastructure-constrained business, giving geographical proximity and political relations between producers and consumers a high level of importance. Issues of “pipeline politics” have been most directly visible in Europe, which relies on Russia for around a third of its gas. Previous disputes between Moscow and Ukraine over pricing have led to major gas shortages in several E.U. countries in the winters (when demand is highest) of both 2006 and 2009. Further disagreements between Moscow and Kiev over the terms of the existing bilateral gas deal have the potential to escalate again, with negative consequences for E.U. consumers. The risk of high reliance on Russian gas has been a principal driver of European energy policy in recent decades. Among central and eastern European states, particularly those formerly aligned with the Soviet Union such as Poland, Hungary, and the Czech Republic, the issue of reliance on imports of Russian gas is a primary energy security concern and has inspired energy policies aimed at diversification of fuel sources for power generation. From the U.S. perspective such Russian influence in the affairs of these democratic nations is an impediment to efforts at political and economic reform. The market power of Gazprom, Russia’s state-owned gas monopoly, is evident in these countries. Although they are closer to Russia than other consumers of Russian gas in Western Europe, many countries in Eastern and Central Europe pay higher contract prices for their imports, as they are more reliant on Russian gas as a proportion of their energy mixes. In the larger economies of Western Europe, which consume most of Russia’s exports, there are efforts to diversify their supply of natural gas. The E.U. has formally acknowledged the need to put in place mechanisms to increase supply diversity. These include market liberalization approaches such as rules mandating third-party access to pipeline infrastructure (from which Gazprom is demanding exemption), and commitments to complete a single market for electricity and gas by 2014, and to ensure that no member country is isolated from electricity and gas grids by 2015. 112 Despite these formal efforts, there are several factors retarding the E.U.’s push for a unified effort to reduce dependence on Russian gas. National interest has been given a higher priority than collective, coordinated E.U. energy policy: the gas cutoffs in 2006 and 2009 probably contributed to the acceptance of the Nord Stream project, which carries gas from Russia into Germany. Germany’s decision to phase out its fleet of nuclear reactors by 2022 will result in far higher reliance on natural gas for the E.U.’s biggest economy. The environmental imperative to reduce carbon emissions—codified in the E.U.’s goal of essentially decarbonizing its power sector by the middle of century—mean that natural gas is being viewed by many as the short-to medium fuel of choice in power generation. Finally, the prospects for European countries to replicate the unconventional gas “revolution” that has resulted in a glut of natural gas in the United States look uncertain. Several countries, including France and the U.K., have encountered stiff public opposition to the techniques used in unconventional gas production, while those countries, such as Poland and Hungary, that have moved ahead with unconventional-gas exploration have generally seen disappointing early results. Collectively, these factors suggest that the prospects for reduced European reliance on Russian gas appear dim. The one factor that has been working to the advantage of advocates of greater European gas diversity has been the increased liquidity of the global LNG market, discussed above. Russia’s dominant position in the European gas market is being eroded by the increased availability of LNG. Qatar’s massive expansion in LNG production in 2008, coupled with the rise in unconventional gas production in the United States as well as a drop in global energy demand due to the global recession, produced a global LNG glut that saw many cargoes intended for the U.S. market diverted into Europe. As mentioned previously, with an abundant source of alternative supply, some European consumers, mainly Gazprom’s closest partners, were able to renegotiate their oil-linked, takeor-pay contracts with Gazprom. As figure 10 illustrates, however, in the wake of the Fukushima natural disaster and nuclear accident in Japan and a return to growth in most industrialized economies, the LNG market is projected to tighten considerably in the short-term, potentially returning market power to Russia. However, there is a second, structural change to the global gas market that may have more lasting effects to Russia’s market power in the European gas market. LNG is one of the fastest growing segments of the energy sector. The growth of the LNG market, both through long-term contract and spot-market sales, is likely to put increasing pressure on incumbent pipeline gas suppliers. A significant addition of U.S. LNG exports will accelerate this trend. In addition to adding to the size of the market, U.S. LNG contracts are likely to be determined on a “floating” basis, with sales terms tied to the price of a U.S. benchmark such as Henry Hub, eroding the power of providers of long-term oil linked contract suppliers such as Russia. While U.S. LNG will not be a direct tool of U.S. foreign policy—the destination of U.S. LNG will be determined according to the terms of individual contracts, the spot-price-determined demand, and the LNG traders that purchase such contracts—the addition of a large, market-based producer will indirectly serve to increase gas supply diversity in Europe, thereby providing European consumers with increased flexibility and market power. Increased LNG exports will provide similar assistance to strategic U.S. allies in the Pacific Basin. By adding supply volumes to the global LNG market, the U.S. will help Japan, Korea, India, and other import-dependent countries in South and East Asia to meet their energy needs. The desire on the part of Pacific Basin countries for the U.S. to become a gas supplier to the region has been underlined by the efforts of the Japanese government, which has attempted to secure a free-trade agreement waiver from the United States to allow exports. As with oil price-linked Russian gas contracts in Eu- rope, U.S. LNG exports linked to a floating Henry Hub benchmark, have the potential to weaken the market power of incumbent LNG providers to Asia, increasing the negotiating power of consumers and decreasing the price. As U.S. foreign policy undergoes a “pivot to Asia,” the ability of the U.S. to provide a degree of increased energy security and pricing relief to LNG importers in the region will be an important economic and strategic asset. Beyond the basin-specific considerations of U.S. LNG exports, they would provide a source of predictable natural gas supply that is relatively free from unexpected production or shipping disruption. With Qatar representing roughly one-third of the global LNG market, a blockade or military intervention in the Strait of Hormuz or a direct attack on Qatar’s liquefaction facilities by Iran would inflict chaos on world energy markets. While the United States government will be unable to physically divert LNG cargoes to specific markets or strategic allies that are most affected (gas allocation will be made by the market players), additional volumes of LNG on the world market will benefit all consumers. international Environmental implications Proposed LNG exports from the United States have encountered domestic opposition on environmental grounds. As outlined in Part I, natural gas production causes greenhouse gas emissions in the upstream production process through leakages, venting, and flaring. The greenhouse gas footprint of shale gas production has been the subject of vigorous debate, with some studies suggesting that methane from the production process leads to shale gas having a higher global warming impact than that of other hydrocarbons including coal. While the methodology underlying such studies has been widely criticized, there is no doubt that leakage and venting of natural gas is a serious negative environmental consequence of natural gas production and transportation: EPA has estimated that worldwide leakages and venting volumes were 3,353.5 bcf in 2010. 113 By contrast, some advocates of U.S. exports of LNG maintain that they have the potential to bring global environmental benefits if they are used to displace more carbon-intensive fuels. According to the IEA, natural gas in general has the potential to reduce carbon dioxide emissions by 740 million tonnes in 2035, nearly half of which could be achieved by the displacement of coal in China’s power-generation portfolio. Natural gas—in the form of LNG—also has the potential to displace more carbon-intensive fuels in other major energy users, including across the EU and in Japan, which is being forced to burn more coal and oil-based fuels to make up for the nuclear generation capacity lost in the wake of the Fukushima disaster. In addition to its relatively lower carbon-dioxide footprint, natural gas produces lower emissions of pollutants such as sulfur dioxide nitrogen oxide and other particulates than coal and oil. Natural gas—both in the form of LNG and compressed natural gas—is also being viewed as a potential replacement for oil in the vehicle transportation fleet, with large carbon dioxide abatement potential. 114 However, as discussed in Part I, even the United States with its low gas prices is unlikely to see any significant move toward natural gas vehicles in the absence of government policies; the prospects for such vehicles entering the European or Asian markets, where gas is several times as expensive, are remote. On the other hand, additional volumes of natural gas in the global power generation fleet may also have longer-term detrimental consequences for carbon emissions. According to the IEA, by backing out nuclear and renewable energy generation, natural gas could add 320Mt of carbon dioxide by 2035. 115 Whether U.S. LNG exports contribute to reduced carbon dioxide emissions through the displacement of coal fired power generation or to the crowding out of renewable and nuclear energy in the global energy mix is something of a moot point. According to the IEA, global power generation is projected to exceed 27,000 terawatt hours per year by 2020. 116 Even assuming U.S. exports of 6 bcf/day (on the upper end of the range of expectations), zero losses due to transportation, regasification, and transmission, and a high natural gas power plant efficiency level of 60 percent, such volumes would account for just over one percent of total global power generation. 117 Therefore, although the domestic environmental impacts associated with shale gas extraction may, pending the outcome of further study, prove to be a cause for concern with respect to greenhouse gas emissions, the potential for U.S. LNG exports to make a meaningful impact on global emissions through changes to the global power generation mix is negligible. T his paper has attempted to answer two questions: Are U.S. LNG exports feasible? If so, what are the implications of U.S. LNG exports? **For exports to be feasible, several demand and supply-related conditions need to be met**. On the supply side, adequate resources must be available and their production must be sustainable over the long-term. The regulatory and policy environment will need to accommodate natural gas production to ensure that the resources are developed. The capacity and infrastructure required to enable exports must also be in place. This includes the adequacy of the pipeline and storage network, the availability of shipping capacity, and the availability of equipment for production and qualified engineers. On the demand side, LNG exports will compete with two main other domestic end uses for natural gas: the power-generation sector, and the industrial and petrochemical sector. According to most projections, the U.S. electricity sector will see an increased demand for natural gas as it seeks to comply with policies and regulations aimed at reducing carbon-dioxide emissions and pollutants from the power-generation fleet. Cheaper natural gas in the industrial sector has the potential to lower the cost of petrochemical production and to improve the competitiveness of a range of refining and manufacturing operations. Advocates of natural gas usage in the transportation fleet – particularly in heavy-duty vehicles (HDVs) – see it as a way to decrease the country’s dependence on oil, although absent major policy support, this sector is unlikely to represent a significant source of gas demand. For increased U.S. LNG exports to be feasible, they will also need to be competitive with supplies from other sources. The major demand centers that would import U.S. LNG would be Pacific Basin consumers (Japan, South Korea, and Taiwan, and increasingly China and India), and Atlantic Basin consumers, mostly in Europe. The supply and demand balance in the Atlantic and Pacific Basins and, therefore the feasibility for natural gas exports from the United States, depend heavily on the uncertain outlook for international unconventional natural gas production. Recent assessments in countries such as China, India, Ukraine, and Poland indicate that each country has significant domestic shale gas reserves. If these reserves are developed effectively—which is likely to be difficult in the short-term due to a lack of infrastructure, physical capacity, and human capacity—many of these countries would dramatically decrease their import dependence, with negative implications for existing and newcomer LNG exporters. Detailed analysis of the foregoing factors suggests that the exportation of liquefied natural gas from the United States is logistically feasible. Based on current knowledge, the domestic U.S. natural gas resource base is large enough to accommodate the potential increased demand for natural gas from the electricity sector, the industrial sector, the residential and commercial sectors, the transportation sector, and exporters of LNG. Other obstacles to production, including infrastructure, investment, environmental concerns, and human capacity, are likely to be surmountable. Moreover, the current and projected supply and demand fundamentals of the international LNG market are conducive to competitive U.S.-sourced LNG. While LNG exports may be practically feasible, they will be subject to approval by policy makers if they are to happen. In making a determination on the advisability of exports, the federal government will focus on the likely implications of LNG exports: i.e. whether LNG exports are in the “public interest.” The extent of the domestic implications is largely dependent upon the price impact of exports on domestic natural gas prices. While it is clear that domestic natural gas prices will increase if natural gas is exported, most existing analyses indicate that the implications of this price increase are likely to be modest.

#### Nuclear power puts downward pressure on natural gas prices – that makes exports politically viable

Perry 12 (Mark J., Scholar – AEI, Professor of Economics and Finance – University of Michigan, “Natural gas and nuclear power need to share the lead in power generation for the future,” American Enterprise Institute, 9-26, http://www.aei.org/article/natural-gas-and-nuclear-power-need-to-share-the-lead-in-power-generation-for-the-future/)

Recent advances in drilling technologies have unleashed a boom in domestic natural gas production. The United States may have more than 100 years' worth of gas reserves, and perhaps much more, including large untapped resources in Michigan. Policy makers are increasingly looking to natural gas as the locomotive of economic growth. A striking example is the increasing use of gas in electricity production. For the last several years, natural gas has accounted for more than 80% of new electric generating capacity in the United States. It now provides 32% of total electricity generation, up from 25% just two years ago, and its share could reach 50% by 2030. Natural gas, of course, has many virtues as a fuel. Its carbon content is less than half that of coal and it emits no mercury or other toxic particulates. But natural gas is needed for **much more than electricity generation**. In addition to residential and commercial heating, gas accounts for the bulk of the fuel used by the petrochemical industry. Manufacturing relies on the availability of cheap gas, and its use in transportation is increasing. Additionally, gas producers are **gearing up to export some of the gas to markets in Europe and Asia**, where gas costs up to five times more than it does in the United States. A dozen or more U.S. companies have applied for licenses to export liquefied natural gas from terminals, mainly on the Gulf of Mexico. Because of its multiple uses and rising popularity, the demand for natural gas is starting to increase, and its price could rise significantly. That is a real possibility, and would be consistent with its long history of price volatility. If we hope to maintain the security of our energy supply, we will need to expand the use of other energy sources, including nuclear power, which is also environmentally attractive and affordable. Although the capital cost of building a nuclear plant is high, the average price of nuclear-generated electricity is **lower than** power produced from **natural gas**. In 2011, the production cost of nuclear power was 2.19 cents per kilowatt-hour, compared to 4.51 cents for natural gas and 3.23 cents for coal. Today about 20% of America’s electricity comes from nuclear power. But demand for electricity is growing steadily and that trend will continue in the future. Without building new nuclear plants, pressure will build to use even more natural gas for electricity generation, making less available for manufacturing and transportation.

#### Natural gas demand is closely monitored – perception of the plan triggers the link

Burnes et al 12-7 (John, Lisa Epifani, Curt Moffatt, Janna Chesno, Partner – VanNess Feldman, “DOE Releases LNG Export Study and Requests Public Comment,” VanNess Feldman, 2012, http://www.vnf.com/news-alerts-778.html)

Exports of natural gas, including LNG, must be authorized by DOE’s Office of Fossil Energy. By statute, exports of LNG to FTA nations must be approved “without modification or delay”. By contrast, before approving an application to export LNG to non-FTA nations, DOE must determine that the export is and will remain in the “public interest”. DOE’s primary focus is upon the domestic need for the gas to be exported. In May 2011, DOE conditionally authorized Sabine Pass Liquefaction, LLC (Sabine Pass) to export LNG to non-FTA nations. The authorization was finalized in August 2012. This remains the only long-term DOE authorization to export LNG from the lower 48 states to non-FTA nations. In the Sabine Pass order, DOE determined that it had a continuing duty to protect the public interest, and announced that it would monitor gas supply/demand conditions in the United States and the world to ensure that the cumulative impacts of the exports authorized in the order and in future orders would not lead to a reduction in the supply of natural gas needed to meet essential domestic needs. DOE also provided notice that it would take any action in the future, including amending or even revoking export authorizations, as appropriate or necessary to protect the public interest.

#### Plan kills Russia’s economy

Mead 12

Walter Russell Mead, April 25, 2012 (Professor of Foreign Affairs and Humanities at Bard College, Henry A. Kissinger senior fellow for U.S. foreign policy at the Council on Foreign Relations (CFR), and Editor-at-Large of The American Interest magazine), , The American Interest, North American Shale Gas Gives Russia Serious Headache, <http://blogs.the-american-interest.com/wrm/2012/04/25/north-american-shale-gas-gives-russia-serious-headache/>

North America’s shale gas boom is chipping away at the market for gas producers like Russia. What’s more, if the United States becomes a gas exporter, Russia’s customers (especially in Europe) could decide to cancel expensive contracts with Gazprom in favor of cheaper American natural gas. “If the US starts exporting LNG to Europe and Asia, it gives [customers there] an argument to renegotiate their prices with Gazprom and Qatar, and they will do it,” says Jean Abiteboul, head of Cheniere supply & marketing. Gazprom supplied 27 percent of Europe’s natural gas in 2011. While American gas is trading below $2 per MMBTU (million British thermal units), Gazprom’s prices are tied to crude oil markets, and its long-term contracts charge customers roughly $13 per MMBTU, says the *FT*. European customers would love to reduce their dependence on Gazprom and start to import American gas. Already Gazprom has had to make concessions to its three biggest customers, and others are increasingly dissatisfied with their contracts. Worse, from Russia’s point of view: evidence that western and central Europe contain substantial shale gas reserves of their own. Fracking is unpopular in thickly populated, eco-friendly Europe, but so are high gas prices. All this ought to give Russia serious heartburn. Eroding Gazprom’s dominance of the European energy market would be a major check on Russian economic growth and political influence.

