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#### Immigration reform will pass --- it’s a top priority.

**Foley and Stein**, **1/2**/2013 (Elise and Sam, Obama’s Immigration Reform To Begin This Month, The Huffington Post, p. http://www.huffingtonpost.com/2013/01/02/obama-immigration-reform\_n\_2398507.html)

Despite a bruising fiscal cliff battle that managed to set the stage for an even more heated showdown that will likely take place in a matter of months, President Barack Obama is planning to move full steam ahead with the rest of his domestic policy agenda. An Obama administration official said the president plans to push for immigration reform this January. The official, who spoke about legislative plans only on condition of anonymity, said that coming standoffs over deficit reduction are unlikely to drain momentum from other priorities. The White House plans to push forward quickly, not just on immigration reform but gun control laws as well. The timeframe is likely to be cheered by Democrats and immigration reform advocates alike, who have privately expressed fears that Obama's second term will be drowned out in seemingly unending showdowns between parties. The just-completed fiscal cliff deal is giving way to a two-month deadline to resolve delayed sequestration cuts, an expiring continuing resolution to fund the government and a debt ceiling that will soon be hit. With those bitter battles ahead, the possibility of passing other complicated legislation would seem diminished. "The negative effect of this fiscal cliff fiasco is that every time we become engaged in one of these fights, there's no oxygen for anything else," said a Senate Democratic aide, who asked for anonymity to speak candidly. "It's not like you can be multi-tasking -- with something like this, Congress just comes to a complete standstill." It remains unclear what type of immigration policies the White House plans to push in January, but turning them into law could be a long process. Aides expect it will take about two months to write a bipartisan bill, then another few months before it goes up for a vote, possibly in June. A bipartisan group of senators are already working on a deal, although they are still in the early stages. Rep. Zoe Lofgren (D-Calif.) will likely lead on the Democratic side in the House. While many Republicans have expressed interest in piecemeal reform, it's still unclear which of them plan to join the push. Lofgren expressed hope that immigration reform would be able to get past partisan gridlock, arguing that the election was seen as something of a mandate for fixing the immigration system and Republicans won't be able to forget their post-election promises to work on a bill. "In the end, immigration reform is going to depend very much on whether Speaker [John] Boehner wants to do it or not," Lofgren said.

#### Plan costs capital --- massively unpopular.

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.

#### Capital is key --- it bridges support from both parties.

Dallas Morning News, **1/2**/2012 (Editorial: Actions must match Obama’s immigration pledge, p. http://www.dallasnews.com/opinion/editorials/20130102-editorial-actions-must-match-obamas-immigration-pledge.ece)

The president’s words to NBC’s David Gregory are only that — words. What will really matter is whether he puts his muscle into the task this year. We suggest that Obama start by looking at the example of former President George W. Bush. Back in 2006 and 2007, the Republican and his administration constantly worked Capitol Hill to pass a comprehensive plan. They failed, largely because Senate Republicans balked. But the opposition didn’t stop the Bush White House from fully engaging Congress, including recalcitrant Republicans. Obama may have a similar problem with his own party. The dirty little secret in the 2006 and 2007 immigration battles was that some Democrats were content to let Senate Republicans kill the effort. Labor-friendly Democrats didn’t want a bill, either. And they may not want one this year. That reluctance is a major reason the president needs to invest in this fight. He must figure out how to bring enough Democrats along, while also reaching out to Republicans. In short, the nation doesn’t need a repeat of the process through which the 2010 health care legislation was passed. Very few Republicans bought into the president’s plan, leaving the Affordable Care Act open to partisan sniping throughout last year’s election. If the nation is going to create a saner immigration system, both parties need to support substantial parts of an answer. The new system must include a guest worker program for future immigrants and a way for illegal immigrants already living here to legalize their status over time. Some House Republicans will object to one or both of those reforms, so Speaker John Boehner must be persuasive about the need for a wholesale change. But the leadership that matters most will come from the White House. The president has staked out the right position. Now he needs to present a bill and fight this year for a comprehensive solution. Nothing but action will count. HE SAID IT … “I’ve said that fixing our broken immigration system is a top priority. I will introduce legislation in the first year [of the second term] to get that done. I think we have talked about it long enough. We know how we can fix it. We can do it in a comprehensive way that the American people support. That’s something we should get done.” President Barack Obama, in an interview on Meet the Press Sunday

#### Immigration reform expands skilled labor --- spurs relations and economic growth in China and India.

Los Angeles **Times**, 11/9/**2012** (Other countries eagerly await U.S. immigration reform, p. http://latimesblogs.latimes.com/world\_now/2012/11/us-immigration-reform-eagerly-awaited-by-source-countries.html)

"Comprehensive immigration reform will see expansion of skilled labor visas," predicted B. Lindsay Lowell, director of policy studies for the Institute for the Study of International Migration at Georgetown University. A former research chief for the congressionally appointed Commission on Immigration Reform, Lowell said he expects to see at least a fivefold increase in the number of highly skilled labor visas that would provide "a significant shot in the arm for India and China." There is widespread consensus among economists and academics that skilled migration fosters new trade and business relationships between countries and enhances links to the global economy, Lowell said. "Countries like India and China weigh the opportunities of business abroad from their expats with the possibility of brain drain, and I think they still see the immigration opportunity as a bigger plus than not," he said.

#### US/India relations averts South Asian nuclear war.

**Schaffer**, Spring **2002** (Teresita – Director of the South Asia Program at the Center for Strategic and International Security, Washington Quarterly, p. Lexis)

Washington's increased interest in India since the late 1990s reflects India's economic expansion and position as Asia's newest rising power. New Delhi, for its part, is adjusting to the end of the Cold War. As a result, both giant democracies see that they can benefit by closer cooperation. For Washington, the advantages include a wider network of friends in Asia at a time when the region is changing rapidly, as well as a stronger position from which to help calm possible future nuclear tensions in the region. Enhanced trade and investment benefit both countries and are a prerequisite for improved U.S. relations with India. For India, the country's ambition to assume a stronger leadership role in the world and to maintain an economy that lifts its people out of poverty depends critically on good relations with the United States.

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#### Text: the fifty state governments of the United States should substantially increase grants for magnetic fusion energy generation in the United States.

####  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.

#### And – the signal is the same

Bickers 8 (Richard, Editor – NPO, quarterly journal published by the Nuclear Energy Institute, “The Trickle-Up Effect,” Nuclear Policy Outlook, Second Quarter, www.nei.org/filefolder/Outlook\_June.pdf)

States Put Singular Stamp on Energy Policy—With National Implications Spurred by federal legislation and public concern about energy costs, electricity supply and environmental issues, the pace of state and local government activity on energy policy in general— and nuclear power in particular—has skyrocketed in the past few years. Energy, environmental and economic concerns are coalescing, and states are taking action. “For most people, the federal government seems too removed from their daily lives,” said Del. Sally Jameson (D), a member of the Maryland House of Delegates since 2003. Her district straddles the nation’s capital and Calvert County, Md., home to Constellation Energy’s Calvert Cliffs nuclear plant. “Most people look to the state for policy. They know us one-on-one and state policy directly affects their lives. “The federal government is so huge that they believe they will get lost in it. At the state level,” she noted, “their voices are heard.” Looking to the future, the United States must maintain at least the current 30 percent share of non-emitting electric generating capacity if it is to meet its clean-air goals. Even with conservative assumptions about increases in electricity demand and a doubling of renewable energy production, the United States faces a challenge to maintain its current proportion of carbon-free electricity production. A substantial increase in nuclear energy is essential. The Energy Policy Act of 2005, which incorporated a wide range of measures to support current nuclear plants and provided important incentives for building new nuclear plants, reflects a national commitment to carbon-free energy sources. The legislation includes investment incentives to encourage construction of new nuclear plants, including production tax credits, loan guarantees and business risk protection for companies pursuing the first new reactors. Now, states are linking environment and energy in the policy calculus. “The view is that when the federal government isn’t taking the lead, the legislatures need to step up to the plate,” said Melissa Savage, program director for the Agriculture, Energy and Environmental Committee of the National Conference of State Legislatures (NCSL). States are “repealing moratoriums, holding committee session study hearings, looking at changing regulations, and just getting the conversation started in some cases,” she noted. “We’re facing a pretty critical energy crunch in the country. The issue is starting to bubble back up,” Savage said. “In some states, it never went away.” Ten states have passed policies instituting some form of cost recovery assurance for nuclear plant construction. Three states have introduced and one has passed legislation requiring that nuclear energy be included in some form of clean or alternative energy portfolio. Six of the 13 states with moratoriums preventing new nuclear plants are considering removing those bans. Two states have passed local tax incentives for nuclear plants. For Maryland’s Jameson, the link between environmental and energy policy is a driving factor in policy formulation. “We are nearly surrounded by water in Maryland,” she said, pointing to the Chesapeake Bay, Atlantic Ocean and a network of rivers. “We are doing everything we can to limit harm to our waterways and environment because of climate change and global warming.” The state has taken a “fairly proactive approach” to addressing both environmental and energy issues in the face of a Maryland Public Service Commission warning that electricity customers could face power restrictions or rolling blackouts as early as 2011, she said. STATES AS POLICY LABORATORIES “It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory and try novel social and economic experiments without risk to the rest of the country,” Supreme Court Justice Louis Brandeis wrote in 1932. Historically, state and local governments have led the way on issues as varied as child labor, the environment and social reform. And state governments indeed are serving as laboratories in the development of policy supporting nuclear energy. One such policy is the Regional Greenhouse Gas Initiative, or RGGI, a cooperative effort by 10 Northeast and Mid-Atlantic states to reduce carbon dioxide emissions. Participating states have agreed to implement RGGI through a regional cap-andtrade program whereby participating states anticipate auctioning nearly the entire annual regional emissions budget, approximately 188 million tons of carbon dioxide. Each ton of carbon dioxide will constitute an “allowance.” The multi-state agreement treats all carbon-free sources of electricity, such as nuclear energy and renewables, equally in the framework for awarding monetary credits for greenhouse gas reduction. The RGGI states have agreed to participate in regional auctions for the allowances, beginning this September. Officials have scheduled a second auction in December.

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#### ITER funding is coming now --- cuts in domestic fusion research are key to fund the contribution.