**Goes nuclear and turns case**

**Filger 9** (Sheldon, Columnist and Founder – Global EconomicCrisis.com, “Russian Economy Faces Disasterous Free Fall Contraction”, <http://www.huffingtonpost.com/sheldon-filger/russian-economy-faces-dis_b_201147.html>)

In Russia, historically, economic health and political stability are intertwined to a degree that is rarely encountered in other major industrialized economies. It was the economic stagnation of the former Soviet Union that led to its political downfall. Similarly, Medvedev and Putin, both intimately acquainted with their nation's history, are unquestionably alarmed at the prospect that Russia's economic crisis will endanger the nation's political stability, achieved at great cost after years of chaos following the demise of the Soviet Union. Already, strikes and protests are occurring among rank and file workers facing unemployment or non-payment of their salaries. Recent polling demonstrates that the once supreme popularity ratings of Putin and Medvedev are eroding rapidly. Beyond the political elites are the financial oligarchs, who have been forced to deleverage, even unloading their yachts and executive jets in a desperate attempt to raise cash. Should the Russian economy deteriorate to the point where economic collapse is not out of the question, the impact will go far beyond the obvious accelerant such an outcome would be for the Global Economic Crisis. There is a geopolitical dimension that is even more relevant then the economic context. Despite its economic vulnerabilities and perceived decline from superpower status, Russia remains one of only two nations on earth with a nuclear arsenal of sufficient scope and capability to destroy the world as we know it. For that reason, it is not only President Medvedev and Prime Minister Putin who will be lying awake at nights over the prospect that a national economic crisis can transform itself into a virulent and destabilizing social and political upheaval. It just may be possible that U.S. President Barack Obama's national security team has already briefed him about the consequences of a major economic meltdown in Russia for the peace of the world. After all, the most recent national intelligence estimates put out by the U.S. intelligence community have already concluded that the Global Economic Crisis represents the greatest national security threat to the United States, due to its facilitating political instability in the world. During the years Boris Yeltsin ruled Russia, security forces responsible for guarding the nation's nuclear arsenal went without pay for months at a time, leading to fears that desperate personnel would illicitly sell nuclear weapons to terrorist organizations. If the current economic crisis in Russia were to deteriorate much further, how secure would the Russian nuclear arsenal remain? It may be that the financial impact of the Global Economic Crisis is its least dangerous consequence.

### 1NC

#### Text: The United States federal government should fully fund a program to cover 4.8% of the surface of the Earth’s oceans in a monolayer of latex particles bearing a conventional stabilization system that is inactivated in salt water.

#### Solves warming, it’s cheap, and avoids all solvency deficits associated with traditional ocean albedo modifications

Morgan 11 **–** PhD in physical chemistry, runs R&D programmes at a Sydney startup company, research experience in chemical engineering in the US and at the Commonwealth Scientific and Industrial Research Organisation, Australia’s national science agency (John, 10/8. "Low intensity geoengineering – microbubbles and microspheres," <http://bravenewclimate.com/2011/10/08/low-intensity-geoengineering-microbubbles-and-microspheres/)>

Is there another way to look at this? The Achilles heel of the hydrosol approach is the short bubble lifetime. But are there other ways to brighten water? Are there any other micron sized light scattering particles cheaply available in prodigious quantities, which float in water and don’t dissolve? It turns out the answer is yes. Synthetic latex is produced on a huge scale – 1010 kg in 2005. A latex is a dispersion of polymer microspheres in water (Figure 5). The particle size is typically around 0.1 – 0.5 μm. The polymer content is high – about 50% by weight. And its cheap – a bit over a dollar per kilo wet. It looks like a bright white opaque liquid, like wood glue, which is a polyvinylacetate latex. Its a bulk commodity used in adhesives, paper coatings, paint and many other applications. Lets run the numbers on this and ask, what would it take to reverse current warming? First we need to know how much light these particles scatter back to space. I used Mie theory to analyse scattering of 500 nm wavelength light (roughly the solar peak) from 0.1 μm diameter polystyrene spheres, as if the sun were overhead. The back scattering from these very small particles is intense – 42% of overhead light returns to space. And this is just direct scattering. Some of the light that scatters forward will scatter off a second particle, and a third. Multiple scattering will see more than 42% of light returned to space. Since these particles attach to the surface, lets consider, for the moment, a monolayer on the water surface. This requires 1014 particles per square metre, with a volume of 5.2×10-8 m3 per m2 (or 5 parts per billion of the top 10 m, for comparison with Seitz’ figures). Polystyrene has a density of 1050 kg m-3, so that’s a mass of 55 mg m-2. Over 3.16×1014 m2 of ocean that’s 1.7×1010 kg polymer. What would this do to the earth’s energy balance? Average insolation (accounting for cloud cover [Jin et al. 2002, cited by Seitz]) is 239 Wm-2. The monolayer cross sectional area fraction is pi/4. So the energy returned by direct overhead scattering is about 78 W. That’s huge compared to the current CO2 forcing of about 2.25 Wm-2. Modelling reported by Seitz indicates an increase of ocean albedo of 0.05 translates to an increase of planetary albedo by 0.031 [Seitz 2010; Figure 5]. So I’ll assume planetary albedo increase is 60% of the ocean albedo increase, which means we need ocean backscattering of 3.75 Wm-2. **We would only need 4.8% of a monolayer to offset current CO2 forcing** (ignoring the contribution from multiple scattering). 4.8% of a whole ocean monolayer is 8.3×108 kg of dry polymer, or about 1.7×109 kg wet latex. At say $1.20 per kg, this would cost $2.0 billion and account for 17% of 2005 global production capacity. This is, surprisingly, well within reach. **$2.0b to reverse global warming is cheap.** Restricting dispersal to the mid latitudes where the greatest effect is achieved, using core-shell latex technology, and properly accounting for multiple scattering would see this cost drop even further. Annual growth in latex production grew organically by 4.5% per annum between 2000-2005. Ramping production by 17% would be completely feasible. The ongoing cost depends on the residence time of the particles at the ocean surface. Equatorial currents run at about 1 ms-1, which would imply a traversal time of about 1 year for the Pacific ocean. Mid latitude the currents are much slower. The latex particles themselves will degrade in the environment, and there will be losses by association and entrainment in a complex marine environment. But let’s provisionally estimate a cost of $2b per year. This is significantly cheaper than, say, stratospheric sulfur aerosol injection which is estimated at $25-50b per year, let alone space sunshades. And it doesn’t require exotic engineering, enabling R&D, or orbital launches – it uses existing materials at a rate well inside existing production capacity. Conclusion So consider this final elaboration of Russell Seitz’ bright idea: 0.1 µm diameter latex particles, possibly hollow, or of core-shell morphology, bearing a conventional stabilization system that is inactivated in salt water ensuring that the particles are retained at and near the surface, are produced in bulk using about 17% of existing production capacity and using commercial recipes, and are sprayed onto the sea from tanks aboard ships or crop dusting aircraft, oil rigs, and other structures, in the mid latitudes. **For a cost in the order of a mere $2b per year we could offset current global warming,** subject to the many disclaimers and qualifications discussed above, and many others not mentioned. More limited, local applications, such as the direct cooling of coral reefs as envisaged by Seitz for the microbubble concept, are also possible.

#### Geoengineering not controversial—it’s gaining in popularity, can avoid unpopular emissions legislation and cheap

Bullis 09 (Kevin Bullis, MIT Technology Review’s senior editor for energy, Nov. 6, 2009, “U.S. Congress Considers Geoengineering,” <http://www.technologyreview.com/view/416187/us-congress-considers-geoengineering/>

The idea that we might be able to “geoengineer” the planet to purposefully change the climate has clearly moved from the fringes into the mainstream. Momentum has been building in recent years: an essay in an academic journal by a Nobel Prize winning scientist in 2006, articles in the Wall Street Journal and Foreign Policy, a largely private gathering of researchers at Harvard.¶ Recently things have really broken out. In addition to multiple articles and books in the popular media, the United Kingdom’s Royal Society, the authoritative national academy of science there, issued an in-depth review of geoengineering and President Obama’s science advisor, John Holdren, has repeatedly stated that geoengineering must be on the table as a possible approach to addressing climate change.¶ Yesterday, the House of Representatives’ Committee on Science and Technology held a hearing that its chairman, Bart Gordon (D-TN), said was, “the first time that a congressional committee has undertaken a serious review of proposals for climate engineering.”¶ Gordon was quick to say that this doesn’t mean he supported geoengineering, and that the consensus at the hearing seemed to be that no one should deploy geoengineering until we’ve done a lot more research. But the very fact of the hearing confirmed that influential people are starting to take geoengineering very seriously. It’s no longer just a subject for gee-whiz fascination, with science-fiction-like scenarios such a vast parasol launched into space to shield the earth from the sun. Now scientists are formulating detailed research plans, start-ups are inventing new geoengineering technologies, and politicians and foreign policy experts are considering what all of this might mean for international relations.¶ So, why the sudden enthusiasm for proposals to tinker with the climate? These ideas aren’t new, but until recently they’ve been largely kept under wraps while attention has been focused on reducing greenhouse gas emissions. There are probably three main reasons for the change. First, some view geoengineering as a cheap way to avoid costly conversions to zero-emissions technology, a potential technological fix that could help them stave off climate legislation. With geoengineering as an option, they argue, there’s less of a rush. We’ll just cool the planet until we can get around to switching to cleaner forms of energy.¶ But this could be mind-blowingly stupid. One of the most popular geoengineering approaches–shading the earth with a haze of sulfate particles in the upper atmosphere–would very likely lead to severe droughts. There are other potential side effects, but a purposeful act that causes the failure of crops for potentially hundreds of millions or billions of people could also lead to international conflict. Even geoengineering enthusiasts have admitted there’s a chance of war.¶ The second reason why geoengineering is getting a serious hearing is that scientists are growing increasingly concerned that, even if we commit to drastically cutting emissions, we’ve already waited too long. By the time we actually reduce emissions, enough greenhouse gases will have accumulated to cause serious climate disasters. We may need geoengineering, then, in addition to fast cuts in emissions.¶ The third reason is that geoengineering is cheap, so cheap that a wealthy individual could do it. There’s growing concern that unless we develop a science-based international consensus about the real dangers of geoengineering, someone will go off and do it on their own.

### Warming/Case

Can’t solve – multiple preconditions that aren’t in place for thorium to compete

Kawa, 12/19/12 – writer for BusinessInsider (Lucas, “There's One Big Obstacle To US Development Of Thorium.” http://www.businessinsider.com/how-natural-gas-is-crowding-out-thorium-2012-12)

Last week Norway joined India, China, and others in testing thorium, regarded by some as the energy source of the future.

Gary Krellenstein is one of those people. This former JP Morgan Energy and Environment Director penned a report calling thorium “The Best, Most Overlooked Solution to Global Warming and Long-Term Energy Supply.”

He’s quick to trumpet the benefits of thorium, especially compared to uranium (most of which we’ve discussed before) but also provides a perspective on some of thorium’s disadvantages, which include:

High capital costs ($4000-$10,000/kW)

Little existing infrastructure, no commercially operating plants

Long lead times (estimated at over 10 years) and licensing issues

The bad reputation of nuclear energy, due to meltdowns at Chernobyl and Fukushima

But these aren’t the definitive factors that have prevented thorium’s proliferation – Krellenstein has a very direct answer for what’s keeping thorium on the sidelines:

The natural gas revolution.

Krellenstein claims that advances in fracking technology gives the U.S. another 100 years of domestic natural gas reserves, under current demand. Moreover, the price is expected to stay under $5/million cubic feet through 2022.

His conclusion:

Thorium power technology cannot economically compete with electricity generated by gas so long as NG prices remain in the $3-$6 per mmbtu price range.

Simply, investors (who don't care about societal benefits of thorium) have to go for the best possible return on their principal. Krellenstein develops the argument that this means choosing natural gas – for now:

Gas plants can be build more quickly and are cheaper than nuclear plants

Natural gas has less harmful emissions than other fossil fuels

Alternative energy sources are too expensive and unreliable

He doesn’t see contamination caused by fracking as a threat to natural gas production, stating that it “appears to be a problem only where the shale is near the water aquifer, and there is no shortage of deep shale deposits.”

But, in his opinion, there's only so long before we transition to thorium. Here's a list the preconditions Krellenstein thinks are necessary for thorium to thrive:

Stricter regulations regarding greenhouse gases

Tests which demonstrate its viability

Investment grade credit ratings in order to finance the project

Price guarantees from contractors

Public knowledge of the benefits of thorium

A stronger global economy

#### Thorium doesn’t solve the problems with nuclear

**Makhijani, 12** – president of the Institute for Energy and Environmental Research (Arjun, 5/4. “Is Thorium A Magic Bullet For Our Energy Problems?” Interview with Ira Flatow, Richard Martin. http://www.npr.org/2012/05/04/152026805/is-thorium-a-magic-bullet-for-our-energy-problems)

FLATOW: Not everyone sees thorium reactors as cheap, clean and safe alternatives, that - as a bet for the future. With me is Dr. Arjun Makhijani. He is president of the Institute for Energy and Environmental Research. He's here in our D.C. studios. Do you agree with Richard Martin that we missed out on thorium? If we had started out with thorium, would be in better shape now? ARJUN MAKHIJANI: I don't think so. I think the problems of nuclear power, fundamentally, would remain. The safety problems would be different. I mean, Mr. Martin and proponents of thorium are right in the sense that the liquid fuel reactor has a number of safety advantages, but it also has a number of disadvantages. For instance, this breeder reactor lost out with the sodium-cooled breeder, in the incident that Mr. Martin mentioned, because the liquid - the molten sodium reactor, the sodium-cooled reactor has a much better breeding ratio. It produces a lot more excess fuel that you can then take to the next reactor. In this reactor, because thorium is not a fissile material, you actually need either plutonium or enriched uranium to start it. In fact, this reactor that operated in Oak Ridge for a few years, it actually started up in 1964, it never used thorium to breed uranium-233. Some uranium-233 was put into the reactor at one point, but it had been made in another reactor. It hadn't been made in that reactor. It operated with enriched uranium, some plutonium and some uranium-233, but not made in that reactor. So what are the problems? The problem is that with this particular reactor, most people will want a reprocessing, that is separating the fissile material on-site. so you have a continuous flow of molten salt out of the reactor. You take out the protactinium-233, which is a precursor of uranium, and then you put the uranium back in the reactor, and then you keep it going. But if you look at the Princeton University paper on thorium reactors from a few years ago, you'll see that this onsite reprocessing allows you to separate protactinium altogether. Now, the U.S. wouldn't do it, but if you were a county without nuclear materials and had a reprocessing plant right there, you'd separate the protactinium-233, you'd get pure uranium-233, which is easier to make bombs with than plutonium. I can read you the quote from the Princeton University paper, but I won't bother. FLATOW: So you're saying that it doesn't solve the safety issues. MAKHIJANI: It doesn't solve the proliferation problem. It doesn't solve the waste problem, either. So every nuclear reactor, no matter what type, creates fission products, which are highly radioactive materials, some short-lived, some long-lived, to make energy. With the present reactors, we create about a ton per reactor, per year. If you have a more efficient reactor, at least you will create half a ton, probably eight-tenths of a ton, nine-tenths of a ton. This is highly radioactive waste. If you look at Oak Ridge's current evaluation, they say you have to condition this waste, you have to convert the fluorides, and then you have to have a deep geologic repository. What's in this waste? Cesium-137 and strontium-190, hundreds of years, just like today's reactors. Cesium-135 and iodine-129, millions of years half-life. Technetium-99, 200,000 years. Now, Mr. Martin says that you don't have to worry about Technetium-99 because it's used in medical practice on millions of people. Now, Technetium-99 is radioactive, and it's used not because it's risk-free, but because there's some need that balances off the risk according to the doctor, gives some benefit to the person. Technetium-99, like other radioactive materials, inside your body, creates a cancer risk. So you ask: Well, how much cancer risk does medical use of radiation in the United States create every year? If you use National Academy's coefficients for cancer risk, the answer would be about 90,000 cancers.