**Washington Post**, **6/25**/2012 (Budget cuts threaten pursuit of nuclear fusion as a clean energy source, p. <http://www.washingtonpost.com/national/health-science/budget-cuts-threaten-pursuit-of-nuclear-fusion-as-a-clean-energy-source/2012/06/25/gJQAKlpS2V_story.html>)

President Obama’s budget request for next year cuts domestic fusion research by 16 percent, to $248 million. It would shutter a fusion lab at MIT, one of four funded by the Department of Energy. It would slash 50 to 100 jobs from the 450 at the Princeton lab. And it would use the $48 million in total savings to boost the U.S. contribution to an international fusion mega-project now under construction in the south of France, called ITER, a project whose estimated costs have grown to $23 billion and whose start date has been pushed back to the next decade. In a time of flat federal spending, the president has made a choice to fund the international project — whose costs to the United States will grow in coming years, according to Energy Department projections, to as much as $300 million a year — at the expense of the domestic program. (The United States pledged funding to ITER in 2003, joining the European Union, Russia, China, India, South Korea and Japan.)

#### ITER commitment solidifies science diplomacy --- prevents great power conflict and spurs international cooperation.

**Fedoroff**, 4/2/**2008** (Nina – Ph.D., Science and Technology Adviser to the Secretary of State and the Administration of USAID, Making Science Diplomacy More Effective, Testimony Before the House Science on Research and Science Education, Hearing on Science Diplomacy, p. <http://2001-2009.state.gov/g/stas/2008/105286.htm>)

Science by its nature facilitates diplomacy because it strengthens political relationships, embodies powerful ideals, and creates opportunities for all. The global scientific community embraces principles Americans cherish: transparency, meritocracy, accountability, the objective evaluation of evidence, and broad and frequently democratic participation. Science is inherently democratic, respecting evidence and truth above all. Science is also a common global language, able to bridge deep political and religious divides. Scientists share a common language. Scientific interactions serve to keep open lines of communication and cultural understanding. As scientists everywhere have a common evidentiary external reference system, members of ideologically divergent societies can use the common language of science to cooperatively address both domestic and the increasingly trans-national and global problems confronting humanity in the 21st century. There is a growing recognition that science and technology will increasingly drive the successful economies of the 21st century. Science and technology provide an immeasurable benefit to the U.S. by bringing scientists and students here, especially from developing countries, where they see democracy in action, make friends in the international scientific community, become familiar with American technology, and contribute to the U.S. and global economy. For example, in 2005, over 50% of physical science and engineering graduate students and postdoctoral researchers trained in the U.S. have been foreign nationals. Moreover, many foreign-born scientists who were educated and have worked in the U.S. eventually progress in their careers to hold influential positions in ministries and institutions both in this country and in their home countries. They also contribute to U.S. scientific and technologic development: According to the National Science Board’s 2008 Science and Engineering Indicators, 47% of full-time doctoral science and engineering faculty in U.S. research institutions were foreign-born. Finally, some types of science – particularly those that address the grand challenges in science and technology – are inherently international in scope and collaborative by necessity. The ITER Project, an international fusion research and development collaboration, is a product of the thaw in superpower relations between Soviet President Mikhail Gorbachev and U.S. President Ronald Reagan. This reactor will harness the power of nuclear fusion as a possible new and viable energy source by bringing a star to earth. ITER serves as a symbol of international scientific cooperation among key scientific leaders in the developed and developing world – Japan, Korea, China, E.U., India, Russia, and United States – representing 70% of the world’s current population. The recent elimination of funding for FY08 U.S. contributions to the ITER project comes at an inopportune time as the Agreement on the Establishment of the ITER International Fusion Energy Organization for the Joint Implementation of the ITER Project had entered into force only on October 2007. The elimination of the promised U.S. contribution drew our allies to question our commitment and credibility in international cooperative ventures. More problematically, it jeopardizes a platform for reaffirming U.S. relations with key states. It should be noted that even at the height of the cold war, the United States used science diplomacy as a means to maintain communications and avoid misunderstanding between the world’s two nuclear powers – the Soviet Union and the United States. In a complex multi-polar world, relations are more challenging, the threats perhaps greater, and the need for engagement more paramount.

#### Global cooperation prevents multiple scenarios of nuclear war and conflict

**Zakaria**, 11/29/**2008** (Fareed - editor of Newsweek International, Wanted: A New Grand Strategy, Newsweek, p. lexis)

The "Global Trends" report identifies several worrying aspects of the new international order—competition for resources like oil, food, commodities and water; climate change; continued terrorist threats; and demographic shifts. But the most significant point it makes is that these changes are taking place at every level and at great speed in the global system. Nations with differing political and economic systems are flourishing. Subnational groups, with varied and contradictory agendas, are on the rise. Technology is increasing the pace of change. Such ferment is usually a **recipe for instability**. Sudden shifts can trigger sudden actions—terrorist attacks, secessionist outbreaks, **nuclear brinksmanship**. The likelihood of instability might increase because of the economic crisis. Despite some booms and busts—as well as 9/11 and the wars in Afghanistan and Iraq—the world has been living through an economic golden age. Global growth has been stronger for the past five years than in any comparable period for almost five decades. Average per capita income has risen faster than in any such period in recorded history. But that era is over. The next five years are likely to be marked by slow growth, perhaps even stagnation and retreat, in certain important areas. What will be the political effects of this slowdown? Historically, economic turmoil has been accompanied by social unrest, nationalism and protectionism. We might avoid these dangers, but it is worth being acutely aware of them. At the broadest level, the objective of the United States should be to **stabilize the current global order** and to create mechanisms through which change—the rise of new powers, economic turmoil, the challenge of subnational groups like Al Qaeda—can be **accommodated without overturning the international order**. Why? The world as it is organized today powerfully serves America's interests and ideals. The greater the openness of the global system, the better the prospects for trade, commerce, contact, pluralism and liberty. Any strategy that is likely to succeed in today's world will be one that has the active support and participation of many countries. Consider the financial crisis, which several Western governments initially tried to handle on their own. They seemed to forget about globalization—and nothing is more globalized than capital. Belatedly recognizing this, leaders held the G20 meeting in Washington. This was a good first step (though just a first step). Without a coordinated approach, efforts to patch up the system will fail. The same applies not just to "soft" problems of the future—pandemics, climate change—but to current security challenges as well. The problem of multilateralism in Afghanistan—a place where everyone claims to be united in the struggle—is a sad test case for the future. Thirty-seven nations, operating with the blessing of the United Nations and attacking an organization that has brutally killed civilians in dozens of countries, are still unable to succeed. Why? There are many reasons, but it does not help that few countries involved—from our European allies to Pakistan—are genuinely willing to put aside their narrow parochial interests for a broader common one. Terrorism in South Asia generally requires effective multinational cooperation. Business as usual will produce terrorism that will become usual. National rivalries, some will say, are in the nature of international politics. But that's no longer good enough. Without better and more sustained cooperation, it is difficult to see how we will solve most of the major problems of the 21st century. The real crisis we face is not one of capitalism or American decline, but of globalization itself. As the problems spill over borders, the demand for common action has gone up. But the institutions and mechanisms to make it happen are in decline. The United Nations, NATO and the European Union are all functioning less effectively than they should be. I hold no brief for any specific institution. The United Nations, especially the Security Council, is flawed and dysfunctional. But we need some institutions for global problem-solving, some mechanisms to coordinate policy. Unless we can find ways to achieve this, we should expect more crises and less success at solving them. In a world characterized by change, more and more countries—especially great powers like Russia and China and India—will begin to chart their own course. That in turn will produce **greater instability**. America cannot forever protect every sea lane, broker every deal and fight every terrorist group. Without some mechanisms to solve common problems, the world as we have come to know it, with an open economy and all the social and political benefits of this openness, will flounder and perhaps reverse. Now, these gloomy forecasts are not inevitable. Worst-case scenarios are developed so that they can be prevented. And there are many good signs in the world today. The most significant rising power—China—does not seem to seek to overturn the established order (as have many newly rising powers in the past) but rather to succeed within it. Considerable cooperation takes place every day at the ground level, among a large number of countries, on issues from nuclear nonproliferation to trade policy. Sometimes a crisis provides an opportunity. The Washington G20 meeting, for instance, was an interesting portent of a future "post-American" world. Every previous financial crisis had been handled by the IMF, the World Bank or the G7 (or G8). This time, the emerging nations were fully represented. At the same time, the meeting was held in Washington, and George W. Bush presided. The United States retains a unique role in the emerging world order. It remains the single global power. It has enormous convening, agenda-setting and leadership powers, although they must be properly managed and shared with all the world's major players, old and new, in order to be effective. President-elect Obama has powers of his own, too. I will not exaggerate the importance of a single personality, but Obama has become a global symbol like none I can recall in my lifetime. Were he to go to Tehran, for example, he would probably draw a crowd of millions, far larger than any mullah could dream of. Were his administration to demonstrate in its day-to-day conduct a genuine understanding of other countries' perspectives and an empathy for the aspirations of people around the world, it could change America's reputation in lasting ways. This is a rare moment in history. A more responsive America, **better attuned to the rest of the world**, could help create a new set of ideas and institutions—an architecture of peace for the 21st century that would bring stability, prosperity and dignity to the lives of billions of people. Ten years from now, the world will have moved on; the rising powers will have become unwilling to accept an agenda conceived in Washington or London or Brussels. But at this time and for this man, there is a unique opportunity to use American power to reshape the world. This is his moment. He should seize it.

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#### The United States Federal Government should:

#### --provide necessary funding for the National Ignition Facility, and

#### --establish openness and public confidence measures to ensure that the National Ignition Facility and any other government branch do not develop fusion weapons. This policy should include requirements for funding and approval of development of fusion weapons by the Executive and Congress.

#### Competes --- “For” requires primary purpose.

**Arterton 3** – US District Judge (Janet, Applera Corporation and Roche Molecular Systems, Inc., plaintiffs, v. MJ Research Inc. and Michael and John Finney, 3:98cv1201 (JBA), UNITED STATES DISTRICT COURT FOR THE DISTRICT OF CONNECTICUT, 292 F. Supp. 2d 348; 2003 U.S. Dist. LEXIS 20903, Lexis)

The ordinary meaning of the preposition "for," see Webster's New World Dictionary of the American Language 544 ("with the aim or purpose of; suitable to; appropriate for"), demonstrates the intended use of the well is that it be capable of holding a tube, and does not require that the tube actually be seated in the well, even though "one embodiment" requires the tubes be "seated in the sample block," '610 Patent, col. 8, l. 65 and col. 9, ll. 31-32, at least while performing PCR.