#### Nuclear doesn’t solve warming –

#### A) Not cost-competitive and can’t produce enough hydrogen

Ahearne et al, 12 – adjunct scholar for Resources for the Future and an adjunct professor of engineering at Duke University (John F, February. Federation of American Scientists. “The Future of Nuclear Power in the United States.” http://www.fas.org/pubs/\_docs/Nuclear\_Energy\_Report-lowres.pdf)

In response to mitigating climate change, many countries will ﬁnd that nuclear power is neither the least-cost nor the quickest approach to reducing carbon dioxide emissions.1 Until nuclear energy is able to produce hydrogen or process heat, or until transportation sectors are electriﬁed, nuclear energy’s potential contribution to reducing carbon dioxide emissions will be somewhat limited.

#### B) Takes too long and can’t reduce emissions

**Madsen and Dutzik, 9** – Policy Analyst at Frontier Group and senior policy analyst with Frontier Group (Travis and Tony, November. With Bernadette Del Chiaro and Rob Sargent of the Environment America Research & Policy Center. “Generating Failure: How Building Nuclear Power Plants Would Set America Back in the Race Against Global Warming.” http://www.environmentamerica.org/sites/environment/files/reports/Generating-Failure---Environment-America---Web\_0.pdf)

Building 100 new nuclear reactors would happen too slowly to reduce global warming pollution in the near-term, and would actually increase the scale of emission cuts required in the future. At best, the nuclear industry could have a new reactor up and running by 2016, assuming that construction could be completed in four years. This pace would be faster than 80 to 95 percent of all reactors completed during the last wave of reactor construction in the United States. 70 If construction follows historical patterns, it could take nine years after a license is issued before the first reactor is up and running – into the 2020s. Under this very plausible scenario, new nuclear power could make no contribution toward reducing U.S. emissions of global warming pollution by 2020 – despite the investment of hundreds of billions of dollars for the construction of nuclear power plants. And even if the industry completed 100 new reactors by 2030, which is highly unlikely, these reactors would reduce cumulative power plant emissions of carbon dioxide over the next two decades by only 12 percent below business as usual, when a reduction of more than 70 percent is called for. In other words, 100 new nuclear reactors would be too little, too late to successfully meet our goals for limiting the severity of global warming.

#### C) Transportation outweighs

**Gordon, 10** – nonresident senior associate in Carnegie’s Energy and Climate Program, where her research focuses on climate, energy, and transportation issues in the United States and China (Deborah, December. “The Role of Transportation in Driving Climate Disruption.” http://carnegieendowment.org/files/transport\_climate\_disruption.pdf)

Climate impacts differ by sector. On-road transportation has the greatest negative effect on climate, especially in the short term. This is primarily because of two factors unique to on-road transportation: (1) nearly exclusive use of petroleum fuels, the combustion of which results in high levels of the principal warming gases (carbon dioxide, ozone, and black carbon); and (2) minimal emissions of sulfates, aerosols, and organic carbon from on-road transportation sources to counterbalance warming with cooling effects. Scientists find that cutting on-road transportation climate and air-pollutant emissions would be unambiguously good for the climate (and public health) in the near term. Transportation’s role in climate change is especially problematic, given the dependence on oil that characterizes this sector today. There are too few immediate mobility and fuel options in the United States beyond oil-fueled cars and trucks. U.S. and international policy makers have yet to tackle transportationclimate challenges. In its fourth assessment report, the Intergovernmental Panel on Climate Change (IPCC) found that the global transportation sector was responsible for the most rapid growth in direct greenhouse gas emissions, a 120 percent increase between 1970 and 2004. To further complicate matters, the IPCC projects that, without policy intervention, the rapidly growing global transportation sector has little motivation to change the way it operates, because consumer choices are trumping best practices. Herein lies a fundamental mismatch between the climate problem and solutions: transportation is responsible for nearly one of every three tons of greenhouse gas emissions but represents less than one of every twelve tons of projected emission reductions. Clearly this sector is a major contributor to climate change; therefore, it should be the focus of new policies to mitigate warming. Government must lead this effort as the market alone cannot precipitate the transition away from cars and oil, which dominate this sector.

#### Warming is irreversible

ANI, 10 (“IPCC has underestimated climate-change impacts, say scientists”, 3-20, One India, http://news.oneindia.in/2010/03/20/ipcchas-underestimated-climate-change-impacts-sayscientis.html)

According to Charles H. Greene, Cornell professor of Earth and atmospheric science, "Even if all man-made greenhouse gas emissions were stopped tomorrow and carbon-dioxide levels stabilized at today's concentration, by the end of this century, the global average temperature would increase by about 4.3 degrees Fahrenheit, or about 2.4 degrees centigrade above pre-industrial levels, which is significantly above the level which scientists and policy makers agree is a threshold for dangerous climate change." "Of course, greenhouse gas emissions will not stop tomorrow, so the actual temperature increase will likely be significantly larger, resulting in potentially catastrophic impacts to society unless other steps are taken to reduce the Earth's temperature," he added. "Furthermore, while the oceans have slowed the amount of warming we would otherwise have seen for the level of greenhouse gases in the atmosphere, the ocean's thermal inertia will also slow the cooling we experience once we finally reduce our greenhouse gas emissions," he said. This means that the temperature rise we see this century will be largely irreversible for the next thousand years. "Reducing greenhouse gas emissions alone is unlikely to mitigate the risks of dangerous climate change," said Green.

#### Long timeframe and adaptation solves

Robert O. Mendelsohn 9, the Edwin Weyerhaeuser Davis Professor, Yale School of Forestry and Environmental Studies, Yale University, June 2009, “Climate Change and Economic Growth,” online: http://www.growthcommission.org/storage/cgdev/documents/gcwp060web.pdf

The heart of the debate about climate change comes from a number of warnings from scientists and others that give the impression that human-induced climate change is an immediate threat to society (IPCC 2007a,b; Stern 2006). Millions of people might be vulnerable to health effects (IPCC 2007b), crop production might fall in the low latitudes (IPCC 2007b), water supplies might dwindle (IPCC 2007b), precipitation might fall in arid regions (IPCC 2007b), extreme events will grow exponentially (Stern 2006), and between 20–30 percent of species will risk extinction (IPCC 2007b). Even worse, there may be catastrophic events such as the melting of Greenland or Antarctic ice sheets causing severe sea level rise, which would inundate hundreds of millions of people (Dasgupta et al. 2009). Proponents argue there is no time to waste. Unless greenhouse gases are cut dramatically today, economic growth and well‐being may be at risk (Stern 2006).

These statements are largely alarmist and misleading. Although climate change is a serious problem that deserves attention, society’s immediate behavior has an extremely low probability of leading to catastrophic consequences. The science and economics of climate change is quite clear that emissions over the next few decades will lead to only mild consequences. The severe impacts predicted by alarmists require a century (or two in the case of Stern 2006) of no mitigation. Many of the predicted impacts assume there will be no or little adaptation. The net economic impacts from climate change over the next 50 years will be small regardless. Most of the more severe impacts will take more than a century or even a millennium to unfold and many of these “potential” impacts will never occur because people will adapt. It is not at all apparent that immediate and dramatic policies need to be developed to thwart long‐range climate risks. What is needed are long‐run balanced responses.

#### Tickell literally knows nothing about global warming

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

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

#### Financial incentives lock in inefficiency – kills competition

Loris, 11 – analyst at The Heritage Foundation (Nick, May. “Stop Picking Energy Winners and Losers with the Tax Code.” http://[www.heritage.org/research/commentary/2011/05/stop-picking-energy-winners-and-losers-with-the-tax-code](http://www.heritage.org/research/commentary/2011/05/stop-picking-energy-winners-and-losers-with-the-tax-code))

First, special tax credits for cherry-picked technologies artificially reduce the price for consumers. This makes them seem far more competitive than they actually are. Rather than increase competition, the artificial market distortion gives these technologies an unfair price advantage over other technologies. The more concentrated the subsidy or preferential treatment, the worse the policy is because the crowding-out effect for other technologies is larger. If subsidized technologies are market viable, then the tax break merely offsets private-sector costs for investments that would have been made either way. This creates industry complacency and perpetuates economic inefficiency by disconnecting market success from production costs. Furthermore, when the government becomes involved in the decision-making process, it increases the business incentive to send lobbyists to Capitol Hill to make their pitch why their industry needs those tax credits. Industries will plead that they need five years of tax credits then they’ll be good to go on their own. Five years later, they’re asking for five more years. These specific carve outs reduce the incentive for producers to be cost competitive with technologies that do not rely on help from the government.

#### Status quo solves – emissions are declining

Levi 9-25 (Michael, David M. Rubenstein Senior Fellow for Energy and the Environment – CFR, “Why Have U.S. Carbon Dioxide Emissions Plummeted?,” Council on Foreign Relations, 2012, http://blogs.cfr.org/levi/2012/09/25/why-have-u-s-carbon-dioxide-emissions-plummeted/)

U.S. carbon dioxide emissions for January-May are down six percent from 2011 to 2012. Headlines have highlighted the fact that emissions from January-March hit a twenty year low. What explains the shift? That question has been the subject of intense debate. John Hanger argues that 77 percent of that decline can be attributed to the shift from coal to gas. The folks over at CO2Scorecard, looking at January-March data, put that number at a more modest 21 percent. These are drastically different figures. What number should we believe? Part of the discrepancy comes from looking at different time periods. January-March emissions were affected more by the warm winter than April-May ones were. That makes sense because January-March is part of the winter. April-May emissions were affected more by rock bottom natural gas prices than January-March ones were. That makes sense because it was April-May when rock bottom (i.e. sub-two-dollars wellhead) natural gas prices prevailed. Let’s focus on the full January-May span, since it’s now the longest period for which we have 2011 and 2012 data, and do the analysis for ourselves. First the basics: Carbon dioxide emissions fell from 2,303 metric tons (Mt) in 2011 to 2,158 Mt in 2012, a drop of 145 Mt. (To keep things simple, the January-May time period is implicit in all this.) The basic story is that emissions from coal consumption plummeted by 132 Mt. Falling oil emissions chipped in another 18 Mt. Natural gas emissions were nearly flat; they were actually down 5 Mt. This would seem to suggest that natural gas played little role in falling emissions. Instead, it appears to suggest, reduced demand for coal is what did the trick. This’s roughly the intuition behind the conclusion from CO2Scorecard that natural gas has played a modest role in the U.S. emissions decline. Hanger contests this by making three basic points. First, he notes, “about 85% (132 of 144 million tons) of the 2012 U.S. Carbon emission decline is a product of falling emissions from coal.” Second, he argues, the decline in emissions from coal are “almost entirely as a result of more gas displacing coal generation this year. Indeed, coal’s electricity generation market share fell from 42% for all of 2011 to 32% in April and 34% in May.” Third, he observes, “Electricity demand is down 2% in the first 5 months of 2012 compared to 2011 so that is a small reason for declining emissions and probably explains about 10% of the 132 million ton decline of coal emissions.” Hanger puts these together with a few other estimates to come to his conclusion that 77 percent of the emissions decline is due to gas.

#### -- No extinction

Easterbrook 3 (Gregg, Senior Fellow – New Republic, “We’re All Gonna Die!”, Wired Magazine, July, http://www.wired.com/wired/archive/11.07/doomsday.html?pg=1&topic=&topic\_set=)

If we're talking about doomsday - the end of human civilization - many scenarios simply don't measure up. A single nuclear bomb ignited by terrorists, for example, would be awful beyond words, but life would go on. People and machines might converge in ways that you and I would find ghastly, but from the standpoint of the future, they would probably represent an adaptation. Environmental collapse might make parts of the globe unpleasant, but considering that the biosphere has survived ice ages, it **wouldn't be the final curtain**. Depression, which has become 10 times more prevalent in Western nations in the postwar era, might grow so widespread that vast numbers of people would refuse to get out of bed, a possibility that Petranek suggested in a doomsday talk at the Technology Entertainment Design conference in 2002. But Marcel Proust, as miserable as he was, wrote Remembrance of Things Past while lying in bed.

#### -- Environment is resilient

Easterbrook 95 (Gregg, Distinguished Fellow – Fullbright Foundation, A Moment on Earth, p. 25)

In the aftermath of events such as Love Canal or the Exxon Valdez oil spill, every reference to the environment is prefaced with the adjective "fragile." "Fragile environment" has become a welded phrase of the modern lexicon, like "aging hippie" or "fugitive financier." But the notion of a fragile environment is profoundly wrong. Individual animals, plants, and people are distressingly fragile. **The environment** that contains them **is** close to **indestructible**. The living environment of Earth has survived ice ages; bombardments of cosmic radiation more deadly than atomic fallout; solar radiation more powerful than the worst-case projection for ozone depletion; thousand-year periods of intense volcanism releasing global air pollution far worse than that made by any factory; reversals of the planet's magnetic poles; the rearrangement of continents; transformation of plains into mountain ranges and of seas into plains; fluctuations of ocean currents and the jet stream; 300-foot vacillations in sea levels; shortening and lengthening of the seasons caused by shifts in the planetary axis; collisions of asteroids and comets bearing far more force than man's nuclear arsenals; and the years without summer that followed these impacts. Yet hearts beat on, and petals unfold still. Were the environment fragile it would have expired many eons before the advent of the industrial affronts of the dreaming ape. **Human assaults** on the environment, though mischievous, **are** **pinpricks** compared to forces of the magnitude nature is **accustomed to resisting**.

#### Marginal losses don’t erode ecosystem resilience

Sagoff ‘8 (Mark, Senior Research Scholar @ Institute for Philosophy and Public Policy @ School of Public Policy @ U. Maryland, Environmental Values, “On the Economic Value of Ecosystem Services”, 17:2, 239-257, EBSCO)

What about the economic value of biodiversity? Biodiversity represents natureʼs greatest largess or excess since species appear nearly as numerous as the stars except that ʻscientists have a better understanding of how many stars there are in the galaxy than how many species there are on Earthʼ.41 The ʻnextʼ or ʻincrementalʼ thousand species taken at random would not fetch a market price because another thousand are immediately available, and another thousand after that. No one has suggested an economic application, moreover, for any of the thousand species in the USA listed as threatened.42 To defend the ʻmarginalʼ value of biodiversity on economic grounds is to trade convincing spiritual, aesthetic and ethical arguments for bogus, pretextual and disingenuous economic ones.43 As David Ehrenfeld has written, We do not know how many [plant] species are needed to keep the planet green and healthy, but it seems very unlikely to be anywhere near the more than quarter of a million we have now. Even a mighty dominant like the American chestnut, extending over half a continent, all but disappeared without bringing the eastern deciduous forest down with it. And if we turn to the invertebrates, the source of nearly all biological diversity, what biologist is willing to find a value – conventional or ecological – for all 600,000-plus species of beetles?44 The disappearance in the wild even of agriculturally useful species appears to have no effect on production. The last wild aurochs, the progenitor of dairy and beef cattle, went extinct in Poland in 1742, yet no one believes the beef industry is threatened. The genetic material of crop species is contained in tens of thousands of landraces and cultivars in use – rice is an example – and does not depend on the persistence of wild ancestral types. Genetic engineering can introduce DNA from virtually any species into virtually any other – which allows for the unlimited creation of biodiversity. A neighbour of mine has collected about 4,000 different species of insects on his two-acre property in Silver Spring, Maryland. These include 500 kinds of Lepidoptera (mostly moths) – half the number another entomologist found at his residence.45 When you factor in plants and animals the amount of ʻbackyard biodiversityʼ in suburbs is astounding and far greater than you can imagine.46 Biodiversity generates no price ʻat the marginʼ because nature provides far more of it than anyone could possibly administer. If one kind of moth flies off, you can easily attract hundreds of others. The price of a building lot in suburban Maryland, where I live, is a function of its proximity to good schools and to Washington, DC. The thousands of kinds of insects, weeds, microbes, etc. that nature lavishes on the typical suburban lot do not increase its price. No one wants to invest to see if any of these creatures contains a cancer-curing drug, although a raccoon in my attic did test positive for rabies.47 No one thinks that property values are a function of biodiversity; no one could suppose that a scarcity of critters looms that might create a competitive advantage for housing lots that are more generously endowed with deer, opossums, muskrats, raccoons, birds or beavers. (A neighbour who has a swimming pool plays unwilling summer host to a beaver who at night jumps off the diving board into the pool, swims around, and jumps again.) An astronomical variety of biodiversity is thrown in with every acre zoned for residential use. Buy an acre or two, and an immense amount of biodiversity is yours for nothing.