#### NIF is not energy production --- solves revitalization of the fusion industry.

**Clery**, October **2011** (Daniel – Deputy News Editor at Science Magazine, Inertial Confinement Fusion: Fusion Power’s Road Not Yet Taken, Science 28, Vol. 334, No. 6055, p. Highwire Press American Association for the Advancement of Science)

Fusion, the melding together of nuclei as opposed to the splitting apart that occurs in fission, sounds like the perfect energy source: Its fuel is cheap and plentiful (it comes from seawater), and it emits no carbon and minimal radioactive waste. What it does have is a credibility gap. Despite the enormous progress in understanding fusion and proving its viability, a genuine fusion power station always seems tantalizingly out of reach. Although researchers can cause fusion reactions in the lab, it takes more energy to make them happen than is produced. A major proof-of-principle step would be ignition: a self-sustaining fusion reaction that produces an excess of energy. As the name implies, Livermore's $3.5 billion laser center, the National Ignition Facility (NIF), has that goal in its sights (p. 449). NIF's main goal is not energy production but stockpile stewardship: validating computer simulations of nuclear explosions. Nevertheless, fusion researchers are hoping that that small explosion will be a huge boost to their field. “A sea change could come after ignition at NIF,” says Robert McCrory, director of the Laboratory for Laser Energetics (LLE) at the University of Rochester in New York state. Fusion energy research in the United States has been starved of funds over the past couple of decades, leading to the cancellation of many projects. And those involved in inertial confinement fusion (ICF), crushing pellets of fuel to cause small explosions, have been the poor relations compared with their colleagues in magnetic confinement fusion, who aim to confine much larger and less dense plasma using powerful magnets. Magnetic fusion researchers have pinned their hopes on ITER, a huge international reactor currently being built in France, which aims to prove the feasibility of magnetic fusion energy. The United States is committed to spend more than $1 billion on ITER, which is putting a severe strain on the Department of Energy's fusion budget (Science, 16 September, p. 1556). In contrast, ICF hasn't been treated as energy research at all. It gets most of its funding through the National Nuclear Security Administration because of its ability to mimic nuclear weapons. But with the twin threats of climate change and declining oil stocks, interest in alternative sources of energy is growing. So ICF researchers across the country have been drawing up plans for research that would be needed to take their techniques out of the lab and into prototype power plants. They want to be ready in the event that ignition at NIF leads to a surge of interest in ICF and new money. “The whole field is on the brink of some amazing physics,” says Michael Cuneo of Sandia National Laboratories in Albuquerque, New Mexico. Others are skeptical about the pace. McCrory says he won't believe that's possible “until they make a prototype beamline and do many shots.” Nevertheless, they admire Livermore's ambition. “Livermore is in the vanguard of getting industry involved,” McCrory says. “They're way ahead, the leading candidate.”

#### The CP solves the entirety of the case --- restores U.S. fusion leadership and results in commercialization.

**Holland**, 10/17/**2012** (Andrew – senior fellow for energy and climate at the American Security Project, Why the New York Times is Wrong on the National Ignition Facility, AOL Energy, p. <http://energy.aol.com/2012/10/17/why-the-new-york-times-is-wrong-on-the-national-ignition-facilit/>)

Finally, the Times made a budgetary argument, saying that "we suspect the money would be better spent on renewable sources of energy" and that, even if experiments are successful, a demonstration plant "will cost billions and may ultimately show that fusion is not a practical source of power." Each of these arguments is a mere assertion, unsupported by facts. I am not going to argue against funding for basic research into renewable sources of energy, but I would argue that the government's role in basic research and development, like the NIF, is much clearer and more cost effective than support to commercialize a technology. "Picking winners" is more difficult than supporting research. Fusion is a technology that, once it is scientifically proven and its engineering perfected, could quickly be commercialized. The NIF's leadership has already convened an advisory board of industry and utilities that is eager to move forward with a demonstration plant and commercial deployment, once fusion is proven and deemed feasible. When we talk about budgets, we need to remember that the American economy spends over $1 trillion every year on its energy system. The built infrastructure supporting this system represents many trillions worth of investment by the private and public sector alike over decades. Even in a time of budget scrutiny, the cost-benefit analysis should come down in favor of continued research. Ultimately, the important question is not whether the NIF failed to meet its goal by the end of the fiscal year. The more important question is whether or not the facility's research is worth the investment. The goal of achieving fusion ignition would be the culmination of more than six decades of scientific research and development. Fusion is often called the "holy grail" of energy. It promises to be a virtually limitless source of energy that is clean, safe, and sustainable. Ignition would lead the way to true "energy independence" - in every sense. We would no longer have to import energy from the far corners of the world. Our economy would no longer suffer at the whims of unpredictable price fluctuations. We would no longer have to fight about where to put our nuclear waste. Surely, this is a prize worth investing in? Successfully commercializing fusion would initiate a new industry, under American leadership. If we do not seize this opportunity, we can be sure that other countries will try to move into the lead: already Russia, China, and France are building facilities that could outclass the NIF. The prize here is so great that we must continue research into fusion of all sorts. While NIF has received the most attention, it is not the only entity conducting research on fusion. Sandia National Lab, Princeton, MIT, General Atomics, and others around the world are working on experiments to prove fusion is a viable source of future energy. These all deserve continued support from the government. The NIF, in particular, is one of the crown jewels of American science, and we cannot allow its considerable achievements to be lost at the altar of false budgetary prudence.

#### CP avoids the ITER DA.

**Chu and Feinstein**, 3/14/**2012** (Steven – Secretary of Energy, and Diane – Senator from California, Hearing on FY 2013 Budget Request for the Dept. of Energy, Committee on Appropriations, Subcommittee on Energy and Water Development, p. <http://www.fusionfuture.org/wp-content/uploads/2012/03/Feinstein-Tester-Reed_Chu_testimony_Senate_Energy_Water_14_03_2012_v3.pdf>)

Feinstein: ...Let’s go to fusion and ITER and the 150 million this year with the United States’ contribution to ITER subject to grow to 300 million. Now, this is going to take money away from domestic fusion programs. They’re already concerned at NIF and also other scientific priorities, such as materials and biology research. Here’s the question. Should the United States consider withdrawing from ITER, or at least reducing the United States’ contribution and if we continue to fund it, where will $300M come from? Chu: Well, Senator, you’re asking a very important question that we ask ourselves, but first, let me assure you that the program at NIF is not actually competing with ITER. NIF is supported by the NNSA budget and we want to make sure that that new program goes forward.

## New Advantage

### Cyberterror – AT Accidental Launch

#### -- Nuclear weapons are protected from hacking

Green 2 (Joshua, Editor – Washington Monthly, “The Myth of Cyberterrorism”, Washington Monthly, November,

http://www.washingtonmonthly.com/features/2001/0211.green.html#byline)

When ordinary people imagine cyberterrorism, they tend to think along Hollywood plot lines, doomsday scenarios in which terrorists hijack nuclear weapons, airliners, or military computers from halfway around the world. Given the colorful history of federal boondoggles--billion-dollar weapons systems that misfire, $600 toilet seats--that's an understandable concern. But, with few exceptions, it's not one that applies to preparedness for a cyberattack. "The government is miles ahead of the private sector when it comes to cybersecurity," says Michael Cheek, director of intelligence for iDefense, a Virginia-based computer security company with government and private-sector clients. "Particularly the most sensitive military systems." Serious effort and plain good fortune have combined to bring this about. Take nuclear weapons. The biggest fallacy about their vulnerability, promoted in action thrillers like WarGames, is that they're designed for remote operation. "[The movie] is premised on the assumption that there's a modem bank hanging on the side of the computer that controls the missiles," says Martin Libicki, a defense analyst at the RAND Corporation. "I assure you, there isn't." Rather, nuclear weapons and other sensitive military systems enjoy the most basic form of Internet security: they're "air-gapped," meaning that they're not physically connected to the Internet and are therefore inaccessible to outside hackers. (Nuclear weapons also contain "permissive action links," mechanisms to prevent weapons from being armed without inputting codes carried by the president.) A retired military official was somewhat indignant at the mere suggestion: "As a general principle, we've been looking at this thing for 20 years. What cave have you been living in if you haven't considered this [threat]?"

### Nuclear Firebreak

#### NO breakdown

Quinlan 9 (Sir Michael Quinlan, Former Permanent Under-Secretary of State UK Ministry of Defense, Thinking About Nuclear Weapons: Principles, Problems, Prospects, p. 63-69, The book reflects the author's experience across more than forty years in assessing and forming policy about nuclear weapons, mostly at senior levels close to the centre both of British governmental decision-making and of NATO's development of plans and deployments, with much interaction also with comparable levels of United States activity in the Pentagon and the State department)

Even if initial nuclear use did not quickly end the fighting, the supposition of inexorable momentum in a developing exchange, with each side rushing to overreaction amid confusion and uncertainty, is implausible. It fails to consider what the situation of the decision-makers would really be. Neither side could want escalation. Both would be appalled at what was going on. Both would be desperately looking for signs that the other was ready to call a halt. Both, given the capacity for evasion or concealment which drive modern delivery platforms and vehicles can possess, could have in reserve significant forces invulnerable enough not to entail use-or-lose pressures. (It may be more open to question, as noted earlier, whether newer nuclear weapon possessors can be immediately in that position; but it is within reach of any substantial state with advanced technological capabilities and attaining it is certain to be a high priority in the development of forces.) As a result, neither side can have any predisposition to suppose, in an ambiguous situation of fearful risk, that the right course when in doubt is to go on copiously launching weapons. And none of this analysis rests on any presumption of highly subtle or pre-concerted rationality. The rationality required is plain. The argument is reinforced if we consider the possible reasoning of an aggressor at a more dispassionate level. Any substantial nuclear armoury can inflict destruction outweighing any possible prize that aggression could hope to seize. A state attacking the possessor of such an armoury must therefore be doing so (once given that it cannot count upon destroying the armoury pre-emptively) on a judgment that the possessor would be found lacking in the will to use it. If the attacker possessor used nuclear weapons, whether first or in response to the aggressor’s own first use, this judgment would begin to look dangerously precarious. There must be at least a substantial probability of the aggressor leaders’ concluding that their initial judgment had been mistaken—that the risks were after all greater than whatever prize they had been seeking, and that for their own country’s survival they must call off the aggression. Deterrence planning such as that of NATO was directed in the first place to preventing the initial misjudgment and in the second, if it were nevertheless made, to compelling such a reappraisal. The former aim had to have primacy, because it could not be taken for granted that the latter was certain to work. But there was no ground for assuming in advance, for all possible scenarios, that the chance of its working must be negligible. An aggressor state would itself be at huge risk if nuclear war developed, as its leaders would know. It may be argued that a policy which abandons hope of physically defeating the enemy and simply hopes to get him to desist is pure gamble, a matter of who blinks first; and that the political and moral nature of most likely aggressors, almost ex hypothesi, makes them less likely to blink. One response to this is to ask what is the alternative—it can be only surrender. But a more hopeful answer lies in the fact that the criticism is posed in a political vacuum. Real-life conflict would have a political context.

### Solvency 1NC

#### Despite progress, fusion is still decades away.

**Bullis**, 5/1/**2012** (Kevin – senior editor on energy at MIT’s Technology Review, Physicists Crack Fusion Mystery, Technology Review, p. http://www.technologyreview.com/news/427798/physicists-crack-fusion-mystery/)

Researchers have made a lot of progress on fusion technology—since 1970, the energy produced in experimental fusion reactors has increased by about 12 orders of magnitude, greater than the improvement in processing power in microchips over the same period, says Martin Greenwald, a fusion researcher at MIT. But for all the improvements in fusion research reactors, they still aren't useful—they don't produce more energy than they consume, and they can't be run continuously, both of which would be necessary for a power plant. The new work, like so much in the realm of fusion research, is a step toward practical fusion power, but by no means does it solve all the problems. Based on experiments, there is a practical limit to how dense the plasma in a reactor can be. Beyond a certain density, the plasma becomes unstable, dissipates its energy, and disappears. Because researchers don't understand exactly what causes this, it's difficult to predict exactly when the collapse will happen, so researchers avoid getting close to that limit in experimental reactors. The Princeton work allows engineers to better predict what will happen in the reactor, potentially allowing them to design reactors that get closer to a theoretically optimum density for the plasma. That, in turn, could increase the amount of power a fusion power plant could generate. According to the researchers' theory, islands develop within the plasma that cool off and cause the plasma to disappear. These islands—which are easily identified—could be selectively heated with microwaves, the researchers think, which could keep the plasma stable. David Gates, a principal research scientist at PPPL and one of the key researchers on the project, says he expects they will be able to test the theory in research reactors this year. While the theory is plausible, Greenwald says, it doesn't solve all the problems for reactors. It only explains part of the mechanisms involved in limiting the density of the plasma. And researchers still need to solve many practical problems before optimizing energy density is even an issue, he says. Solving these problems will require a combination of better theories, more computing power, better algorithms, and big experiments. That's why researchers still say practical fusion power plants remain decades away.

#### Not enough fuel to commercialize.

**Ryan 11** (D.A., Masters in Mechanical Engineering and a PhD in solar energy systems, “A critical analysis of future nuclear reactors designs,” 8-11-11, <http://www.green-blog.org/2011/08/11/a-critical-analysis-of-future-nuclear-reactors-designs/>)

Fusion? Finally, I also had a look at Fusion power . This is the great white hope of nuclear energy and it has to be said we are making progress, but it’s a case of slow and steady progress. Indeed I would question whether we are in a position yet to even estimate how long it will take for fusion power to become commercial available…if indeed ever! Recent news from ITER is not positive, its now not due to go online till 2026, which would imply a completion of experiments in 2046. And it will take sometime beyond that before we wind up with a viable working commercial fusion reactor. As I speculate (here), it would likely be the latter half of this century (or the beginning of the next one) before we start to see Fusion play any sort of major role in mass global power generation. Also the first generation of Fusion reactors will be dependant on supplies of Lithium for fuel, of which there is only a limited global supply available, something that limits the amount of energy which can ultimately be generated from Fusion reactors, probably to between 8-20% of global energy use depending on whose figures you believe. Where does the other 92-80% come from? And of course we have to contemplate the possibility that commercial Fusion energy never arrives. While speaking personally, I still have confidence that the necessary breakthroughs will be achieved according to a reasonable timetable, it would be foolish to blindly assume that they will. To build any nations energy strategy on the forlorn hope that fusion power will arrive on the scene by a certain date, makes about as much sense as selling your house and all your worldly goods because some preacher told you the world was going to end on a particular date. Curb your enthusiasm! All in all, my conclusions are that the case for future Generation IV nuclear reactors is much narrower than the supporters of nuclear energy would have you believe – even the case for Fusion doesn’t look that clear cut! And again I would note that this last point about Fusion is important, the way the nuclear energy supporters (and indeed many politicians and members of the public) go on you’d swear Fusion was already a slam dunk. Nothing could be further from the truth! Nuclear energy supporters need to curb they’re enthusiasm for nuclear energy and accept that due to the high capital costs of reactor construction and the limited fuel supplies it will always only ever be a small bit player in a big energy market, at least as far as the current century is concerned. It currently generates about 1.9 – 5.1% of global energy (depending on how you do your maths) and I don’t see how it can be expanded beyond that level, indeed if they manage to maintain this level I suspect they’ll be doing well. Even the most optimistic nuclear energy program we can draw up still has a substantial energy gap and something else will have to fill it. This of course means we’ll need to rely on renewables for substantially more energy than we currently get from it. Which means many nuclear energy supporters need to overcome their pathological hatred of renewables and if they are truly serious about combating climate change (as many claim to be) then they need to quit trying to throw the baby out with the bath water.

#### Coulomb barrier prevents fusion.

**Murphy**, 1/31/**2012** (Tom – associate professor of physics at the University of California, San Diego, Nuclear Fusion, Do the Math, p. <http://physics.ucsd.edu/do-the-math/2012/01/nuclear-fusion/>)

A simple obstacle stands between us and fusion. It’s called the Coulomb barrier. Protons hate to get near each other, on account of their mutual positive charge and concomitant electrostatic repulsion. And they must get very close—about 10−15 m—before the strong nuclear force overpowers Coulomb’s vote. Even on a perfect collision course, two protons would have to have a closing velocity of 20 million meters per second (7% the speed of light) to get within 10−15 m of each other, corresponding to a temperature around 5 billion degrees! Even if the velocity is sufficient, the slightest misalignment will cause the repulsive duo to veer off course, not even flirting with contact. Quantum tunneling can take a bit of the edge off, requiring maybe a factor of two less energy/closeness, but all the same, it’s frickin’ hard to get protons together. Yet our Sun manages to do it, at a mere 16 million degrees in its core. How does it manage to make a profit? Volume. The protons in the Sun are racing around at a variety of velocities according to the temperature. While the typical velocity is far too small to defeat the Coulomb barrier, some speed demons on the tail of the velocity distribution curve do have the requisite energy. And there are enough of them in the vast volume of the Sun’s core to occasionally hit head on and latch together. One of the protons must promptly beta-plus decay into a neutron and presto-mundo, we have a deuteron! Deuterons can then collide to make helium (other paths to helium are also followed). A quick and crude calculation suggests that we need about 1038 “sticky” collisions per second to keep the Sun going, while within the core we get about 1064 bumps/interactions per second, implying only one in 1026 collisions needs to be a successful fusion event. Deuterons have an easier time bumping into each other than do lone protons, mainly because their physical size is larger. In fact, a deuteron’s relatively weak binding makes them even puffier than the more tightly bound tritium nucleus (go tritons!). At a given temperature, deterons will move more slowly than protons, and tritons more slowly than deuterons. All flavors contain a single proton—and so exert the same repulsive force on each other—but the increased inertia from extra neutrons exactly counters the slower speed, so that each has the same likelihood of trucking through the Coulomb barrier. Then we’re left with size. Deuterons are bigger than tritons, so D-D bumps will be more common than D-T bumps. But there’s a catch. As soon as D and T touch, they stick together. Conversely, when D touches D, a photon (light) must be emitted in order for them to stick, which doesn’t usually happen. It is therefore said that D-T has a greater cross section for fusion than D-D. Estimates for the critical temperature required to achieve fusion come in at 400 million Kelvin for D-D fusion, and 45 million K for the D-T variety. But these temperature thresholds depend on the density of the plasma involved, so should not be taken as hard-and-fast. Still, we need our fusion reactors to be hotter than the center of the Sun because we do not have the luxury of volume and density that the solar core enjoys. Does this fact give you pause? Confinement Overcoming the Coulomb barrier requires enormous kinetic energies of the particles, translating into enormous temperatures—well beyond any container’s ability to hold. No material resists melting above a mere 5000 K. 50 million degrees is not even funny.

#### Radioactivity kills public support --- collapses commercialization.

**Hirsch**, 10/16/**2012** (Robert L. – former senior energy program advisor for Science Applications International Corporation, Senior Energy Advisor at MISI, Where to Look for Practical Fusion Power, Presented at the 14th U.S.-Japan IECF Workshop, p. <http://dotearth.blogs.nytimes.com/2012/10/19/a-veteran-of-fusion-science-proposes-narrowing-the-field/>)

Next, there’s the induced radioactivity in the structure and moderator of a tokamak power reactor. Some tokamak proponents contend that structure might be made out of an exotic material that will have low induced radioactivity. Maybe, but last I looked, such materials were very expensive and not in common use in the electric power industry. So if one were to decide to use such materials, there would be another boost to cost, along with an added difficulty for industry to deal with. No matter what materials are chosen, there will still be neutron-induced materials damage and large amounts of induced radioactivity. There will thus be remote operations required and large amounts of radioactive waste that will have to be handled and sent off site for cooling and maybe burial. That will be expensive and the public is not likely to be happy with large volumes of fusion-based radioactivity materials being transported around the country. Remember the criteria of public acceptance. I could go on with other downsides and showstoppers associated with tokamak fusion power, but I won’t. It is enough to say that tokamak fusion power has what I believe are insurmountable barriers to practicability and acceptability.

### Status Quo Solves 1NC

#### General Fusion solves --- will commercialize fusion soon.

**Cunningham**, 9/17/**2012** (Nicholas, Startup Company Hopes to do Fusion Energy Cheaper and Faster, American Security Project, p. http://americansecurityproject.org/blog/2012/startup-company-hopes-to-do-fusion-energy-cheaper-and-faster/)

However, one small company, backed by venture capital, hopes to make fusion energy a reality in much shorter time frame. General Fusion, a company based in Canada, is seeking to achieve “net energy gain” – more energy out than is put in – by the end of next year. This is an ambitious goal. In comparison, an internationally-supported fusion reactor is under construction in the south of France, with major fusion labs around the world contributing their expertise, and they hope to achieve net energy gain sometime in the 2020’s. General Fusion also calculates that it can do it at a fraction of the cost. It is backed by $32.5 million in venture capital, notably from Chrysalix, a cleantech venture capital firm. It also received about $14 million in grant money from the Canadian government. When compared to the billions in funding for large fusion labs, it is easy to understand the excitement surrounding General Fusion. So how do they plan on proving fusion is possible cheaper and faster than the big labs? General Fusion is combining the two main approaches to fusion energy (magnetic confinement fusion and inertial confinement fusion) into a technique called “Magnetized Target Fusion.” According to their website: “Magnetized target fusion first traps a relatively low-temperature and low-density plasma of deuterium and tritium in a magnetic field (similar to magnetic fusion) and then compresses the plasma to high-temperature and high-density fusion conditions (much like inertial confinement fusion). This hybrid approach compresses the target more slowly than inertial confinement fusion, allowing the energy for compression to be delivered by much less expensive technology than lasers. Magnetized target fusion also creates higher density conditions than magnetic fusion, reducing the required containment time. Together, this combination of a slower compression rate and shorter containment time results in a simpler, cheaper and less power-intensive fusion generator design.” General Fusion believes it will prove net energy gain by the end of 2013. After that, the next step will be to build a full-scale demonstration plant, estimated to be complete by 2016 at a cost of about $1 billion. If successful, General Fusion believes it can have commercial reactors on the grid by the end of the decade.