# 2NC

### 2NC CP Solves Warming

#### CP solves warming and conserves water

**Kintisch, 10** – Editor, ScienceInsider, AAAS, citing Russell Seitz, research physicist at Harvard University, associate of Harvard University's Center for International Affairs (Eli, 3/26. “Could Tiny Bubbles Cool the Planet?” American Association for the Advancement of Science, <http://news.sciencemag.org/sciencenow/2010/03/could-tiny-bubbles-cool-the-plan.html>)

In an effort to curb global warming, scientists have proposed everything from launching sunlight-blocking dust into the stratosphere to boosting the number of carbon-sucking algae in the oceans. Now, a Harvard University physicist has come up with a new way to cool parts of the planet: pump vast swarms of tiny bubbles into the sea to increase its reflectivity and lower water temperatures. “Since water covers most of the earth, don’t dim the sun,” says the scientist, Russell Seitz, speaking from an international meeting on geoengineering research here. “Brighten the water.” Natural bubbles already brighten turbulent seas and provide a luster known as “undershine” below the ocean’s surface. But these bubbles only lightly brighten the planet, contributing less than one-tenth of 1% of Earth’s reflectivity, or albedo. What Seitz imagines is pumping even smaller bubbles, about one-five-hundredth of a millimeter in diameter, into the sea. Such "microbubbles" are essentially "mirrors made of air," says Seitz, and they might be created off boats by using devices that mix water supercharged with compressed air into swirling jets of water. “I’m emulating a natural ocean phenomenon and amplifying it just by changing the physics—the ingredients remain the same." Computer simulations show that tiny bubbles could have a profound cooling effect. Using a model that simulates how light, water, and air interact, Seitz found that microbubbles could double the reflectivity of water at a concentration of only one part per million by volume. When Seitz plugged that data into a climate model, he found that the microbubble strategy could cool the planet by up to 3°C. He has submitted a paper on the concept he calls “Bright Water" to the journal Climatic Change. In addition to helping curb global warming, the microbubble strategy could also help conserve water by reducing evaporation in rivers and lakes, says Seitz. That’s a problem that leads to the loss of billions of tons of freshwater each year in California alone.

#### Current capabilities prove it’s feasible

**Seitz, 11** – research physicist at Harvard University, associate of Harvard University's Center for International Affairs (Russell, April. “Bright water: hydrosols, water conservation and climate change,” Climatic Change (April 2011) 105: 365–381, springerlink)

As to the practicalities of microbubble generation and dispersion, significant advantage could be taken of the existing fleet of ocean-going vessels, of which >10 4 are at sea on any given day. Vortex entrainment of air produces microbubbles more efficiently than wave breaking (Hwang et al. 1989), and shipboard compressors developed to reduce hull drag and fuel consumption by releasing macrobubbles (Kato 1999; Graham-Rove 2008) might also supply microbubble generators to provide hydrosols to amplify wake reflectance at sea (Gordon 1985; Zhang et al. 2004). With conventional wakes extending kilometers astern, the thousands of oil-fueled ships normally underway globally might brighten some 10 5 to 10 7 km2 of ocean, to offset both the decrease in planetary albedo produced by the black carbon they emit (Seitz 1986, 1991), and the radiative forcing from the ∼10 9 tonnes of CO2 per year marine transportation currently releases (Buhaug et al. 2009). As an example of a potential application that would take advantage of the ability to create localized effects, bubble-generating ships might be deployed to lower sea surface temperatures by en echelon release of wake microbubbles along tropical storm tracks. Such an approach to reducing tropical cyclone intensity would also likely require less infrastructure, mass, and energy investment than proposals to use wave motion to sink warm surface water that involve gigatonne-scale mass transport (Morton 2009).

### Impact Overview – 2NC

#### And- It’s most likely scenario for nuclear war and causes US draw in

Steven **David**, Professor of Political Science, Johns Hopkins University, “Saving America From the Coming Civil Wars,” FOREIGN AFFAIRS, v 78 n 1, Jan/Feb **1999**, LN.

Only three countries, in fact, meet both criteria: Mexico, Saudi Arabia, and Russia. Civil conflict in Mexico would produce waves of disorder that would spill into the United States, endangering the lives of hundreds of thousands of Americans, destroying a valuable export market, and sending a torrent of refugees northward. A rebellion in Saudi Arabia could destroy its ability to export oil, the oil on which the industrialized world depends. And internal war in Russia could devastate Europe and trigger the use of nuclear weapons. Of course, civil war in a cluster of other states could seriously harm American interests. These countries include Indonesia, Venezuela, the Philippines, Egypt, Turkey, Israel, and China. In none, however, are the stakes as high or the threat of war as imminent.

#### Plus it’s the Only existential risk

Nick **Bostrom** (PhD Philosophy – Oxford U) **2002** Existential Risks, http://www.nickbostrom.com/existential/risks.html)

A much greater existential risk emerged with the build-up of nuclear arsenals in the US and the USSR. An all-out nuclear war was a possibility with both a substantial probability and with consequences that *might* have been persistent enough to qualify as global and terminal. There was a real worry among those best acquainted with the information available at the time that a nuclear Armageddon would occur and that it might annihilate our species or permanently destroy human civilization.[4]  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.

### Exports Bad – Warming

#### Exports cause methane leaks – makes warming irreversible

**Romm 11** (Joe, Senior Fellow at American Progress, editor of Climate Progress, assistant secretary of energy for energy efficiency and renewable energy in 1997, Ph.D. in physics from MIT, “Natural Gas Bombshell: Switching From Coal to Gas Increases Warming for Decades, Has Minimal Benefit Even in 2100,” 9-9-11 <http://thinkprogress.org/climate/2011/09/09/315845/natural-gas-switching-from-coal-to-gas-increases-warming-for-decades/>)

A key finding of the NCAR study is: In summary, our results show that the substitution of gas for coal as an energy source results **in increased** rather than decreased **global warming** for many decades — out to the mid 22nd century for the 10% leakage case. This is in accord with Hayhoe et al. (2002) and with the less well established claims of Howarth et al. (2011) who base their analysis on Global Warming Potentials rather than direct modeling of the climate…. The most important result, however, in accord with the above authors, is that, unless leakage rates for new methane can be kept below 2%, substituting gas for coal is not an effective means for reducing the magnitude of future climate change. What is the leakage rate for methane? Well, as I’ve written, we don’t know exactly because the gas companies won’t release all of their data. We do know that total life-cycle leakage and fugitive emissions from extraction, production, transport, and consumption is higher for shale gas than conventional gas. The controversial — but peer-reviewed — paper by Cornell’s Robert Howarth, which I wrote about here, seeks to quantify the impact of the leakage from the **best available data**. It **concluded**: Natural gas is composed largely of methane, and 3.6% to 7.9% of the methane from shale-gas production escapes to the atmosphere in venting and leaks over the life-time of a well. These methane emissions are at least 30% more than and perhaps more than twice as great as those from conventional gas. The higher emissions from shale gas occur at the time wells are hydraulically fractured — as methane escapes from flow-back return fluids — and during drill out following the fracturing. Methane is a **powerful greenhouse gas**, with a global warming potential that is far greater than that of carbon dioxide, particularly over the time horizon of the first few decades following emission.

### Exports Bad – Turns Renewables/Modeling

#### Exports cause international adoption of natural gas – that crowds out renewables

Simmons 12 (Bradford, Editor-in-Chief, “The Editor's Monthly Memo: The Staggering Implications of the U.S. Natural Gas Market,” International Affairs Review, 8-12, http://www.iar-gwu.org/node/429)

At home, a cautious, yet supportive approach to LNG exports would have ancillary benefits as well. With coal plants retiring every year and the declining economic viability of nuclear power, natural gas is well positioned to vastly expand its 30 percent share of electricity production. While this will translate into lower utility bills for U.S. consumers, it also raises the specter of overreliance. If natural gas exceeds a 50 percent share of power generation, any source disruptions or sudden price fluctuations would have a calamitous economic impact. Furthermore, such cheap gas could potentially crowd out other promising sources of energy, such as renewables. Though natural gas fired plants produce roughly half the carbon of a coal plant and have contributed to an overall reduction in emissions in the United States, a recent International Energy Administration report reveals that a shift to gas generated electricity will not prove sufficient to significantly alter current climate change scenarios.

### Turns Warming

**Disad turns Warming –**

**1. CCS**

**A. Low Prices destroy it**

**Inman 12** (Mason, reporter for National Geographic, specializes in reporting climate change and energy, “Shale Gas: A Boon That Could Stunt Alternatives, Study Says,” 1-7-12, <http://news.nationalgeographic.com/news/energy/2012/01/120117-shale-gas-boom-impact-on-renewables/>)

Shale gas has transformed the U.S. energy landscape in the past several years—but it may **crowd out** renewable energy and other ways of cutting greenhouse gas (GHG) emissions, a new study warns. A team of researchers at **M**assachusetts **I**nstitute of **T**echnology used economic modeling to show that new abundant natural gas is likely to have a far more complex impact on the energy scene than is generally assumed. If climate policy continues to play out in the United States with a relatively weak set of measures to **control emissions**, the new gas source will lead to lower gas and electricity prices, and total energy use will be **higher** in 2050. Absent the shale supply, the United States could have expected to see GHG emissions 2 percent below 2005 levels by 2050 under this relatively weak policy. But the **lower gas prices** under the current shale gas outlook will stimulate economic growth, leading GHG emissions to increase by 13 percent over 2005. And the shale gas will retard the growth of **renewable energy**'s share of electricity, and push off the development of **carbon capture and storage** technology, needed to meet more ambitious policy targets, by as long as two decades. "Shale gas is a great advantage to the U.S. in the short term, for the next few decades," said MIT economist Henry Jacoby, lead author of the new study. "But it is so attractive that it threatens other energy sources we ultimately will need."

**B. CCS Key to solve warming**

**Guzman 9** (Doris de Guzman, ICIS – world’s largest petrochemical market information provider, “Capturing carbon's potential”, 1/15, <http://www.icis.com/Articles/2009/01/15/9184929/chemicals-to-capture-ccs-potential.html>)

CARBON CAPTURE and sequestration (CCS) technology might still be at an experimental and development stage, but several companies, including those in the chemical industry, are lining up to take advantage of its opportunities. The Intergovernmental Panel on Climate Change (IPCC), which provides climate-change information, identified CCS as the most promising technology for the **rapid reduction** of global emissions. Carbon dioxide (CO2 ) is said to be capturable in significant quantities from five main pollution sources, namely ammonia production power generation from fossil fuels industrial production facilities, such as cement, coal-to-chemicals, and steel plants energy processing, such as coal and gas-to-liquids operations and well heads at gas fields. The IPCC estimated that CCS can reduce global emissions **by up to 55%** by 2100, according to Graeme Sweeney, executive vice president of future fuels and CO2 at Anglo-Dutch oil and chemical major Shell. "Major volumes of oil, gas and coal are still needed to meet rising global demand for energy in the coming decades. Left unmitigated, the cumulative global carbon footprint will be **dire for** people and **the planet**. Only CCS has the potential to cut the resulting CO2 emissions at the **speed and scale** required," says Sweeney. The Paris, France-based International Energy Agency (IEA) reported in its Energy Technology Perspectives 2008 report that CCS would need to contribute nearly one-fifth of the necessary emissions reductions to reduce global greenhouse gas emissions by 50% by 2050 if its cost is reasonable. "CCS is therefore essential to the achievement of deep emission cuts," said Nobuo Tanaka, IEA director, in a recent statement. "If we do not successfully demonstrate CCS soon, it will raise costs significantly for other climate-mitigation options."

### U – No Exports – A2: Some Exports Now

#### Current exports are limited to 4 million which doesn’t affect the market

Dlouhy 1-28 (Jennifer A., covers energy policy and other issues for The Houston Chronicle, “Shell, El Paso Pipeline Partners plan LNG export facility,” Fuel Fix, 2013, http://fuelfix.com/blog/2013/01/28/shell-kinder-morgan-to-build-lng-export-facility/)

Shell and El Paso Pipeline Partners on Monday announced plans to jointly build a plant for exporting natural gas, marking the latest venture aiming to take advantage of high Asian and European prices for the fossil fuel. Under the deal, Shell will team up with El Paso’s Southern Liquefaction Company to convert the existing Elba Island LNG import terminal near Savannah, Ga., so it can also liquefy and export the fossil fuel. “This announcement underscores how the abundance of natural gas in the U.S. is changing the energy landscape,” said Shell Oil Co. President Marvin Odum in a statement. “With a measured, phased approach, exports of cleaner-burning natural gas can help meet the world’s rising energy needs while also giving a boost to the U.S. economy.” But the companies’ plans **depend on the approval of regulators at the Energy Department**, which is tasked with reviewing more than a dozen applications to export 22.6 billion cubic feet of natural gas per day to countries that do not have a free trade agreement with the United States. Southern, which is a Kinder Morgan company and a unit of El Paso Pipeline Partners, already has won the Energy Department’s approval to export up to 4 million metric tons of natural gas annually from the Elba Island terminal over the next quarter century to nations that have free-trade agreements with the U.S. But the natural gas market in those countries is **relatively small**, especially compared with the potential to sell natural gas to consumers in Japan, Thailand and other nations hungry for an alternative to nuclear power. That’s why Southern and Shell also are seeking a license to export up to 0.5 billion cubic feet per day to countries that don’t have free-trade accords with the U.S. The Elba Island LNG terminal, built in 1978, still is importing some natural gas, which is offloaded from tankers as a liquid and regassified at the Savannah, Ga., facility. But a glut of domestic natural gas, harvested using horizontal drilling and hydraulic fracturing, has upended the market for the fossil fuel. Depending on approvals from the Federal Energy Regulatory Commission and other agencies, construction could begin on new liquefaction facilities at the plant by 2015 and it could be ready to launch exports “a few years” later, said El Paso spokesman Richard Wheatley Wheatley said the company has applied for FERC review of the project, which would be divided over two phases, with the first eventually enabling exports of up to 210 million cubic feet per day of natural gas. Wheatley declined to comment on the cost of the new facility, which is set to be detailed in regulatory filings with the SEC later this week. Once the deal is finalized, El Paso Pipeline Partners is set to own 51 percent of the new entity created with Shell and will operate the export facility. Shell would own the remaining 49 percent and claim all of the facility’s liquefaction capacity. Although the Energy Department has already approved one LNG export license, for Houston-based Cheniere Energy, analysts generally do not expect any more decisions on pending permit applications until the second half of this year. First, the Energy Department will finish reviewing a study released in December that concluded the U.S. could claim up to $47 billion in new economic activity even if exports were unchecked. Some LNG export foes, including Sen. Ron Wyden, D-Ore., have called on the Energy Department to redo the report, saying it unfairly relied on old data about domestic natural gas demand. The Energy Department has signaled it will consider LNG export license applications individually, probably on a first-come, first-served basis. Southern’s August application puts it 11th on the long list of companies vying for licenses. Still, there is a chance **the Energy Department will reshuffle the order**.

#### Exports will happen, just a question of how much – squo exports are limited

Kennedy 1-25 (Will, U.S. to Cap LNG Exports to Boost Economy, Shell’s Voser Says, Bloomber, 2013, http://www.bloomberg.com/news/2013-01-25/u-s-will-cap-lng-shipments-to-boost-economy-shell-s-voser-says.html)

The U.S. won’t rival Qatar and Australia as the world’s largest liquefied natural gas exporter as it keeps fuel at home to drive an industrial renaissance, Royal Dutch Shell Plc (RDSA) Chief Executive Officer Peter Voser said. The U.S. may export 50 metric million tons a year of LNG by the end of the decade, or about 10 percent of the projected world market, Voser said today in a Bloomberg TV interview in Davos, Switzerland. That’s below the 120 million tons a year he said is predicted by some forecasters and less than Qatar’s current annual production of 77 million tons. Australia is projected to pass Qatar by the end of the decade. 6:51 “Exports will happen,” said Voser, 54, whose company is the world’s largest LNG supplier. “But I hope that the U.S. will actually keep most of the gas back because it will help them to industrialize parts of the U.S. more.”