#### Other countries are getting fusion.

**Prager**, 5/12/**2011** (Stewart – Director of the U.S. Department of Energy’s Princeton Plasma Physics Laboratory, PPL: Great Story, Bright Future, p. <http://www.pppl.gov/polPressReleases.cfm?doc_id=772>)

What kind of fusion research programs are being pursued in other countries? There has been a surge of interest in Asia. South Korea has blasted onto the fusion scene and recently begun operating a new experiment. This type of new experiment was designed to be built at PPPL, but it was cancelled by the Department of Energy because of lack of funds. Korean researchers picked up the idea and built it. They also are now discussing moving forward to a demonstration fusion power plant. Exactly the same can be said about China. Chinese researchers also have built a similar kind of new experiment and recently begun operations. The Chinese fusion program is growing in leaps and bounds. The same can be said for the European Union. Parts of it have always been strongly supportive of fusion research. Germany is constructing a new facility. And, of course, the E.U. is hosting ITER (which is being built in France.) The Indian government is increasing its fusion program; it is presently constructing a new facility similar in type to the Chinese and Korean facilities but not quite as powerful. The Japanese government also is refurbishing the country’s large tokamak to such an extent that it is also going to be a new, major facility. So those countries are really outbuilding the United States in fusion.

## Fusion Advantage

### 1NC Air Power

#### -- Air power strong – no challengers

Bartlett 8 (Roscoe, House Representative (R-MD), Testimony before the Joint Hearing on Fiscal Year 2009 Budget

Request for Tactical Aviation Programs, Congressional Documents and Publications, 3-11, Lexis)

"Today, the United States' airpower is **unrivaled**. It allows us to hold virtually any fixed surface target and many moving or buried targets on the planet at risk. While we used to require many planes to service a single target-or at least one plane per target-now a single aircraft can perform multiple missions. Indeed, we are no longer constrained by the physical location of the pilot. With the advent of unmanned aerial vehicles, which, of course, cannot replace manned aircraft in all circumstances, we are able to command and control aircraft around the world from air bases in the United States. In fact, it is these very advances which have led me to question, as have Admirals Stansfield Turner and Art Cebrowski, if the day of the aircraft carrier has come and gone.

#### Air power fails

Guardiano 9 (John, Marine – Iraq and Worker – Army’s Future Combat Systems, “Air Power Alone Cannot Win Wars”, New Majority, 8-12, http://www.newmajority.com/air-power-alone-cannot-win-wars)

One of the great lessons of recent military history is that wars cannot be won through air power alone; you need boots on the ground. Recall, for instance, the exaggerated claims of “shock and awe” prior to the 2003 liberation of Iraq. Exponents of air power had assured us that the decisive exercise of military power, principally through aerial bombardment, could paralyze the enemy, destroy his will to fight, and render him impotent. In fact, it was only after U.S. soldiers and Marines engaged the enemy in close combat that Iraqi government and Fedayeen forces surrendered and Iraq was liberated. Even then it took additional close combat over several years ─ in Fallujah, Mosul, Najaf, Baghdad, and elsewhere ─ before the military component of the Iraq War was truly won. And Iraq is hardly the only example that proves the crucial necessity of ground forces in modern-day conflicts. In Afghanistan, for instance, U.S. Marines are today engaging the enemy in close-quarters combat to protect the Afghan citizenry. Jets and air ordinance can’t do this; only soldiers and Marines can. The Israelis, too, have learned the hard way that ground forces are integral to victory. Indeed, their 2006 battle against Hezbollah made heavy use of air, naval, and rocket attacks, but to little avail. Israeli tanks, moreover, were destroyed by Hezbollah guerillas, who made effective use of advanced technology to fight the powerful Israeli military to a standstill.The lesson then and now is clear: In significant respects, air power is irrelevant to modern-day conflicts. Military success today requires small-scale infantry units who can fight lethally and with precision in populated areas filled with civilian non-combatants. And our infantry units had better be equipped with the latest and greatest technology: because our enemies certainly are, thanks to the internet, eBay, and other virtual bazaars. Yet, old habits die hard; the siren song of air power ─ the false allure of “shock and awe” ─ lives on. Its latest manifestation occurred last week in the Wall Street Journal, where retired Air Force General Chuck Wald argues that an American military “bombing campaign would set back Iranian nuclear development…”

Visa alt caus

### AT Retaliation (General)

#### 1. No risk of an attack on US soil – no group is capable

Carle 7/16/08 - a member of the CIA's Clandestine Service for 23 years

[Carle, L. Glenn, “ A member of the CIA's Clandestine Service for 23 years , ” The Salt Lake Tribune, July 16, 2008, http://www.sltrib.com/opinion/ci\_9901142]

Sen. John McCain has repeatedly characterized the threat of "radical Islamic extremism" as "the absolute gravest threat ... that we're in against." Before we simply accept this, we need to examine the nature of the terrorist threat facing our country. If we do so, we will see how we have allowed the specter of that threat to distort our lives and take our treasure. The "Global War on Terror" has conjured the image of terrorists behind every bush, the bushes themselves burning, and an angry god inciting its faithful to religious war. We have been called to arms, built fences, and compromised our laws and the practices that define us as a nation. The administration has focused on pursuing terrorists and countering an imminent and terrifying threat. Thousands of Americans have died as a result, as have tens of thousands of foreigners. The inclination to trust our leaders when they warn of danger is compelling, particularly when the specters of mushroom clouds and jihadists haunt every debate. McCain, accepting this view of the threats, pledges to continue the Bush administration's policy of few distinctions but ruthless actions. I spent 23 years in the CIA. I drafted or was involved in many of the government's most senior assessments of the threats facing our country. I have devoted years to understanding and combating the jihadist threat. We rightly honor as heroes those who serve our nation and offer their lives to protect ours. We all "support the troops." Yet the first step for any commander is to understand the enemy. The next commander in chief should base his counterterrorism policies on the following realities: We do not face a global jihadist "movement" but a series of disparate ethnic and religious conflicts involving Muslim populations, each of which remains fundamentally regional in nature and almost all of which long predate the existence of al-Qaida. Osama bin Laden and his disciples are small men and secondary threats whose shadows are made large by our fears. Al-Qaida is the only global jihadist organization and is the only Islamic terrorist organization that targets the U.S. homeland. Al-Qaida remains capable of striking here and is plotting from its redoubt in Waziristan, Pakistan. The organization, however, has only a handful of individuals capable of planning, organizing and leading a terrorist operation. Al-Qaida threatens to use chemical, biological, radiological or nuclear weapons, but its capabilities are far inferior to its desires. Even the "loose nuke" threat, whose consequences would be horrific, has a very low probability. For the medium term, any attack is overwhelmingly likely to consist of creative uses of conventional explosives. No other Islamic-based terrorist organization, from Mindanao to the Bekaa Valley to the Sahel, targets the U.S. homeland; is part of a "global jihadist movement"; or has more than passing contact with al-Qaida. These groups do and will, however, identify themselves with global jihadist rhetoric and may bandy the bogey-phrase of "al-Qaida." They are motivated by hostility toward the West and fear of the irresistible changes that education, trade, and economic and social development are causing in their cultures. These regional terrorist organizations may target U.S. interests or persons in the groups' historic areas of interest and operations. None of these groups is likely to succeed in seizing power or in destabilizing the societies they attack, though they may succeed in killing numerous people through sporadic attacks such as the Madrid train bombings. There are and will continue to be small numbers of Muslims in certain Western countries - in the dozens, perhaps - who seek to commit terrorist acts, along the lines of the British citizens behind the 2005 London bus bombings. Some may have irregular contact with al-Qaida central in Waziristan; more will act as free agents for their imagined cause. They represent an Islamic-tinged version of the anarchists of the late 19th century: dupes of "true belief," the flotsam of revolutionary cultural change and destruction in Islam, and of personal anomie. We need to catch and neutralize these people. But they do not represent a global movement or a global threat. The threat from Islamic terrorism is no larger now than it was before Sept. 11, 2001. Islamic societies the world over are in turmoil and will continue for years to produce small numbers of dedicated killers, whom we must stop. U.S. and allied intelligence do a good job at that; these efforts, however, will never succeed in neutralizing every terrorist, everywhere. Why are these views so starkly at odds with what the Bush administration has said since the beginning of the "Global War on Terror"? This administration has heard what it has wished to hear, pressured the intelligence community to verify preconceptions, undermined or sidetracked opposing voices, and both instituted and been victim of procedures that guaranteed that the slightest terrorist threat reporting would receive disproportionate weight - thereby comforting the administration's preconceptions and policy inclinations. We must not delude ourselves about the nature of the terrorist threat to our country. We must not take fright at the specter our leaders have exaggerated. In fact, we must see jihadists for the small, lethal, disjointed and miserable opponents that they are.