### Nuclear Power – 2NC

#### No turns – nuclear removes the floor under natural gas prices

ISA 12 (iStockAnalyst, “Weak Nuclear Power Output Should Support U.S. Natural Gas Prices,” 11-29, http://www.istockanalyst.com/finance/story/6165585/weak-nuclear-power-output-should-support-u-s-natural-gas-prices)

U.S. natural gas sold off sharply in recent days, driven mostly by warmer weather forecasts. Bloomberg: - Gas dropped as much as 3.8 percent as forecasters including MDA Weather Services predicted above-normal temperatures for most of the lower 48 states over the next 10 days. Unusually cold weather helped reduce a supply glut this month. The December contract expires today. "The weather is moderating so it's wearing a little bit on the market," said Tom Saal, senior vice president of energy trading at INTL Hencorp Futures LLC in Miami. "We've got an expiring contract today, that could be part of it." The declines however should be **limited due to reduced nuclear power generation**. A large number of nuclear plants have been down unexpectedly and it may take time to bring them online. US nuclear generation is materially below normal for this time of the year, which should provide a floor to natural gas prices.

#### Natural gas prices are rising BECAUSE nuclear power is declining – the plan reverses that

Prezioso 12 (Jeanine, “REFILE-Storm-closed US nuclear power plants may boost natgas use,” Reuters, 10-31, http://www.reuters.com/article/2012/10/31/sandy-natgas-demand-idUSL1E8LV3UF20121031)

As the U.S. Northeast begins its recovery from Hurricane Sandy and power is slowly restored, natural gas may be one market that benefits. The much-touted cleaner-burning fuel could be a replacement for nuclear power generation, which faces the highest level of outages since spring 2011. Massive flooding and electric grid outages from the storm caused three U.S. nuclear reactors totaling 2,800 megawatts (MWs) to shut. Those reactors and others that had already been offline could face longer inspections to check equipment following the storm. The United States last year initiated closer scrutiny of U.S. nuclear plants and their safety features following the earthquake, tsunami and subsequent flooding in Japan that caused a nuclear plant meltdown there. That lost nuclear power would likely be replaced incrementally with gas-fired electricity, **boosting demand for the fuel**. "If you reduce that demand, you could see a significant reliance on gas, especially in the east where coal generation isn't all that profitable anymore," said Eric Bickel, commodity analyst with Summit Energy in Louisville, Kentucky. Sandy hit during a month when many nuclear reactors were offline for scheduled maintenance anyway. But since March 2011, when the massive earthquake followed by a tsunami caused flooding and a meltdown at Tokyo Electric Power Co's Fukushima Daiichi nuclear plant, the world's nuclear power regulators have taken more precautions. "That's been an influential factor since that happened. You do have more stringent safety precautions now and you want to make sure everything is sound before you embark on putting them back online," said Bickel. SHORT TERM DEMAND LOSS On the flip side, Sandy has created a short-term vexing problem for an already oversupplied natural gas market: less immediate demand for the fuel and a short-term drop in prices until winter. The lack of power demand translates to a decrease in natural gas usage of about 1 billion cubic feet per day (bcfd), analysts said, which could generate about 5,000 MWs of electricity. At its peak, Sandy's fierce wind created tumultuous storm surges along the east coast that flooded power stations, caused transformers to explode and knocked out electricity to more than 8 million homes and businesses. The loss of that electricity usage may lessen demand for natural gas-generated power. Electric heat is not common in the Northeast, but gas heat for homes is. More than half of U.S. homes use gas as a heating fuel in winter, which is fast approaching, another factor that will increase demand.

#### Nuclear power crowds out natural gas demand – makes exports viable

Patel 12 (Simit – Metals and Energy Investor, “Cheap Natural Gas Won't Destroy The Nuclear Power Industry”, 4/12, http://seekingalpha.com/article/494121-cheap-natural-gas-won-t-destroy-the-nuclear-power-industry)

The other part of the equation here is nuclear power. How will nuclear power, which is also baseload and emission-free, be impacted by cheap natural gas? Certainly, I think cheap natural gas slows down the case for nuclear. It should still be noted, though, that because of the unrivalled energy density of nuclear power, it will ultimately **prove to be cheaper and more scalable** than any other energy source out there. Density is the primary consideration when evaluating the quality of energy sources, and nuclear remains king. Another consideration with natural gas is that while prices are currently cheap, **there is no guarantee that prices will stay this way**. With nuclear, prices are very predictable. The primary cost of nuclear power is an upfront fee, as the marginal fuel costs are very small. Natural gas prices have been very low before, and, in fact, they were low right after the Three Mile Island nuclear accident in 1979. The uncertainty of natural gas prices, and the fact that such prices will significantly impact energy prices derived from natural gas plants, make a strong case for diversifying into other energy sources. And with emissions regulations (for better or worse) becoming more common and with peak oil here, the case for diversification into nuclear remains strong. It should also be noted that demand for energy has been fairly constant over the past few years due to greater energy efficiency and a global depression borne out of a sovereign debt crisis - but such depressed demand is unlikely to remain. The U.S. Energy Information Administration (EIA) released a report in September of 2011 which projects that world energy use will increase 53% from 2008 to 2035. The report, International Energy Outlook 2011, says China and India will account for half of the projected increase. In this regard it is especially important to note that both China and India remain committed to nuclear power. Indeed, I think this is a simple guideline for investors in the nuclear power sector keep an eye out for. So long as China and India are interested in nuclear power, demand can go higher. The remarkably cheap prices for natural gas may slow down the nuclear renaissance, but it won't stop it. I believe that patient investors, those willing to wait up to a decade, will be rewarded accordingly. I did once believe that the end of the Megatons to Megawatts program could lead to a sharp and imminent rise in uranium prices for nuclear fuel. I'm a little less confident in that view, as I think cheap natural gas prices could make the situation less urgent and create some other options in the short-term. But as energy demand goes back up, and as the market as a whole continues to rise due to aggressive inflationary monetary policy from the world's central banks, natural gas prices will follow - and **the case for nuclear power will remain strong.**

### Non-FTA Impact – Australia 2NC

#### Exports to non-FTA countries are key – they’re the biggest buyers – jacks Russia and Australia economy

Chambers 1-14 (Matt, “LNG exports at risk as US stakes claim,” Australian, 2013, http://www.theaustralian.com.au/business/mining-energy/lng-exports-at-risk-as-us-stakes-claim/story-e6frg9df-1226553137492)

AUSTRALIA will be the biggest loser among liquefied natural gas exporters if US LNG production takes off in a **meaningful way**, with more exports displaced than any other nation because of the high costs of building new projects. The finding, in a Deloitte report commissioned by US LNG proponent Cheniere Energy, comes as global engineering contractor KBR -- a leader in West Australian projects -- says work on US LNG projects is starting to grow as work in Australia dwindles because of surging costs. If a substantial amount of US LNG is exported to Asia, it could displace the equivalent of one $20 billion project in Australia, the Deloitte report on the global impact of US LNG exports says. US exports, which are being made economic by a shale gas glut, would also weigh on LNG prices. "Australian LNG exports to Asia and Russian exports to Europe look particularly vulnerable, given their projected large volume of exports and high cost to markets they serve," the report, entitled Exporting the American Renaissance and released in the US last week, says. "The largest LNG source that is displaced is Australian LNG." KBR chief executive William Utt said price hikes in Australia meant opportunities for his company were falling. "I do have some concerns about how fast are they going to move forward on additional projects in Australia," Mr Utt told investors in the US on Friday. "Relative to a year ago, it has become much stronger for KBR in North America relative to international. We've seen significant growth on an absolute basis in North America and probably a little bit of diminution in the prospects we have internationally, largely with Africa, Australia." In Australia, the issue has been high costs, while in Africa the early stage of the industry is making things tough. "We think the market will continue to move forward and grow for LNG projects in both the US Gulf Coast and British Columbia," Mr Utt said. KBR worked on Chevron's Gorgon project and Woodside's Pluto project and has submitted a front end engineering and design (FEED) study for the Woodside-led Browse LNG project. The study and the KBR comments come after US major Chevron -- the biggest spender on Australian LNG -- last month took charge of a Canadian project, known as Kitimat, just after pushing back the timetable for an expansion of the Gorgon LNG project and adding $9bn to the expected cost of the now $52bn foundation project. The Deloitte study, without making forecasts of US LNG volumes, measures the effects that 47 million tonnes a year of US LNG would have on global trade. This is less than half the amount of export capacity on the drawing board in the US but is in line with estimates by energy giant Shell and represents exports from just four projects. If those US exports go to Asia, about 19 per cent of the volumes, or 9 million tonnes, would be made up of LNG that otherwise would have come from Australia, Deloitte says. The 9 million tonnes a year of potentially displaced Australian LNG production would be the same amount as the $US20bn Australia Pacific LNG project at Gladstone being built by Origin Energy and Conoco Phillips is aiming to produce. If the US exports go to Europe, that number would drop to about 4 million tonnes. The upper estimate is about 10 per cent of Australia's projected LNG exports. To date, only one US project has been given the right to sell LNG to nations that do not have free trade agreements with the US. There is debate about the number of projects that should be allowed to export to non-FTA countries, **which include the leading LNG buyers**. Opposition is coming from those who want to keep US domestic gas cheap to spur manufacturing.

#### That’s key to Australia’s economy

Energy Quest 9 (advisory firm focused on energy analysis strategy, "Australia’s Natural Gas Markets: Connecting with the World," http://www.aer.gov.au/sites/default/files/EnergyQuest%20essay%C3%A2%E2%82%AC%E2%80%9DAustralia's%20natural%20gas%20markets.pdf)

Australia is becoming a gas supplier of international significance on the back of its rapidly expanding resource base. It is now among the top 10 nations in terms of gas reserves and resources—with over 200 000 PJ—and in the next decade will likely become a major international producer. A significant driver has been gas price expectations. The Australian experience shows gas supply is highly price elastic. Rising price expectations are encouraging major investment in exploration and infrastructure. The development of LNG will potentially benefit Australia’s terms of trade, **economic growth** and employment. A significant benefit may be the **buffer** that LNG can provide against our declining oil production. Australia is relatively oil intensive by international standards. 24 Crude oil is Australia’s largest import, followed by refined petroleum products. 25 Australia’s self-sufficiency in oil and liquid fuels is 60 per cent and likely to decline further. This dependence exposes the economy to the risk of rising oil prices—something to which it has been relatively immune since the discovery of oil in the 1950s.

#### Australian economic collapse destroys ANZUS and relations with the U.S.

Lyon and Tow 3 (Rod, IR – U Queensland and William, Prof IR – U Queensland, The Future of the Australian-U.S. Security Relationship, http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB50.pdf)

Some Australian officials also speak of Australia’s continuing impressive economic growth as an important determinant of a larger strategic role. As the Australian economy continues to show good growth figures over a long period, when many of the world’s major economies have been stagnant, it has offered Australian policymakers both a larger sense of Australia’s role in the world and the resources necessary to underpin an expanded role. The Australian intervention in East Timor in 1999 constituted a harbinger of that larger role; in the post-September 11 world an expansive policy of Australian global and regional engagement―in Afghanistan, Iraq, and the Solomon Islands―is even more evident.

[Continues…]

The Australian defense budget might still have some upside in it, but it must reflect the overall health of the Australian economy. Defense spending as a percentage of gross domestic product (GDP) is still low, in part because the defense increases outlined and approved in the 2000 White Paper have been affordable from GDP growth. But the government is cautious about any dramatic longterm increase in defense spending, uncertain of the actual level of public support during a decade when the nation’s “baby boomers” will be starting to move into retirement and impose higher costs on welfare budget items.

[Continues…]

Australia’s overall strategic policy direction bodes well for the future of ANZUS. Its shift from a concentric circles posture to one reflecting a more balanced approach between global and regional contingencies, many of which involve asymmetrical threats, is compatible with the U.S. force structure reorientation toward fighting more low intensity conflicts against hostile nonstate actors and occasional mid-to-high intensity conflicts against “rogue states” or other anti-Western forces.45 Australia’s new proactive defense identity in Southeast Asia and the South Pacific and, even more centrally, its willingness to participate in American-led military coalitions even without UN support, correlate directly with traditional American concerns about allied loyalty and defense burden-sharing. Latent policy hazards such as leadership disillusionment or economic pressures could yet create future ANZUS crises. Over the nearterm, however, such developments appear unlikely as the nature of currently emerging threats predicate closer rather than qualified security cooperation among the world’s developed states and as Australia endeavors to reconcile its international security objectives with finite resources and capabilities.

#### That sparks Asian wars

Downer 1 (Alexander, MP, Minister for Foreign Affairs. “The Australia-United States Alliance and East Asian Security,” Speech at the University of Sydney conference, 6-29)

I want to put to rest this evening a view we hear from time-to-time in the media and elsewhere which argues that the ANZUS Treaty and the alliance is no longer relevant to Australia's interests with the end of the Cold War, or that it somehow imposes unacceptable trade-offs in Australia's relations with the Asia Pacific region. Nothing could be further from the truth. Forging and maintaining strong relations with one country or region does not mean neglecting any other country or region.  To suggest that the depth and strength of our alliance with the US somehow weakens or compromises our ties with the Asia Pacific is nonsense. In fact, ANZUS was seen from the outset as a means of enhancing our ties with the region: Percy Spender, who pushed so strongly to conclude the ANZUS Treaty, did so with a clear and expressed conviction that Australia’s destiny was bound up with Asia.  He saw the Australia – US alliance as a linchpin for stability in the region. On the eve of his departure for the Colombo Conference in January 1950, Spender said that “Australia and the United States of America are the two countries which can, in co-operation one with the other, make the greatest contribution to stability and to democratic development of the countries of South-East Asia.”  This was 13 months before the crucial Canberra negotiations at which the fundamentals of ANZUS were hammered out.

#### Goes nuclear

Dibb 1 (Paul, Prof – Australian National University, Strategic Trends: Asia at a Crossroads, Naval War College Review, Winter, http://www.nwc.navy.mil/press/Review/2001/Winter/art2-w01.htm)

The areas of maximum danger and instability in the world today are in Asia, followed by the Middle East and parts of the former Soviet Union. The strategic situation in Asia is more uncertain and potentially threatening than anywhere in Europe. Unlike in Europe, it is possible to envisage war in Asia involving the major powers: remnants of Cold War ideological confrontation still exist across the Taiwan Straits and on the Korean Peninsula; India and Pakistan have nuclear weapons and ballistic missiles, and these two countries are more confrontational than at any time since the early 1970s; in Southeast Asia, Indonesia—which is the world’s fourth-largest country—faces a highly uncertain future that could lead to its breakup. The Asia-Pacific region spends more on defense (about $150 billion a year) than any other part of the world except the United States and Nato Europe. China and Japan are amongst the top four or five global military spenders. Asia also has more nuclear powers than any other region of the world. Asia’s security is at a crossroads: the region could go in the direction of peace and cooperation, or it could slide into confrontation and military conflict. There are positive tendencies, including the resurgence of economic growth and the spread of democracy, which would encourage an optimistic view. But there are a number of negative tendencies that must be of serious concern. There are deep-seated historical, territorial, ideological, and religious differences in Asia. Also, the region has no history of successful multilateral security cooperation or arms control. Such multilateral institutions as the Association of Southeast Asian Nations and the ASEAN Regional Forum have shown themselves to be ineffective when confronted with major crises.