#### 2. Public anxiety prevents retaliation

Huddy et al. 05 – Professor of political science @ Stony Brook University, Stony Brook, NY [Leonie Huddy, Stanley Feldman (Professor of political science @ Stony Brook University, Stony Brook, NY), Charles Taber (Professor of political science @ Stony Brook University, Stony Brook, NY) & Gallya Lahav (Professor of political science @ Stony Brook University, Stony Brook, NY), “Threat, Anxiety, and Support of Antiterrorism Policies,” American Journal of Political Science, Vol. 49, No. 3, July 2005, Pp. 593–608]

The findings from this study lend further insight into the future trajectory of support for antiterrorism measures in the United States when we consider the potential effects of anxiety. Security threats in this and other studies increase support for military action (Jentleson 1992; Jentleson and Britton 1998;Herrmann,Tetlock, and Visser 1999). But anxious respondents were less supportive of belligerent military action against terrorists, suggesting an important source of opposition to military intervention. In the aftermath of 9/11, several factors were consistently related to heightened levels of anxiety and related psychological reactions, including living close to the attack sites (Galea et al. 2002; Piotrkowski and Brannen 2002; Silver et al. 2002), and knowing someone who was hurt or killed in the attacks (in this study). It is difficult to say what might happen if the United States were attacked again in the near future. Based on our results, it is plausible that a future threat or actual attack directed at a different geographic region would broaden the number of individuals directly affected by terrorism and concomitantly raise levels of anxiety. This could, in turn, **lower support for overseas military action**. In contrast, in the absence of any additional attacks levels of anxiety are likely to decline slowly over time (we observed a slow decline in this study), weakening opposition to future overseas military action. Since our conclusions are based on analysis of reactions to a single event in a country that has rarely felt the effects of foreign terrorism, we should consider whether they can be generalized to reactions to other terrorist incidents or to reactions under conditions of sustained terrorist action. Our answer is a tentative yes, although there is no conclusive evidence on this point as yet. Some of our findings corroborate evidence from Israel, a country that has prolonged experience with terrorism. For example, Israeli researchers find that perceived risk leads to increased vilification of a threatening group and support for belligerent action (Arian 1989; Bar-Tal and Labin 2001). There is also evidence that Israelis experienced fear during the Gulf War, especially in Tel Aviv where scud missiles were aimed (Arian and Gordon 1993). What is missing, however, is any evidence that anxiety tends to undercut support for belligerent antiterrorism measures under conditions of sustained threat. For the most part, Israeli research has not examined the distinct political effects of anxiety. In conclusion, the findings from this study provide significant new evidence on the political effects of terrorism and psychological reactions to external threat more generally. Many terrorism researchers have speculated that acts of terrorist violence can arouse fear and anxiety in a targeted population, which lead to alienation and social and political dislocation.8 We have clear evidence that the September 11 attacks did induce anxiety in a sizeable minority of Americans. And these emotions were strongly associated with symptoms of depression, appeared to inhibit learning about world events, and weakened support foroverseas military action. This contrasted, however, with Americans’ dominant reaction, which was a heightened concern about future terrorist attacks in the United States that galvanized support for government antiterrorist policy. In this sense, the 9/11 terrorists failed to arouse sufficient levels of anxiety to counteract Americans’ basic desire to strike back in order to increase future national security, even if such action increased the shortterm risk of terrorism at home. Possible future acts of terrorism, or a different enemy, however, could change the fine balance between a public attuned to future risks and one dominated by anxiety.

#### Retaliation unlikely – attribution is too complex

Erwin and Manguson, 9 (Sandra, Editor, and Stew, Senior Editor, National Defense, “7 deadly myths about weapons of terror.” 6-1, 94:667, L/N)

4 Myth: If the U.S. Were the Victim of a Nuclear Attack, It Would Immediately Retaliate \* Under the nightmare scenario of a nuclear bomb exploding in a U.S. city, the implied assumption is that the nation's leaders would immediately be able to fire back. That would be the case under the Cold War rules of nuclear retaliation, but the situation is far more complicated when nuclear attacks are perpetrated by non-state actors such as terrorist organizations. Unless the weapon is delivered by a missile, immediate retaliation isnot realistic, experts said. It could take weeks or months to figureout where the nuclear materials came from or how the explosive device was built. No state or terrorist group would choose to launch a nuclear weapon by missile because we would know the origin, said Evan Montgomery, of the Center for Strategic and Budgetary Assessments. The more likely means to execute a nuclear attack would be to smuggle the materials and build the bomb on U.S. soil, or steal a bomb and somehow manage to bring it into the United States. Either way, U.S. nuclear experts may not be able to quickly determine the origin of the weapon once it's detonated. Forensics can take weeks or months, said Charles Blair, director of the Center for Terrorism and Intelligence Studies and co-author of a recently published book titled, "Jihadists and Weapons of Mass Destruction." "None of the systems we have now are very quick," he said. "Government officials and the public would have to be willing to wait a while before we retaliate." Nuclear forensics usually is based on falloutand debris. Within hours, U.S. authorities could determine that it was a nuclear explosion. It would take up to a couple of days to determine if there was uranium, plutonium or a mix of the two in the weapon. It's known that eight nations have plutonium bombs, and six othershave enough plutonium to build a bomb. If there were a nuclear explosion of a plutonium based weapon, it could be traced to one of 14 countries. With uranium-based weapons, it's more complicated. There are 40 countries that have enough uranium to build at least one bomb. That would take longer to track, said Blair. "You can take debris samples andcompare them against known tests. You can within several weeks tracethe design to known designs." Nuclear forensics would be far easier if there were a single global database that listed all known methods of creating uranium or plutonium, and catalogued the weapon designs, Blair said. But such a database is unlikely to ever materialize. States prefer to not reveal information about the fissile materials they use or their methods for constructing a weapon. The world's largest nuclear powers, the United States and Russia, both go to great lengths to protect their top secretdata on the isotopic composition of their weapons grade plutonium. Even for the United States it's been a challenge to keep track of its own plutonium. Ola Dahlman, a nuclear physicist and advisor to the Swedish Ministry of Foreign Affairs, said there is one cubic meter of plutonium that the United States cannot account for. "Nobody is really concerned," he told National Defense. "But it shows how hard it is to keep track of things." Because plutonium is not a naturally occurring substance, it can only be made in reactors. Identifying the origin in this case would besomewhat easier because reactors have identifiable signatures. With uranium weapons the situation gets more complex because experts would have to figure out how it was enriched. "It doesn't leave many maces," said Blair. Considering how many nuclear weapons still exist on the planet, itmay be shocking to many that nuclear forensics is a vanishing science in the United States, The nation currently has only 40 to 45 scientists who are nuclear forensics experts working at national laboratories, said Blair. "Most are pretty old and will be dying soon." Only seven universities in the United States offer graduate degrees in radiochemistry, which is one of the primary drivers of nuclear forensics, says Blair. Of those seven programs, four are staffed by just one faculty member. "The U.S. doesn't really have the brainpower right now to really attack this," said Blair. It's also worth noting that no single U.S. government agency is entirely responsible for nuclear attribution. The Department of Homeland Security's Domestic Nuclear Detection Office comes the closest. It operates a nuclear forensic center that coordinates the work of sevenagencies. But the lines of responsibility are blurred, Blair said. If an attack occurred, the FBI would probably step in right away to investigate but the national labs would want to preserve the evidence untouched so they could collect debris, Blair said. There would be turf battles within the government, which would complicate the forensicswork.

#### -- No retaliation

Davis and Jenkins 2 (Paul K., Professor – RAND Corporation and Research Leader – Naval Studies Board, and Brian M., Special Advisor – RAND Corporation and International Chamber of Commerce, RAND Research Paper,

http://www.rand.org/publications/MR/MR1619/MR1619.pdf)

Deterring acquisition and use of WMD is profoundly important and difficult. Terrorists appear to have grandiose intentions, and some have intense interest in such weapons. Moreover, they may believe that they have what a Cold War theorist would call “escalation dominance.” That is, al Qaeda could use WMD against the United States, but retaliation—and certainly escalation— would be difficult because (1) the United States will not use chemical, biological, or radiological weapons; (2) its nuclear weapons will seldom be suitable for use; and (3) there are no good targets (the terrorists themselves fade into the woodwork). And, of course, the United States has constraints. Although this gap in the deterrent framework is dismissed by some, we regard it as very dangerous.

#### -- No targets and can’t trace weapons

Dowle 5 (Marke, Graduate School of Journalism – University of California, Berkeley, California Monthly, September, http://www.alumni.berkeley.edu/Alumni/Cal\_Monthly/September\_2005/COVER\_STORY-\_Berkeleys\_Big\_Bang\_Project\_.asp)

Because terrorists tend to be stateless and well hidden, immediate **retaliation** in kind **is** almost **impossible**. But some nuclear explosions do leave an isotopic signature, a DNA-like fingerprint that allows forensic physicists such as Naval Postgraduate School weapons systems analyst Bob Harney to possibly determine the origin of the fissile material in the bomb. **Nuclear forensics is not a precise science**, Harney warns. Post-attack sites are almost certain to be contaminated with unrelated or naturally occurring radioactivity, and there are numerous, highly enriched uranium stashes in the world with unknown signatures. But there is no question, according to Peter Huessy, a member of the Committee on the Present Danger and consultant to the National Defense University in Washington, D.C., that Russian forensic experts could quickly detect Russian isotopes, and that highly enriched uranium (HEU) from, say, France could readily be differentiated from American HEU. But, Huessy warns, distinguishing post-blast residues of Pakistani uranium from North Korean uranium **would be** more challenging, probably **impossible**. Because neither country is a member of the International Atomic Energy Agency, IAEA inspectors have been unable to **collect** from their facilities **reliable** isotope **samples** that could be compared to post-attack residues. **Even if** **the uranium** were traced, the source nation could claim that the material had been stolen.

#### -- U.S. won’t over-react to terrorism

Jenkins-Smith 4 (Hank C., Ph.D., Professor of Government – Texas A&M University, and Kerry G. Herron, Ph.D., Research Scientist – Texas A&M University, Fall)

Our final contrasting set of expectations relate to the degree to which the public will support or demand retribution against terrorists and supporting states. Here our data show that support for using conventional U.S. military force to retaliate against terrorists initially averaged above midscale, but did not reach a high level of emotional demand for military action. Initial support declined significantly across all demographic and belief categories by the time of our survey in 2002. Furthermore, panelists both in 2001 and 2002 preferred that high levels of certainty about culpability (above 8.5 on a scale from zero to ten) be established before taking military action. Again, we find the weight of evidence supporting revisionist expectations of public opinion. Overall, these results are inconsistent with the contention that highly charged events will result in volatile and unstructured responses among mass publics that prove problematic for policy processes. The initial response to the terrorist strikes, in the immediate aftermath of the event, demonstrated a broad and consistent shift in public assessments toward a greater perceived threat from terrorism, and greater willingness to support policies to reduce that threat. But even in the highly charged context of such a serious attack on the American homeland, the overall public response was quite measured . On average, the public showed very little propensity to undermine speech protections, and initial willing-ness to engage in military retaliation moderated significantly over the following year.

#### -- U.S. won’t use nuclear weapons

Spring 1 (Baker, Research Fellow – Heritage Foundation, 9-20, http://www.heritage.org/Research/MissileDefense/BG1477.cfm)

Nuclear retaliation is not appropriate for every kind of attack against America. Some opponents of missile defense believe that the United States has an effective nuclear deterrent that, if necessary, could be used to respond to attacks on the homeland. But no responsible U.S. official is suggesting that the United States consider the use of nuclear weapons in response to the horrific September 11 attacks. In most cases of attack on the United States, the nuclear option **would not be appropriate**, but a defense response will almost always be appropriate. The United States needs to be able to resort to defensive options.

#### -- These arguments are true, even if pressure is overwhelming

Alford 7 (Roger, Professor of Law – Pepperdine, The Huffington Post, 3-7, Lexis)

Just one little problem: nuclear forensics. On the morning after, just how do you do forensics on ground zero to identify the source? After a nuclear strike the will to respond will be overwhelming. But in order to retaliate in kind, we will need **more than what the nuclear crime scene investigators can provide**.

### Biological Terrorism

#### -- No pandemic or extinction – history proves

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=)

3. Germ warfare!Like chemical agents, biological weapons have never lived up to their billing in popular culture. Consider the 1995 medical thriller Outbreak, in which a highly contagious virus takes out entire towns. The reality is quite different. Weaponized smallpox escaped from a Soviet laboratory in Aralsk, Kazakhstan, in 1971; three people died, no epidemic followed. In 1979, weapons-grade anthrax got out of a Soviet facility in Sverdlovsk (now called Ekaterinburg); 68 died, no epidemic. The loss of life was tragic, but no greater than could have been caused by a single conventional bomb. In 1989, workers at a US government facility near Washington were accidentally exposed to Ebola virus. They walked around the community and hung out with family and friends for several days before the mistake was discovered. No one died. The fact is, evolution has spent millions of years conditioning mammals to resist germs. Consider the Black Plague. It was the worst known pathogen in history, loose in a Middle Ages society of poor public health, awful sanitation, and no antibiotics. Yet it didn’t kill off humanity. Most people who were caught in the epidemic survived. Any superbug introduced into today’s Western world would encounter top-notch public health, excellent sanitation, and an array of medicines specifically engineered to kill bioagents. Perhaps one day some aspiring Dr. Evil will invent a bug that bypasses the immune system. Because it is possible some novel superdisease could be invented, or that existing pathogens like smallpox could be genetically altered to make them more virulent (two-thirds of those who contract natural smallpox survive), biological agents are a legitimate concern. They may turn increasingly troublesome as time passes and knowledge of biotechnology becomes harder to control, allowing individuals or small groups to cook up nasty germs as readily as they can buy guns today. But no superplague has ever come close to wiping out humanity before, and it seems unlikely to happen in the future.

#### -- Tech hurdles prevent bioterror

Mueller 6 (John, Chair of National Security Studies – Mershon Center and Professor of Political Science – Ohio State University, Overblown, p. 24)

Not only has the science about chemical and biological weapons been quite sophisticated for more than a century, but that science has become massively more developed over that period. Moreover, govern­ments (not just small terrorist groups) have spent a great deal of money over decades in an effort to make the weapons more effective. Yet, although there have been great improvements in the lethality, effective­ness, and deployment of conventional and nuclear weapons during that time, the difficulties of controlling and dispersing chemical and biological substances seem to have persisted. Perhaps dedicated terrorists will, in time, figure it out. However, the experience in the 1990s of the Japanese cult Aum Shinrikyo suggests there are great difficulties. The group had some 300 scientists in its employ and an estimated budget of $1 billion, and it reportedly tried at least nine times over five years to set off biological weapons by spray­ing pathogens from trucks and wafting them from rooftops, hoping fancifully to ignite an apocalyptic war**. These efforts failed to create a single fatality**; in fact, nobody even noticed that the attacks had taken place. It was at that point that the group abandoned its biological efforts in frustration and instead turned to the infamous sarin chemical attack.29 As two analysts stress, there have been so few biological (and chem­ical) terrorist attacks because they would require overcoming several **major technological hurdles**. Among them: gaining access to specialized ingredients, acquiring equipment and know-how to produce and dis­perse the agents, and creating an organization that can resist infiltration or early detection by law enforcement." In the meantime, the science with respect to detecting and ably responding to such attacks is likely to grow. Although acknowledging that things could change in the future, the Gilmore Commission has concluded, "As easy as some argue that it may be for terrorists to culture anthrax spores or brew up a concoction of deadly nerve gas, the effective dissemination or dispersal of these viruses and poisons still presents seri­ous technological hurdles that greatly inhibit their effective use.

#### -- No acquisition

Burton and Stewart 8 (Fred and Scott, Stratfor Intelligence, “Busting the Anthrax Myth”, 7-30,

http://www.stratfor.com/weekly/busting\_anthrax\_myth)

Operating in the badlands along the Pakistani-Afghan border, al Qaeda cannot easily build large modern factories capable of producing large quantities of agents or toxins. Such fixed facilities are expensive and consume a lot of resources. Even if al Qaeda had the spare capacity to invest in such facilities, the fixed nature of them means that they could be compromised and quickly destroyed by the United States. If al Qaeda could somehow create and hide a fixed biological weapons facility in Pakistan’s Federally Administered Tribal Areas or North-West Frontier Province, it would still face the daunting task of transporting large quantities of biological agents from the Pakistani badlands to targets in the United States or Europe. Al Qaeda operatives certainly can create and transport small quantities of these compounds, but not enough to wreak the kind of massive damage it desires. Al Qaeda’s lead chemical and biological weapons expert, Midhat Mursi al-Sayid Umar, also known as Abu Khabab al-Masri, was reportedly killed on July 28, 2008, by a U.S. missile strike on his home in Pakistan. Al-Sayid, who had a $5 million dollar bounty on his head, was initially reported to have been one of those killed in the January 2006 strike in [Damadola](http://www.stratfor.com/bin_laden_tape_and_strike_damadola). If he was indeed killed, his death should be another significant blow to the group’s biological warfare efforts. Of course, we must recognize that the jihadist threat goes just beyond the al Qaeda core. As we have been writing for several years now, al Qaeda has undergone a metamorphosis from a smaller core group of professional operatives into an operational model that encourages independent grassroots jihadists to conduct attacks. The core al Qaeda group, through men like al-Sayid, has published manuals in hard copy and on the Internet that provide instructions on how to manufacture rudimentary biological weapons. It is our belief that independent jihadist cells and lone-wolf jihadists will almost certainly attempt to brew up some of the recipes from the al Qaeda cookbook. There also exists a very real threat that a jihadist sympathizer could obtain a small quantity of deadly biological organisms by infiltrating a research facility. This means that we likely will see some limited attempts at employing biological weapons. That does not mean, however, that such attacks will be large-scale or create mass casualties. The Bottom Line While there has been much consternation and alarm-raising over the potential for widespread proliferation of biological weapons and the possible use of such weapons on a massive scale, there are significant constraints on such designs. The current dearth of substantial biological weapons programs and arsenals by governments worldwide, and the even smaller number of cases in which systems were actually used, seems to belie — or at least bring into question — the intense concern about such programs.

#### -- Risk decreasing

New Scientist 8 (7-26, Lexis)

First up for consideration was an act of bioterrorism, such as the synthesis and release of a dangerous virus. According to Ali Nouri of the Science and Global Security programme at Princeton University, such an act is becoming ever more unlikely. That's because the centralisation and automation of the biotech industry are making it harder for anyone to create a dangerous pathogen or compound without triggering alarms within the industry, he says. For example, in the US if someone applies to synthesise Ebola without a licence, they are reported to the authorities.

#### -- Dispersal problems block

Scherer 3 (John L., Editor of “Terrorism: An Annual Survey”, “Is Terrorism’s Threat Overblown?”, National Affairs, January, http://findarticles.com/p/articles/mi\_m1272/is\_2692\_131/ai\_96268286)

Chemical, biological, and nuclear (CBN) attacks are possible, but difficult and unlikely. Only one has succeeded over the last two decades--the 1995 Sarin incident on the Tokyo subway. Thousands were injured, but just six people died. There have been no CBN attacks with mass fatalities anywhere. Terrorist "experts" simply have thought up everything terrible that can happen, and then assumed it will. Terrorists would encounter problems dispersing biological toxins. Most quickly dilute in any open space, and others need perfect weather conditions to cause mass casualties. Some biological agents, although not anthrax, are killed by exposure to ultraviolet light. The Washington, D.C., subway system has devices that can detect biological toxins. New York has the highest-density population of any American city, and for this reason might have the greatest probability of such an attack, but it also has the best-prepared public health system. In one instance, Essid Sami Ben Khemais, a Moroccan who ran Al Qaeda's European logistics center in Milan, Italy, received a five-year prison sentence in February, 2002. His cell planned to poison Rome's water supply near the U.S. embassy on the Via Veneto. This group had 10 pounds of potassium ferro-cyanide, a chemical used to make wine and ink dye, but extracting a deadly amount of cyanide from this compound would have proved extremely difficult.

### 1NC No Econ War

#### Economic decline doesn’t cause war

Tir 10 [Jaroslav Tir - Ph.D. in Political Science, University of Illinois at Urbana-Champaign and is an Associate Professor in the Department of International Affairs at the University of Georgia, “Territorial Diversion: Diversionary Theory of War and Territorial Conflict”, The Journal of Politics, 2010, Volume 72: 413-425)]

Empirical support for the economic growth rate is much weaker. The finding that poor economic performance is associated with a higher likelihood of territorial conflict initiation is significant only in Models 3–4.14 The weak results are not altogether surprising given the findings from prior literature. In accordance with the insignificant relationships of Models 1–2 and 5–6, Ostrom and Job (1986), for example, note that the likelihood that a U.S. President will use force is uncertain, as the bad economy might create incentives both to divert the public’s attention with a foreign adventure and to focus on solving the economic problem, thus reducing the inclination to act abroad. Similarly, Fordham (1998a, 1998b), DeRouen (1995), and Gowa (1998) find no relation between a poor economy and U.S. use of force. Furthermore, Leeds and Davis (1997) conclude that the conflict-initiating behavior of 18 industrialized democracies is unrelated to economic conditions as do Pickering and Kisangani (2005) and Russett and Oneal (2001) in global studies. In contrast and more in line with my findings of a significant relationship (in Models 3–4), Hess and Orphanides (1995), for example, argue that economic recessions are linked with forceful action by an incumbent U.S. president. Furthermore, Fordham’s (2002) revision of Gowa’s (1998) analysis shows some effect of a bad economy and DeRouen and Peake (2002) report that U.S. use of force diverts the public’s attention from a poor economy. Among cross-national studies, Oneal and Russett (1997) report that slow growth increases the incidence of militarized disputes, as does Russett (1990)—but only for the United States; slow growth does not affect the behavior of other countries. Kisangani and Pickering (2007) report some significant associations, but they are sensitive to model specification, while Tir and Jasinski (2008) find a clearer link between economic underperformance and increased attacks on domestic ethnic minorities. While none of these works has focused on territorial diversions, my own inconsistent findings for economic growth fit well with the mixed results reported in the literature.15 Hypothesis 1 thus receives strong support via the unpopularity variable but only weak support via the economic growth variable. These results suggest that embattled leaders are much more likely to respond with territorial diversions to direct signs of their unpopularity (e.g., strikes, protests, riots) than to general background conditions such as economic malaise. Presumably, protesters can be distracted via territorial diversions while fixing the economy would take a more concerted and prolonged policy effort. Bad economic conditions seem to motivate only the most serious, fatal territorial confrontations. This implies that leaders may be reserving the most high-profile and risky diversions for the times when they are the most desperate, that is when their power is threatened both by signs of discontent with their rule and by more systemic problems plaguing the country (i.e., an underperforming economy).