### A2: No Nuke War

#### Nuclear war more likely now than ever.

**Zaitchik 4** (Alexander, Co-founded Freezerbox in 1998, Reported from more than a dozen countries for publications such as the International Herald Tribune, Bulletin of Atomic Scientists, Wired, the San Francisco Chronicle, The Believer, and many others, *Hair-Trigger Planet*, http://www.freezerbox.com/archive/article.php?id=285)

When the U.S.S.R. collapsed, American public interest in nuclear weapons disappeared under the rubble. People boxed up their fears and hauled them down to the basements of their souls like some hideous secret, never to be looked upon again. Thirteen years later, we're still willful strangers to thermonuclear dread, carrying on as if the nuclear stockpiles amassed during the Cold War had all been converted into solar panels and parakeet swings under Boris Yeltsin's kindly gaze. Of course, they weren't. Most of those warheads are still live, still scattered under prairies, under seas, on roving flatbed trucks, ready to launch at a moment's notice. Right now, thousands of them are aimed at you, your family and your favorite television and sports personalities. Against a backdrop of nuclear proliferation, both Russia and the U.S. continue to maintain and refine their own arsenals. They are also lowering the thresholds for their use. As Washington pushes forward with missile defense and a bonus round of NATO expansion, Russian generals are bristling, while Russia's command and control system continues to deteriorate, increasing the chance that misjudgment, error or sabotage could trigger a missile launch against, say, New York City, which is still targeted for a couple hundred megatons. According to those analysts who never took their eyes off the nuclear threat, the danger of a missile exchange between U.S. and Russia is actually greater today than during the more stable periods of the Cold War. Last week, Russia held a wide-ranging exercise simulating a nuclear war with America. Old Soviet Tu-160 strategic bombers launched cruise missiles over the North Atlantic and ICBMs were tested over Russia's far northern region. Military satellites were launched under simulation battlefield conditions, and Russia's beleaguered early warning system was put through the ringer. Gen. Yuri Baluyevsky, first deputy chief of the General Staff of the Russian military, told reporters in Moscow that the military exercise reflected Russian concerns over U.S. plans to research and develop new classes of nuclear weapons, including so-called "bunker busters." "The [U.S. is] trying to make nuclear weapons an instrument of solving military tasks [and] lower the threshold of nuclear weapons use," Baluyevsky said. "Shouldn't we react to that?" Days before the exercise, Russian defense minister Sergei Ivanov had a testy exchange with Senator John McCain at NATO's annual security conference in Munich. The two clashed over Moscow's "meddling" in the Baltics, Ukraine and the Caucuses. McCain charged neo-imperialism; Ivanov reiterated Russia's right to secure its "near abroad." It is an argument that is just getting started. As the two nuclear superpowers vie for influence and oil routes, U.S.-Russian tensions will rise. In a sign of the changing times, nostalgic Cold Warrior William Safire blurted out in his Feb. 9 syndicated column something that has rarely been said in polite company since 1989: that the central mission of NATO is still to "contain the Russian bear." The clash at the Munich conference was certainly a chilling moment for those unenthusiastic about another Cold War. But it was far from the first such moment since the dismantling of the Berlin Wall. In fact, the entire post-Cold War period could be accurately described as one long series of huge, underreported chilling moments, during which the threat of nuclear war has persisted and grown amid public apathy and ignorance. Call it the dirty little open secret of nuclear planning: Neither Russia nor the U.S. ever stopped viewing preparation for war against the other as the central organizing principle of its nuclear policy. February's extensive war game wasn't Russia's first such drill since the end of the Cold War, and the U.S. military performs similar drills annually. Driving the Russian side of U.S.-Russian nuclear politics is the General Staff. The Russian General Staff is made up of officers from the various branches of the military, including the Strategic Rocket Forces. It is the generator and keeper of Russian nuclear policy. These senior generals, who maintain de facto independent control over the country's nuclear weapons, are proud, tough bastards who came of age during the heyday of Soviet military prestige. It is said that Gorbachev just barely prevented some of them from launching an invasion of Eastern Europe to prevent the collapse of the Warsaw Pact. Even now, many remain deeply bitter about the dissolution of the U.S.S.R., which deprived Russia of the eastern buffer it acquired in World War II, when the Red Army beat back and crushed the Nazi Wehrmacht at the cost of 20 million lives. The memory of Hitler's June 1941 invasion lives deep in the General Staff's collective military mind, fueling a determination that Russia will never again be taken by surprise. This determination is today reinforced by Russian weakness and what these generals perceive as the growing NATO "threat." Faced with economic ruin and the collapse of the conventional military, they have concentrated attention and resources on the world's second-greatest deterrent: Russia's remaining massive nuclear arsenal. American military planners are naturally unnerved by the continued existence of this arsenal, and lingering mutual suspicions have led both sides to maintain their nuclear forces on a constant alert, launch-on-warning footing. This means that American and Russian rocket-mounted nuclear weapons remain armed, fueled, loaded and kept at hair-trigger readiness 24 hours a day, 365 days a year.

### 2NC No Solvency

#### Thorium sucks – major technical hurdles and will never be viable

Rees, 11 – the Ecologist's acting Green Living Editor (Eifion, 6/23. ““Don't believe the spin on thorium being a greener nuclear option.” http://www.guardian.co.uk/environment/2011/jun/23/thorium-nuclear-uranium)

There is a significant sticking point to the promotion of thorium as the 'great green hope' of clean energy production: it remains unproven on a commercial scale. While it has been around since the 1950s (and an experimental 10MW LFTR did run for five years during the 1960s at Oak Ridge National Laboratory in the US, though using uranium and plutonium as fuel) it is still a next generation nuclear technology – theoretical. China did announce this year that it intended to develop a thorium MSR, but nuclear radiologist Peter Karamoskos, of the International Campaign to Abolish Nuclear Weapons (ICAN), says the world shouldn't hold its breath. 'Without exception, [thorium reactors] have never been commercially viable, nor do any of the intended new designs even remotely seem to be viable. Like all nuclear power production they rely on extensive taxpayer subsidies; the only difference is that with thorium and other breeder reactors these are of an order of magnitude greater, which is why no government has ever continued their funding.' China's development will persist until it experiences the ongoing major technical hurdles the rest of the nuclear club have discovered, he says. Others see thorium as a smokescreen to perpetuate the status quo: the world's only operating thorium reactor – India's Kakrapar-1 – is actually a converted PWR, for example. 'This could be seen to excuse the continued use of PWRs until thorium is [widely] available,' points out Peter Rowberry of No Money for Nuclear (NM4N) and Communities Against Nuclear Expansion (CANE). In his reading, thorium is merely a way of deflecting attention and criticism from the dangers of the uranium fuel cycle and excusing the pumping of more money into the industry. And yet the nuclear industry itself is also sceptical, with none of the big players backing what should be – in PR terms and in a post-Fukushima world – its radioactive holy grail: safe reactors producing more energy for less and cheaper fuel. In fact, a 2010 National Nuclear Laboratory (NNL) report (PDF)concluded the thorium fuel cycle 'does not currently have a role to play in the UK context [and] is likely to have only a limited role internationally for some years ahead' – in short, it concluded, the claims for thorium were 'overstated'. Proponents counter that the NNL paper fails to address the question of MSR technology, evidence of its bias towards an industry wedded to PWRs. Reliant on diverse uranium/plutonium revenue streams – fuel packages and fuel reprocessing, for example – the nuclear energy giants will never give thorium a fair hearing, they say. But even were its commercial viability established, given 2010's soaring greenhouse gas levels, thorium is one magic bullet that is years off target. Those who support renewables say they will have come so far in cost and efficiency terms by the time the technology is perfected and upscaled that thorium reactors will already be uneconomic. Indeed, if renewables had a fraction of nuclear's current subsidies they could already be light years ahead. All other issues aside, thorium is still nuclear energy, say environmentalists, its reactors disgorging the same toxic byproducts and fissile waste with the same millennial half-lives. Oliver Tickell, author of Kyoto2, says the fission materials produced from thorium are of a different spectrum to those from uranium-235, but 'include many dangerous-to-health alpha and beta emitters'. Tickell says thorium reactors would not reduce the volume of waste from uranium reactors. 'It will create a whole new volume of radioactive waste from previously radio-inert thorium, on top of the waste from uranium reactors. Looked at in these terms, it's a way of multiplying the volume of radioactive waste humanity can create several times over.' Putative waste benefits – such as the impressive claims made by former Nasa scientist Kirk Sorensen, one of thorium's staunchest advocates – have the potential to be outweighed by a proliferating number of MSRs. There are already 442 traditional reactors already in operation globally, according to the International Atomic Energy Agency. The by-products of thousands of smaller, ostensibly less wasteful reactors would soon add up. Anti-nuclear campaigner Peter Karamoskos goes further, dismissing a 'dishonest fantasy' perpetuated by the pro-nuclear lobby. Thorium cannot in itself power a reactor; unlike natural uranium, it does not contain enough fissile material to initiate a nuclear chain reaction. As a result it must first be bombarded with neutrons to produce the highly radioactive isotope uranium-233 – 'so these are really U-233 reactors,' says Karamoskos. This isotope is more hazardous than the U-235 used in conventional reactors, he adds, because it produces U-232 as a side effect (half life: 160,000 years), on top of familiar fission by-products such as technetium-99 (half life: up to 300,000 years) and iodine-129 (half life: 15.7 million years).Add in actinides such as protactinium-231 (half life: 33,000 years) and it soon becomes apparent that thorium's superficial cleanliness will still depend on digging some pretty deep holes to bury the highly radioactive waste. With billions of pounds already spent on nuclear research, reactor construction and decommissioning costs – dwarfing commitments to renewables – and proposed reform of the UK electricity markets apparently hiding subsidies to the nuclear industry, the thorium dream is considered by many to be a dangerous diversion. Energy consultant and former Friends of the Earth anti-nuclear campaigner Neil Crumpton says the government would be better deferring all decisions about its new nuclear building plans and fuel reprocessing until the early 2020s: 'By that time much more will be known about Generation IV technologies including LFTRs and their waste-consuming capability.' In the meantime, says Jean McSorley, senior consultant for Greenpeace's nuclear campaign, the pressing issue is to reduce energy demand and implement a major renewables programme in the UK and internationally – after all, even conventional nuclear reactors will not deliver what the world needs in terms of safe, affordable electricity, let alone a whole raft of new ones. 'Even if thorium technology does progress to the point where it might be commercially viable, it will face the same problems as conventional nuclear: it is not renewable or sustainable and cannot effectively connect to smart grids. The technology is not tried and tested, and none of the main players is interested. Thorium reactors are no more than a distraction.'

### 2NC Irreversible

#### Extend warming’s irreversible – scientists and long term predictions – 4.3 degrees is inevitable, that assumes zero emissions – that’s ANI.

#### 6 degree warming’s inevitable

AP 9 (Associated Press, Six Degree Temperature Rise by 2100 is Inevitable: UNEP, September 24, <http://www.speedy-fit.co.uk/index2.php?option=com_content&do_pdf=1&id=168>)

Earth's temperature is likely to jump six degrees between now and the end of the century even if every country cuts greenhouse gas emissions as proposed, according to a United Nations update. Scientists looked at emission plans from 192 nations and calculated what would happen to global warming. The projections **take into account** 80 percent emission cuts from the U.S. and Europe by 2050, which are not sure things. The U.S. figure is based on a bill that passed the House of Representatives but is running into resistance in the Senate, where debate has been delayed by health care reform efforts. Carbon dioxide, mostly from the burning of fossil fuels such as coal and oil, is the main cause of global warming, trapping the sun's energy in the atmosphere. The world's average temperature has already risen 1.4 degrees since the 19th century. Much of projected rise in temperature is because of developing nations, which aren't talking much about cutting their emissions, scientists said at a United Nations press conference Thursday. China alone adds nearly 2 degrees to the projections. "We are headed toward very serious changes in our planet," said Achim Steiner, head of the U.N.'s environment program, which issued the update on Thursday. The review looked at some 400 peer-reviewed papers on climate over the last three years. Even if the developed world cuts its emissions by 80 percent and the developing world cuts theirs in half by 2050, as some experts propose, the world is still facing a 3-degree increase by the end of the century, said Robert Corell, a prominent U.S. climate scientist who helped oversee the update. Corell said the most likely agreement out of the international climate negotiations in Copenhagen in December still translates into a nearly 5-degree increase in world temperature by the end of the century. European leaders and the Obama White House have set a goal to limit warming to just a couple degrees. The U.N.'s environment program unveiled the update on peer-reviewed climate change science to tell diplomats how hot the planet is getting. The last big report from the Nobel Prize-winning Intergovernmental Panel on Climate Change came out more than two years ago and is based on science that is at least three to four years old, Steiner said. Global warming is speeding up, especially in the Arctic, and that means that some top-level science projections from 2007 are already out of date and overly optimistic. Corell, who headed an assessment of warming in the Arctic, said global warming "is accelerating in ways that we are not anticipating." Because Greenland and West Antarctic ice sheets are melting far faster than thought, it looks like the seas will rise twice as fast as projected just three years ago, Corell said. He said seas should rise about a foot every 20 to 25 years.

# 1NR

### Impact

#### No impact defense means its try or die for the negative – Impact outweighs – cyber terrorism escalates and draws in Russia because of retaliatory systems – it goes nuclear – that’s Fritz

#### Visa restrictions block joint efforts on nuclear power --- that’s key to global adoption – turns solvency

Lyons and Lyman 9 (Blythe J., Senior Consultant – Energy Resources International, and John R., Director of the Energy and Environment Program – Atlantic Council, “United States-China Cooperation on Nuclear Power: An Opportunity for Fostering Sustainable Energy Security”, Atlantic Council Report, 3-6, http://www.acus.org/files/publication\_pdfs/65/AtlanticCouncil-USChinaNuclearPower.pdf)

10. One of the roadblocks to the development of cooperative opportunities is the U.S. visa issuance system. The Atlantic Council was encouraged to ask the U.S. Department of State to improve its processing of visa applications to significantly shorten the time needed for Chinese nationals involved in nuclear power to obtain a visa for travel to the U.S. Consider, for example, that France provides a dedicated consulate. It is important to recognize that U.S. authorities must take into consideration the security of nuclear facilities but that a better balance can be reached. This is a problem that can be solved. 11. There is an opportunity for international cooperation on the development of a nuclear waste repository based on the experience the U.S. has already gained through 10 years of operation at the Waste Isolation Pilot Project (WIPP) facility and through its Yucca Mountain site characterization and licensing activities. 12. China’s 10 MWe High Temperature Gas Reactor (HTGR) scheduled to be in operation by November 2013 in Shandong Province, could serve as an international experimental facility. The currently operating test pebble bed reactor has provided an opportunity for international collaboration. 13. Cooperation on the development of advanced fuel cycle technologies, already underway in U.S.-China working groups, will provide significant opportunities to share rather than duplicate knowledge and funding. Generation IV (Gen IV) international collaboration on R&D is necessary and beneficial for all participants to share costs, facilities and experience. Specific fuel cycle R&D opportunities proposed by the State Nuclear Power Technology corporation (SNPTC) include the following: Advanced fuel, such as mixed oxide (MOX) fuel, and metal fuel; Transmutation technology, such as fast reactor and accelerator driven systems; Reprocessing technologies, such as MOX spent fuel reprocessing, dry processing, on-site recycle; and, Repository design technology. 14. The Generation IV International Forum (GIF) will provide a good framework to deal with intellectual property issues. If prototype or demonstration plants were to be built under the aegis of the GIF, it could also provide experience in dealing with legal and regulatory issues. Issues such as design ownership, who would build the facility, cost sharing would have to be addressed. As countries have vested interests in certain types of technologies, resolution of such issues may be difficult. 15. The Global Nuclear Energy Partnership (GNEP): The U.S., which led the way in establishing the international collaborative effort to develop proliferation-resistant technologies and institutions, should take advantage of its leadership position to nurture and expand GNEP’s international activities. As in GIF, there are advantages to sharing technical expertise and pooling financial resources. GNEP is already in place and the Obama Administration can take advantage of the years of effort it took to set up the framework for international collaboration while adapting GNEP goals to current realities and domestic nuclear development policies. Consistency in U.S. nuclear energy policies, especially in relation to international efforts, is crucial to foster global acceptance of a safe, secure and sustainable nuclear power. 6.0 Conclusion The time for debate about the winners and losers in the supply of energy is over. Nuclear energy is needed more than ever as a non-carbon emitting source of electric supply and it can play a role in providing a secure, sustainable, affordable energy supply. The bottom line is that both the U.S. and China need a diversified energy production platform and technology portfolio, including a vibrant nuclear industry. Given the necessity of using all the forms of energy at our disposal while transitioning to a de-carbonized portfolio relying increasingly on renewables, integrated solutions are needed. Recognizing that this is not an either-or world, cooperation on nuclear energy can lead to expanded cooperation on other energy programs such as clean coal technology and renewable energy R&D. As the scientists and engineers begin to work together on nuclear programs, both will find ways to start other joint efforts. Together the U.S. and China have the ability to set the standards for world’s upcoming climate negotiations. With 2 billion people in the world suffering from a lack of energy and facing increasing shortages of adequate water supplies, developed countries are in a position to spread the benefits of electricity around the globe. To do this, every available source of electric supply must be deployed, and the U.S. and China, who will have the world’s two largest nuclear power programs in approximately 20 years, and who may also be the world’s top two economies, will be able to lead the way. This Dialogue provided a very good information base and an excellent platform to help the U.S. and China to work together to bring the benefits of nuclear energy to our nations and to the others in this world suffering from a lack of the basics for life. The U.S. and China are the world’s largest energy consumers—and the world’s two largest emitters of greenhouse gasses. Both countries must increase their use of nuclear power to help meet energy demands in a carbon-constrained environment. Relevant government agencies and key stakeholders must educate their publics about the parameters involved in producing a diverse energy supply in order to understand the worth of sacrifices that will be needed. Cooperation between the U.S. and China will be mutually beneficial. It is to the U.S.’s benefit that China designs and operates a safe nuclear power program. China is a significant market for the U.S. nuclear industry and provides an opportunity to maintain its manufacturing capabilities until its first new U.S. orders get underway. U.S. industry presence in China also increases relationships and communications thus improving U.S. security. The unprecedented transfer of nuclear technology to the Chinese will, in turn, help them develop clean sources of electricity sorely needed to address the fast growing needs of its economy and public. As Chinese capabilities grow, the nuclear supply chain is reinforced, supporting further opportunities for U.S. companies to expand reactor sales abroad. American and Chinese companies together can take advantage of their mutual competitive edges in technology and geography to expand into new markets. Cooperation and leadership are key and complimentary components in the U.S.’s and China’s efforts to ensure nuclear power’s contribution to meeting energy demand. Cooperation on technology development, human resources, security and safety will form the basis for their leadership on the world stage. Their combined actions will matter greatly in providing a quality environment with adequate energy supplies. The world is watching! The Chinese participants signaled their desire to improve both government-to-government cooperation and commercial sector ties. It appears that the U.S. government is equally interested in working with China to tackle the overarching challenges of developing a safe and secure commercial nuclear fuel cycle. By supporting and participating in this Dialogue, U.S. industry and government participants have demonstrated their commitment to dealing with the challenges to realize the burgeoning nuclear trade between the two countries.

### Will Pass – 2NC

#### CIR will pass now --- multiple warrants --- that’s our 1NC NYT --- Obama’s got just enough PC to get it through at the top of the agenda --- using his leverage to get the gang of eight to build momentum for the bill

#### GOP’s on board BECAUSE OF political capital – top of the agenda

Dionne 2-6 (EJ, Columnist – Washington Post, “GOP Will Back Immigration Reform,” 2013, <http://www.goerie.com/article/20130206/OPINION09/302069992/EJ-Dionne%3A-GOP-will-back-immigration-reform>)

That's the comparison to keep in mind to understand the extraordinary transformation of Beltway politics on immigration reform. Until Obama was re-elected, party competition translated into Republican efforts to block virtually everything the president wanted to accomplish. On immigration, at least, the parties are now competing to share credit for doing something big. It's wonderful to behold. Republicans who always held views on immigration similar to the president's -- notably Sen. John McCain -- are now free to say so. Other Republicans who thought a hard line on the issue was a political winner have been forced by the electoral facts to change their minds. Democrats, aware of how important Latino votes are to their party's future, are determined to get immigration reform done. Nothing is certain in Washington, especially in the Republican-led House of Representatives, but the odds that we will finally fix a broken immigration system are very high. The behind-the-scenes wrangling over the choreography of last week's twin immigration announcements -- by a bipartisan group of senators and by the president in a speech in Nevada -- shows how strong the bias toward action has become. We've become so accustomed to the politics of obstruction that we forget there is still such a thing as legislative craftsmanship. The Jan. 25 proposal by eight senators of their ideas for reform was months in the making as Sens. Charles Schumer, D-N.Y., and Lindsey Graham, R-S.C., worked closely with their colleagues to prepare for this moment. But Obama felt compelled to make clear early on that immigration reform was one of his highest priorities. The Senate negotiators worried that if Obama got out front with positions more progressive than theirs, particularly on a speedier path to citizenship for illegal immigrants, he could foil their efforts to reach accord. This fear reflected the GOP's Obama-can't-win response to whatever he does. Until now, Republicans criticized him for not taking "leadership" in pushing for immigration reform. But as soon as he was ready to speak out, the GOP switched direction, warning that his leadership was the last thing they wanted -- and could get in the way of a compromise. Thus did House Speaker John Boehner use a spokesman to instruct Obama to be "careful not to drag the debate to the left and ultimately disrupt the difficult work that is ahead in the House and Senate." As it happened, by letting it be known that he planned to give an immigration speech, Obama sped up the timetable of the Senate group, said a House Democrat active on the issue, and even encouraged a small collection of House Republicans eager for reform to let it be known that they, too, were working toward compromise. Obama sought to thread the political needle by laying out his principles while holding off on proposing a bill of his own. He would send up legislation only "if Congress is unable to move forward in a timely fashion." A relieved Schumer, using words almost never heard in Washington, declared that the president "is handling this perfectly." There will be much posturing over the next several months. By going slightly to the progressive side of the senators, Obama may ease the way for Republicans to strike a deal since they will be able to claim they stayed to the president's right. Conservative supporters of reform, such as Sen. Marco Rubio of Florida, will keep saying critical things about the president to preserve their credibility with the right. And if Boehner is interested in reform, he, too, must play a delicate game of distancing himself from Obama to persuade his most conservative colleagues to acquiesce to a vote on a bill. But make no mistake: This is immigration reform's time. It was poignant to hear McCain state plainly and eloquently what he has always felt. "We have been too content for too long," he said, "to allow individuals to mow our lawn, serve our food, clean our homes and even watch our children, while not affording them any of the benefits that make our country so great." Thanks to an election, those words are no longer politically incorrect inside John McCain's party.

#### It has momentum, but PC is key

VOA 2-6 (Voice of America News, “Battle over Immigration Reform Gathers Steam,” 2013, <http://www.albanytribune.com/06022013-battle-over-immigration-reform-gathers-steam/>)

U.S. President Barack Obama is expected to make immigration reform a priority in his State of the Union Address. But already, talk of tackling this controversial issue is gaining momentum. There are an estimated 11-million illegal immigrants in the United States with more still hoping to cross the border. Claudia Hernandez came here as a child, and like many in her situation, she feels she belongs in the U.S. “I have been here more than half of my life, and I respect the United States. This is my country,” she said. Only days into his second term, President Obama began the push for change. “The time has come for common-sense, comprehensive immigration reform,” he stated. “The time is now.” Already, Congress has begun to hold hearings. And a bipartisan group of senators, including former Republican presidential candidate John McCain, is pushing ahead with a plan of its own. “We have been too content for too long to allow individuals to mow our lawn, serve us food, clean our homes and even watch our children while not affording them any of the benefits that make our country so great,” McCain said. The bi-partisan plan calls for tighter border controls as well as a path to citizenship, something President Obama insists upon. That worries Jim Gilchrist. He founded the Minuteman Project, a citizen’s group that helps guard the border. “If we are going to grant amnesty to 15 to 30-million people, who are here illegally now, we are going to be granting amnesty to 300 million,” he added. “Who will follow them over the next several decades.” Other activists and lawmakers say proposals to secure the borders don’t go far enough – even though the United States spends more money on immigration enforcement than on all other federal law enforcement activities combined. In the meantime, the pressure is on – both President Obama and Congress.

#### Immigration will pass – Obama’s pushing and it’s a top priority [also answers high tech inevitable]

Foley 2-7 (Elise, Reporter, “Obama on Immigration Reform: Politics Not Easy, But 'Now Is The Time',” Huffington Post, 2013, <http://www.huffingtonpost.com/2013/02/07/obama-immigration-reform_n_2638843.html>)

President Barack Obama reiterated to House Democrats on Thursday that he is relying on their support for comprehensive immigration reform, even if they fear the political ramifications. "I recognize that politics aren't always easy, there are regional variations," he said at a conference here for the House Democratic caucus. "I understand that in some places this may end up being a tough issue. But what I also know is that part of our strength is our youth and our dynamism, and our history of attracting talent from all around the world." Obama's immigration push hit full speed last week with a speech in Las Vegas, where he called for a pathway to citizenship for undocumented immigrants, more border security and better interior enforcement. A bipartisan group in the Senate dubbed the "gang of eight" released a similar framework for reform, but tied green cards to yet-to-be-determined border metrics to disallow immigrants granted provisional status from becoming legal permanent residents until those triggers were met. Obama applauded the work being done in Congress on immigration. "I am heartened to see Republicans and Democrats starting to be in a serious conversation about getting this done," he said. "Now is the time." The biggest fight on immigration reform will be over a pathway to citizenship. Many House Republicans have said they might support a middle ground that would allow undocumented immigrants to stay in the U.S., but not to become citizens. Only 10 percent of American voters support such a plan, while 56 percent believe the undocumented should be allowed to eventually become citizens, according to a Quinnipiac University poll released Thursday. Obama has reiterated repeatedly, both in public and in private meetings with advocates and members of Congress, that he will not accept a bill without a pathway to citizenship, although he did not get into the issue on Thursday. He acknowledged that the politics of the issue were difficult, as he did later when discussing the need for gun control. But, like Vice President Joe Biden the day before him, he encouraged Democrats to think of what's right first and their own political aspirations second. "As long as we keep in mind why we came here in the first place, as long as we think back to whatever inspired each of us to say, 'Maybe I can give something back, maybe I can make a difference, maybe my purpose here on earth is not just to think about what's in it for me,'" he said. "Thinking about what's in it for the broader community, my neighborhood, or my state, or my country. If we keep that in mind every single day, **I have no doubt that we will continue to make progress**."

**Vote count**

**Huffington Post 1/30** http://www.huffingtonpost.com/2013/01/30/john-mccain-chuck-schumer-immigration\_n\_2581387.html

Sens. Chuck Schumer (D-N.Y.) and John McCain (R-Ariz.) laid out more of their group's plans on Wednesday for immigration reform, including their optimistic goal of **80 votes** for a final bill in the Senate. Well, maybe. Speaking at a Politico Playbook breakfast, the two went on to admit they might be, as McCain said, a little "Pollyanna-ish." "Senator Schumer and I are presenting maybe too rosy a picture here today," he said. "It's going to be a tough slog. It's going to be a tough, tough fight." Schumer and McCain are part of an eight-member group -- dubbed the "gang of eight," although McCain said he dislikes the term -- that released a framework for immigration reform on Monday. Sens. Dick Durbin (D-Ill.), Bob Menendez (D-N.J.), Michael Bennet (D-Colo.), Lindsey Graham (R-S.C.), Marco Rubio (R-Fla.) and Jeff Flake (R-Ariz.) are the other members of the group. They plan to meet every Tuesday and Thursday until a bill is crafted, ideally within the next month or two, Schumer and McCain said. Their staffs will meet on Wednesdays to work out further details, and plan to meet later Wednesday with officials from the Department of Homeland Security to discuss border concerns. The group's plan would give a pathway to citizenship for undocumented immigrants, albeit a tough one. Undocumented immigrants already living in the United States could gain provisional status to stay in the country, but could not receive green cards until certain border security metrics are met. President Barack Obama's plan, which he laid out on Tuesday, does not include such a requirement. McCain said the border element is absolutely crucial. A number of lawmakers fear that immigration reform will give status to undocumented immigrants but not prevent a future surge, similar to the aftermath of a bill signed into law by Republican President Ronald Reagan in 1986. He and Schumer said they want an open legislative process on immigration reform, taking the bill through committee and then onto the floor with the ability for fellow senators to offer amendments. They said they don't expect to agree on all amendments, but want to stick broadly to their framework. That could help them win over a majority of Democrats and ideally a majority of Republicans as well, McCain said. Schumer said later that they will also "**educate" the House** of Representatives through that process. They plan to work with a bipartisan group in the House and the Congressional Hispanic Caucus on reform plans, they said. In part, McCain admitted it's good politics for Republicans. But he made a dire warning for Republicans if they take down immigration reform: the trend of the Latino vote toward Democrats will continue. "As you look at demographics in states like mine, that means that we will go from Republican to Democrat over time," he said. The process began after the November 2012 election, when GOP presidential nominee Mitt Romney won only a small percentage of the Hispanic vote, attributed by many to his hardline immigration stances during the Republican primary. Many members of the group had already worked together on reform. Schumer said Graham called him to say he wanted to restart the process. "**'The band is back**. Let's do immigration. And I've talked to John McCain and he wanted to get involved,'" Graham said, according to Schumer. "And my heart went pitter patter," he added.

**Compromises now**

**CNN 1/29** <http://www.cnn.com/2013/01/29/politics/immigration-plan-bipartisanship/index.html>

An immigration proposal crafted for months in secret by a **high-profile, bipartisan cadre** of senators is both a rare moment of simpatico in politics and a matter of political practicality. President Barack Obama, who won re-election with strong support from Latinos, the fastest-growing demographic, has called an overhaul of immigration a second-term priority. Meanwhile, Republicans who lost the Latino vote by large numbers, have **signaled** that mainstream members might be **willing to compromise on thorny** immigration issues. "There aren't a whole lot of other issues where Republicans think they need to compromise or Democrats think they need to compromise," said Clyde Wilcox, a government professor at Georgetown University. "There's two different ways this could be viewed this. It's either a **Kumbaya moment ... or both sides see that** on this particular issue there's a necessity for compromise." But the deal is far from done. The plan could face stiff opposition in the House of Representatives, where conservatives and tea party leaders have resisted any compromise that even hints at relief or amnesty for those already in the country illegally. House Republicans are also working on a plan of their own, seeking bipartisan support. And Obama is said to have drafted his own detailed plan, which could differ from the Senate proposal in key areas, including border security and a path to legality. The senators announced their plan a day before Obama speaks in Las Vegas on immigration, signaling a major push by both sides to focus on the contentious issue in the new Congress. Aides said the president's remarks on Tuesday will touch on the blueprint he's detailed in the past: improving border security, cracking down on employers who hire undocumented workers and creating a pathway to "earned" citizenship for undocumented immigrants. Those provisions align closely with what the eight senators laid out in a framework of their legislation, which CNN obtained Sunday. Possible compromise on immigration takes shape Obama previously came under criticism from Latino activists for failing to deliver on a 2008 campaign promise to make immigration reform a priority of his first term. Last year, as the campaign heated up, the Obama administration announced a halt to deportations of some young undocumented immigrants in a move that delighted the Latino community. Exit polls in November indicated Latino voters gave overwhelming support to Obama over GOP challenger Mitt Romney, who had advocated a policy that amounted to forcing undocumented immigrants to deport themselves. Since the election, mainstream Republican leaders and some conservatives such as Sen. Marco Rubio, a child of Cuban immigrants and a rising star in the party, have called for addressing the immigration issue instead of ceding the Latino vote to Democrats. "There is a **new**, I think, **appreciation** on **both sides** of the aisle -- including maybe more importantly on the Republican side of the aisle -- that we have to enact a comprehensive immigration reform bill," Sen. John McCain, R-Arizona, said Sunday.

### Link Debate

#### Thorium unpopular – it’s perceived as being too expensive and an unworthy investment – that’s Nieler

#### Plan unpopular – tied to Solyndra

Korte, 12 (Gregory, “Politics stands in the way of nuclear plant's future”, USA Today, April 27, http://www.usatoday.com/money/industries/energy/story/2012-04-13/usec-centrifuges-loan-guarantees/54560118/1)

Three dozen 43-foot-tall centrifuges swirl quietly in a cavernous building in southern Ohio, ready to turn uranium hexafluoride into the enriched fuel that can power America's nuclear power plants. They stand like stacks of poker chips on a table — the ante for what could be a $2 billion national gamble on nuclear energy. Energy company USEC wants federal loan guarantees to allow it to build 11,000 centrifuges here, which would spin out enough fuel to power about three dozen nuclear power plants non-stop. But while plenty of politicians whose districts could benefit from the project support it, the Piketon plant remains stymied by a political standoff. Many Republicans who back the project — called the American Centrifuge Project — have savaged the Obama administration loan program that would pay for it, while the Obama Energy Department, burned by Republican criticism, has voiced tentative support for the plan but won't authorize federal money for it without congressional approval. For almost a year, congressional Republicans have criticized the administration's $535 million loan guarantee to now-bankrupt solar panel maker Solyndra. The administration, they say, is unfairly picking "winners and losers" in energy. Both sides say they want the project to move forward. Both support short-term "bridge" funding to keep the project going until the financing can be worked out. Both say the other side has to make the first move. **The stakes are high: It's an election year**, and Ohio is a swing state. USEC estimates the project at its peak will generate 3,158 jobs in Ohio, and 4,284 elsewhere. Pike County, home to the centrifuges, has a 13% unemployment rate — the highest in Ohio. The median household income is about $40,000. The average job at USEC pays $77,316.

#### Nuclear loans cost capital – caught in the Solyndra cross-fire

NYT, 11 (New York Times, “Will Solyndra Scandal Spill Over to Scald Nuclear Loan Guarantees?”, October 7, http://www.nytimes.com/gwire/2011/10/07/07greenwire-will-solyndra-scandal-spill-over-to-scald-nucle-3933.html?pagewanted=all)

The implosion of government-backed solar firm Solyndra has handed Republicans both the tools for a slow-burn inquiry that keeps the White House on the defensive and a ready-made target for ideological barbs at federal loan guarantee programs. But beneath the bombast of GOP pleas to stop government from "picking winners and losers" is near-party unity in favor of nuclear loan guarantees, and even a support base for keeping the Department of Energy in the renewable-power business. As a result, the Obama administration's sharpest critics on Solyndra must walk a fine line when it comes to the future of a program created by a Republican-controlled Congress and White House. Watching with interest, the nuclear industry is growing concerned that broad shots at DOE loan guarantees could catch them in the cross fire, despite key differences between the program's treatment of their sector versus renewables.

#### Plan costs capital – enrages Obama’s base

Maize, 10 (Kennedy, “Copenhagen: The Case for Climate Adaptation”, Managing Power, March 1, http://www.managingpowermag.com/opinion\_and\_commentary/Copenhagen-The-Case-for-Climate-Adaptation\_227.html)

Energy legislation is dead for 2010, except for possible subsidies for nuclear power, clean coal, and offshore drilling, designed to appeal to Republicans. But that reach across the partisan divide likely will enrage Obama’s base among liberals and environmentalists. The predictable outcome: more gridlock and name-calling. No action. These are salutary developments for the U.S. and the world. As Ronald Reagan was wont to say, “Stand there, don’t just do something.” This is particularly true as some of the alleged science behind the UN’s Intergovernmental Panel on Climate Change 2007 report turns out to be bogus. Claims of glacial retreat in India and the Andes are based on entirely unreliable sources. The same is true about hand-wringing on devastation of Amazon rainforests and the social impact of sea level rises, particularly in Bangladesh. The latest scientific developments—and it is good that the mainstream media is actually beginning to examine the IPPC’s claims with some skepticism—don’t mean that global warming is not real. They mean that the IPCC’s assessments are unreliable. The science may unravel further as it gets greater scrutiny. We don’t know what to believe. Attempts at global international collaboration, as in Kyoto and Copenhagen, were doomed to depravation by roving bands of governmental pirates, seeking economic rents. The operative word was “extortion.” Copenhagen reminded me of the International Law of the Sea Treaty negotiations over seabed mining, which I covered in the mid-1970s. The impetus for the negotiations was to provide a way to regulate deep seabed minerals mining. The talks deteriorated into attempts by poor countries to extort money from rich countries in the name of “fairness.” After decades of diplomacy and negotiations, the U.S. ultimately refused to become a party to the treaty. Ironically, seabed minerals mining (Hoovering up manganese nodules from the ocean floor) has never come to pass. The same sort of political game pitting rich nations against poor occurred in Copenhagen. The result: nothing of substance from the negotiations in a frigid Denmark. The U.S. government wasn’t alone in getting stalled in the Copenhagen gridlock. The Europeans, particularly Germany, banked on an economic agreement fostering a carbon trading market benefiting German bankers. Given the complex global politics, that wasn’t likely; the German agenda was kaputt gegangen even before the international meeting began. The U.S., Germany, and the other European nations knew when they landed their luxury jets in Copenhagen that no real deal was in the works. So they floated the fake notion of a “political” agreement, an agreement to agree in the future. That fell apart. Instead, there was no agreement except on civil disagreement. Advocates of aggressive international governmental regulatory approaches to climate change are wringing their hands and whining about failed opportunities. The Euros knew that what they were attempting—a draconian global climate control regime that favored them—was unlikely. The U.S. knew nothing would come of Copenhagen. Now the spin brigades are marching. In a commentary in The Energy Daily, Anne Lauvergeon of Areva and Jim Rogers of Duke Energy argued: “The fact that representatives from so many countries and organizations were willing to meet in Copenhagen is clear proof of their willingness and desire to work together.” That argument, of course, is baloney. The nations and organizations were willing to party together. Work together? Forget it. Rich nations that gave at least lip service in Copenhagen to what they argue is the potential catastrophic impact of climate warming—that includes the Obama administration—are trying to cobble together new multinational approaches to global warming. That approach is doomed. It rests on the notion that nations will yield their own interests on behalf of a distant, and not-well-understood, global goal. What to do? The answer to global warming, if it is real, isn’t global. It’s local. Given the long time frame of potential global warming effects, local adaptation appears to be the least-cost and most efficient approach. A lot of the modes of adaptation, such as using energy and water better, make sense regardless of the state of the climate. Analysts Ted Nordhaus and Michael Shellenberger, writing in Foreign Policy magazine in January (“The End of Magical Climate Thinking”) observed that the Obama administration’s approach to global warming adopted a fundamentally regulatory paradigm. “Obama was following two decades of magical thinking among both greens and liberal Democrats about energy technology,” they wrote. “In this view, energy efficiency pays for itself, solar and wind power are already nearly cost competitive with fossil fuels, and both can quickly and cheaply reduce emissions. This Pollyanna view of fossil fuel alternatives and efficiency, which makes going green seem cheap and easy—little more than the cost of ‘a postage stamp a day’—has provided the justification for green-policy advocacy that has overwhelmingly focused on pollution regulations and carbon pricing while ignoring serious investment in energy research and development.” Given the long time frame of potential global warming effects, local adaptation, including honest, industry-driven R&D (as distinguished from the junk science that recent revelations have disclosed when it comes to warming science and much Department of Energy R&D), appears to be a preferable, practical approach to global climate issues. Research the issues. Adapt at home. Watch the global issues take care of themselves. There is no case for precipitous action, despite the overwrought claims of many environmentalists. I don’t want to mislead anybody here about my views. I don’t regard global warming, if it is occurring, as necessarily a bad thing. While warming evangelists have been screeching about the calamities that will flow from a warmer world, they have dramatically overhyped the threat. There will be winners and losers from a warmer world, if that is in the climate cards. It’s a difficult, probably impossible, math to balance the climate account. Will the net be positive or negative for the world we live in? Nobody knows, or can know. My suspicion is that a warmer world is desirable, and the costs of trying to forestall that far exceed the potential benefits. Admittedly, that’s pure speculation. But we know that the climate changes, and has changed significantly for as far back as we can measure. There was a “Medieval Warm Period” and a modern “Ice Age.” Beyond that, we just don’t know the order or the direction of the changes. So it makes sense to move cautiously, hedge bets, employ rigorous science, and adapt where possible. What does this mean for managers in the power business? I suspect there will be less urgency in coming years to develop carbon dioxide emissions control strategies that can’t meet real-world economic criteria. If warming is real, and if there can be no global approach to combating it, then it makes sense (and it always did) to look at low-cost local options. That’s adaptation. To me, that suggests more gas generation, along with longer-term development of coal gasification as an economic alternative to conventional pulverized coal technology. New nukes, and improved existing nuclear plants, are very useful adaptive strategies, but not silver bullets. New nukes are way too expensive today. The Obama administration’s proposal to double or triple loan guarantee subsidies for nukes could move the industry forward and overcome Wall Street reluctance to finance new plants. But that’s far from certain. Nor is it certain that Congress will go along with the big bump for nuclear loan guarantees. Obama is courting Republicans with this proposal but **risks losing a substantial portion of his Democratic base of support**.

### General – No Link Turns\*\*\*

#### Obama can’t win on energy – only risk of a link

Eisler 12 Matthew is a Researcher @ the Chemical Heritage Foundation. “Science, Silver Buckshot, and ‘All of The Above’” April 2, http://scienceprogress.org/2012/04/science-silver-buckshot-and-%E2%80%9Call-of-the-above%E2%80%9D/

Conservatives take President Obama’s rhetoric at face value. Progressives see the president as disingenuous. No doubt White House planners regard delaying the trans-border section of the Keystone XL pipeline and approving the Gulf of Mexico portion as a stroke of savvy realpolitik, but one has to wonder whether Democratic-leaning voters really are as gullible as this scheme implies. And as for the president’s claims that gasoline prices are determined by forces beyond the government’s control (speculation and unrest in the Middle East), it is probably not beyond the capacity of even the mildly educated to understand that the administration has shown little appetite to reregulate Wall Street and has done its part to inflate the fear premium through confrontational policies in the Persian Gulf. Committed both to alternative energy (but not in a rational, comprehensive way) and cheap fossil fuels (but not in ways benefiting American motorists in an election year), President **Obama has accrued** no political capital **from his energy policy from either the left or the right** by the end of his first term.¶ The president long ago lost the legislative capacity for bold action in practically every field, including energy, but because the GOP’s slate of presidential candidates is so extraordinarily weak in 2012, he may not need it to get re-elected. At least, that is the conventional wisdom in Democratic circles. Should President Obama win a second term, Congress is likely to be **even more hostile** than in his first term, as in the Clinton years. And as in the Clinton years, that will probably mean four more years of inaction and increased resort to cant.

### PC Key – 2NC

#### PC builds public support and generates bipartisanship [also answers gun control]

Bohn 2-4 (Kevin, CNN Senior Producer, “President to Push Immigration Reform on Tuesday,” 2013, <http://www.kcci.com/news/politics/President-to-push-immigration-reform-on-Tuesday/-/9356970/18402338/-/ppmassz/-/index.html>)

A day after pushing the administration's gun control proposals on the road in Minnesota, President Obama will sit down with groups to push for immigration reform Tuesday, White House officials said. The president will meet with leaders of labor unions, including AFL-CIO President Richard Trumka and and Eliseo Medina, Secretary-Treasurer of the Service Employees International Union, as well as representatives of progressive groups, like the NAACP and the Center for American Progress, and key immigration reform groups. Separately he will have a meeting in the afternoon with a dozen leading CEOs, including Goldman Sachs' Lloyd Blankfein, Yahoo's Marissa Mayer, Coca Cola's Muhtar Kent, Alcoa's Klaus Kleinfeld, Marriott's Arne Sorenson and Motorola's Greg Brown. The White House said the meeting will allow the president the opportunity to discuss how to get a bipartisan immigration reform bill passed this year and how it fits into his economic agenda. This latest outreach is part of the White House effort to help engage the public on its second agenda priorities of immigration and guns to build public support for the ideas and to help generate momentum for action in Congress.

### CC Thumper

#### Obama isn’t spending Political capital on climate

Mogulescu 2-6 (Miles, Political Activist, “Can We Solve the Climate Crisis If We Don't Solve the Democracy Crisis?,” Huffington Post, 2013, http://www.huffingtonpost.com/miles-mogulescu/can-we-solve-the-climate-\_b\_2631033.html)

The Obama White House expressed little interest in expending political capital on climate change legislation while simultaneously relaxing safety regulations on oil and gas exploration and opening up large portion of U.S. waters to drilling, including in the Gulf of Mexico. Then the Deepwater Horizon oil rig exploded, pouring tens of thousands of gallons a day of oil into the Gulf of Mexico, filling the TV airwaves with pictures of oil-covered beaches, birds and fish. It was the final death knell for the Senate climate change bill. As Lizza wrote, "The White House's 'grand bargain' of oil drilling in exchange for a cap on carbon had backfired spectacularly." As Al Gore observed, Our democracy has been hacked. And when the large part of the polluters and their ideological allies tell the members of Congress to jump, they say 'how high?' And we need leadership in the executive branch as well. Through its tens of millions of dollars in lobbying and hundreds of millions of dollars in campaign cash, the energy industry has captured one political party -- the Republicans -- to block climate change legislation and cast doubt on climate change science, while it has intimidated the other political party -- the Democrats -- from making climate change a serious priority. Climate change went virtually unmentioned in the 2012 elections and not a single question about climate change was asked or answered in the presidential debates. The energy industry has followed what's been called the "tobacco strategy," modeled on the tobacco industry's decades-long campaign fund research and PR and ad campaigns casting doubt on the science linking smoking to cancer. Likewise the energy industry has spent massive amounts of money casting doubt on the scientific consensus that man-made climate change is rapidly destroying the earth's environment and habitability. An analysis of over 900 peer-reviewed papers casting doubt on climate change found that 9 of the 10 most prolific climate-change deniers cited have links to organizations funded by ExxonMobil. Meanwhile Koch Industries -- one of the top 10 polluters in the U.S. -- has outdone "ExxonMobil in giving money to organizations fighting legislation related to climate change, underwriting a huge network of foundations, think tanks, and political front groups." Koch funding to climate change denying groups totaled $61,375,781 from 1997-2010 and is continuing. The energy industry's "tobacco strategy" to cast doubt on climate change science has had an effect. According to a Harris Poll, belief in global warming dropped by over 25 percent from 2007-2011. If there's some hope, it's that in the wake of devastating climate events, the polls have come back somewhat -- a 2012 Pew poll showed a 10 percent increase in belief in global warming over the past 2 years. Meanwhile, in the words of journalist Steve Coll, ExxonMobil has turned itself "into a finance arm of the Republican Party". According to Coll, about 90 percent of ExxonMobil's PAC contributions in the 2010 election cycle went to Republicans and an even higher percentage went to them in 2012. (In order to hedge their bets, Chevron and ConocoPhillips gave to Democrats at twice the level of ExxonMobil, which may be part of the reason that soon after taking office in 2008, the Obama administration urged environmental organizations to not talk about global warming but to emphasize green jobs instead.) ExxonMobil "has invested mainly in a blocking strategy, focusing its PAC donations on Republicans who can try to assure that no damaging laws go through," writes Coll. So as long as Republicans -- and corporate-friendly Democrats -- control the House, and Republicans in the Senate have enough votes to filibuster effective climate change legislation, changing the laws in any significant ways to slow devastating climate change is effectively dead. Our corrupt political finance system -- which allows the energy industry to buy Congress and block change -- makes it difficult to impossible to take effective legislative action.

### Aerospace 2NC

#### Immigration reform prevents a shortage in the aerospace industry.

**Thompson 9** (David, President – American Institute of Aeronautics and Astronautics, and Dr. Richard Aubrecht, Vice President of Strategy and Technology – Moog, Inc., “The Aerospace Workforce”, Federal News Service, 12-10, Lexis)

And finally, despite our best efforts to increase the domestic supply of well-qualified aerospace engineers and scientists, it is AIAA's view that that alone will not be sufficient to fully address the problems that our country is going to face over the next decade or so. And so we further advocate a reexamination of immigration laws and visa levels so that we can more effectively attract from around the world the best and brightest young people that want to come to our country and build their lives and careers here to strengthen our aerospace sector and the nation as a whole. In addition, within this general framework, AIAA and a number of other engineering societies across a variety of fields have advocated the pursuit of policies specifically focused on emphasizing the two middle initials in the STEM acronym, namely technology and engineering. I think we are farther behind in those areas or we risk falling farther behind in those areas than we perhaps do in the bracketing letters of science and math. All are important, but as we look out over the next decade, the challenges in engineering and technology may even be worse -- more severe than the challenges in the basic sciences and math. REP. EDWARDS: Thank you. And I'm sure we could go on but my time has expired, Madame Chairwoman. REP. GIFFORDS: Dr. Aubrecht, did you want to add -- (inaudible)? MR. AUBRECHT: Yes. Just to come back to the point that you made there in terms of immigration policy, we employ about 9,000 people in 26 countries around the world. We're headquartered in Buffalo, and that's where the center of our aerospace business is, but we've taken this technology into all kinds of other fields, and a number of cases where we'd like to bring people in from outside the U.S. and we just simply have a terrible time trying to get visas for these people to come in. So I don't think we're going to be able to meet the needs from a technological staffing standpoint unless you open up the immigration. People from all over the world would just love to come to the U.S. and work on these programs. This is where it's happening. But they just can't get the visas.

#### Nuclear war.

**Tellis 98** (Ashley, Senior Political Scientist – RAND, “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.