#### No escalation

Robert Jervis 11, Professor in the Department of Political Science and School of International and Public Affairs at Columbia University, December 2011, “Force in Our Times,” Survival, Vol. 25, No. 4, p. 403-425

Even if war is still seen as evil, the security community could be dissolved if severe conflicts of interest were to arise. Could the more peaceful world generate new interests that would bring the members of the community into sharp disputes? 45 A zero-sum sense of status would be one example, perhaps linked to a steep rise in nationalism. More likely would be a worsening of the current economic difficulties, which could itself produce greater nationalism, undermine democracy and bring back old-fashioned beggar-my-neighbor economic policies. While these dangers are real, it is hard to believe that the conflicts could be great enough to lead the members of the community to contemplate fighting each other. It is not so much that economic interdependence has proceeded to the point where it could not be reversed – states that were more internally interdependent than anything seen internationally have fought bloody civil wars. Rather it is that even if the more extreme versions of free trade and economic liberalism become discredited, it is hard to see how without building on a preexisting high level of political conflict leaders and mass opinion would come to believe that their countries could prosper by impoverishing or even attacking others. Is it possible that problems will not only become severe, but that people will entertain the thought that they have to be solved by war? While a pessimist could note that this argument does not appear as outlandish as it did before the financial crisis, an optimist could reply (correctly, in my view) that the very fact that we have seen such a sharp economic down-turn without anyone suggesting that force of arms is the solution shows that even if bad times bring about greater economic conflict, it will not make war thinkable.

### AT Nuclear Meltdowns

#### Meltdowns don’t cause extinction (empirics)

WNA 12(World nuclear association members are responsible for 95% of the world's nuclear power outside of the U.S., as well as the vast majority of world uranium, conversion and enrichment production, “Safety of Nuclear Power Reactors”, March 2012, WNA, <http://www.world-nuclear.org/info/inf06.html>)

In the 1950s attention turned to harnessing the power of the atom in a controlled way, as demonstrated at Chicago in 1942 and subsequently for military research, and applying the steady heat yield to generate electricity. This naturally gave rise to concerns about accidents and their possible effects. However, with nuclear power safety depends on much the same factors as in any comparable industry: intelligent planning, proper design with conservative margins and back-up systems, high-quality components and a well-developed safety culture in operations. A particular nuclear scenario was loss of cooling which resulted in melting of the nuclear reactor core, and this motivated studies on both the physical and chemical possibilities as well as the biological effects of any dispersed radioactivity. Those responsible for nuclear power technology in the West devoted extraordinary effort to ensuring that a meltdown of the reactor core would not take place, since it was assumed that a meltdown of the core would create a major public hazard, and if uncontained, a tragic accident with likely multiple fatalities. In avoiding such accidents the industry has been very successful. In over 14,500 cumulative reactor-years of commercial operation in 32 countries, there have been only three major accidents to nuclear power plants - Three Mile Island, Chernobyl, and Fukushima - the second being of little relevance to reactor design outside the old Soviet bloc. It was not until the late 1970s that detailed analyses and large-scale testing, followed by the 1979 meltdown of the Three Mile Island reactor, began to make clear that even the worst possible accident in a conventional western nuclear power plant or its fuel would not be likely to cause dramatic public harm. The industry still works hard to **minimize the probability of a meltdown accident, but it is now clear that no-one need fear a potential public** health catastrophe simply because a fuel meltdown happens. Fukushima has made that clear, with a triple meltdown causing no fatalities or serious radiation doses to anyone, while over two hundred people continued working on the site to mitigate the accident's effects. The decades-long test and analysis program showed that less radioactivity escapes from molten fuel than initially assumed, and that most of this radioactive material is not readily mobilized beyond the immediate internal structure. Thus, even if the containment structure that surrounds all modern nuclear plants were ruptured, as it has been with at least one of the Fukushima reactors, it is still very effective in preventing escape of most radioactivity. It is the laws of physics and the properties of materials that mitigate disaster, more than the required actions by safety equipment or personnel. In fact, licensing approval for new plants now requires that the effects of any core-melt accident must be confined to the plant itself, without the need to evacuate nearby residents. The three significant accidents in the 50-year history of civil nuclear power generation are: Three Mile Island (USA 1979) where the reactor was severely damaged but radiation was contained and there were no adverse health or environmental consequences Chernobyl (Ukraine 1986) where the destruction of the reactor by steam explosion and fire killed 31 people and had significant health and environmental consequences. The death toll has since increased to about 5 Fukushima (Japan 2011) where three old reactors (together with a fourth) were written off and the effects of loss of cooling due to a huge tsunami were inadequately contained. A table showing all reactor accidents, and a table listing some energy-related accidents with multiple fatalities are appended. These three significant accidents occurred during more than 14,000 reactor-years of civil operation. Of all the accidents and incidents, only the Chernobyl and Fukushima accidents resulted in radiation doses to the public greater than those resulting from the exposure to natural sources. The Fukushima accident resulted in some radiation exposure of workers at the plant, but not such as to threaten their health, unlike Chernobyl. Other incidents (and one 'accident') have been completely confined to the plant. Apart from Chernobyl, no nuclear workers or members of the public have ever died as a result of exposure to radiation due to a commercial nuclear reactor incident. Most of the serious radiological injuries and deaths that occur each year (2-4 deaths and many more exposures above regulatory limits) are the result of large uncontrolled radiation sources, such as abandoned medical or industrial equipment. (There have also been a number of accidents in experimental reactors and in one military plutonium-producing pile - at Windscale, UK, in 1957, but none of these resulted in loss of life outside the actual plant, or long-term environmental contamination.) See also Table 2 in Appendix.

#### -- No risk of reactor meltdown

UIC 7 (Uranium Information Center, “Safety of Nuclear Power Reactors”, Nuclear Issues Briefing Paper, 14,

http://www.uic.com.au/nip14.htm)

Those responsible for nuclear power technology in the west devoted extraordinary effort to ensuring that a meltdown of the reactor core would not take place, since it was assumed that a meltdown of the core would create a major public hazard, and if uncontained, a tragic accident with likely fatalities. **In avoiding such accidents the industry has been outstandingly successful.** In 12,000 cumulative reactor-years of commercial operation in 32 countries, there have been only two major accidents to nuclear power plants - Three Mile Island and Chernobyl, the latter being of little relevance outside the old Soviet bloc. It was not until the late 1970s that detailed analyses and large-scale testing, followed by the 1979 meltdown of the Three Mile Island reactor, began to make clear that even the **worst possible accident** in a conventional western nuclear power plant or its fuel could not cause dramatic public harm. The industry still works hard to minimize the probability of a meltdown accident, but it is now clear that no-one need fear a potential public health catastrophe. The decades-long test and analysis program showed that less radioactivity escapes from molten fuel than initially assumed, and that this radioactive material is not readily mobilized beyond the immediate internal structure. Thus, even if the containment structure that surrounds all modern nuclear plants were ruptured, it would still be highly effective in preventing escape of radioactivity. It is the laws of physics and the properties of materials that preclude disaster, not the required actions by safety equipment or personnel. In fact, licensing approval now requires that the effects of any core-melt accident must be confined to the plant itself, without the need to evacuate nearby residents. The two significant accidents in the 50-year history of civil nuclear power generation are: •Three Mile Island (USA 1979) where the reactor was severely damaged but radiation was contained and there were no adverse health or environmental consequences •Chernobyl (Ukraine 1986) where the destruction of the reactor by steam explosion and fire killed 31 people and had significant health and environmental consequences. The death toll has since increased to about 56. A table showing all reactor accidents, and a table listing some energy-related accidents with multiple fatalities are appended. These two significant accidents occurred during more than 12,000 reactor-years of civil operation. Of all the accidents and incidents, only the Chernobyl accident resulted in radiation doses to the public greater than those resulting from the exposure to natural sources. Other incidents (and one 'accident') have been completely confined to the plant. Apart from Chernobyl, no nuclear workers or members of the public have ever died as a result of exposure to radiation due to a commercial nuclear reactor incident. Most of the serious radiological injuries and deaths that occur each year (2-4 deaths and many more exposures above regulatory limits) are the result of large uncontrolled radiation sources, such as abandoned medical or industrial equipment. (There have also been a number of accidents in experimental reactors and in one military plutonium-producing pile - at Windscale, UK, in 1957, but none of these resulted in loss of life outside the actual plant, or long-term environmental contamination.) It should be emphasised that a commercial-type power reactor simply cannot **under any circumstances** explode like a nuclear bomb. The International Atomic Energy Agency (IAEA) was set up by the United Nations in 1957. One of its functions was to act as an auditor of world nuclear safety. It prescribes safety procedures and the reporting of even minor incidents. Its role has been strengthened in the last decade. Every country which operates nuclear power plants has a nuclear safety inspectorate and all of these work closely with the IAEA.

#### -- Even the worst case scenario will be contained and cause no harm

McGregor 1 (Douglas S., Director of the Semiconductor Materials and Radiological Technologies Laboratory – University of Michigan, Ph.D – Nuclear Engineering, Rethinking Nuclear Power, New American, 17(9), 4-23, http://www.thenewamerican.com/tna/2001/04-23-2001/vo17no09\_nuclear.htm)

The most serious accident possible is the release of radioactive material into the environment. **It is not a nuclear explosion**, for the simple reason that the uranium fuel used in a nuclear power plant does not contain a high enough concentration of U-235 to make a nuclear explosion **even theoretically possible**. To make such an explosion possible, the uranium fuel inside a reactor would have to be enriched to about 90 percent U-235, but it is only enriched to about 3.5 percent. The worst nuclear power plant disaster in history occurred when the Chernobyl reactor in the Ukraine experienced a heat (and gas) not nuclear explosion. If such an explosion were to have occurred in a Western nuclear power plant, the explosion would have been **contained** because all Western plants are required to have a containment building a solid structure of steel-reinforced concrete that completely encapsulates the nuclear reactor vessel. The Chernobyl plant did not have this fundamental safety structure, and so the explosion blew the top of the reactor building off, spewing radiation and reactor core pieces into the air. But the design of the Chernobyl plant was inferior in other ways as well. Unlike the Chernobyl reactor, Western power plant nuclear reactors are designed, under operating conditions, to have negative power coefficients of reactivity that **make** **such** **runaway accidents impossible**. The bottom line is that the flawed Chernobyl nuclear power plant would never have been licensed to operate in the U.S. or any other Western country, and the accident that occurred there simply would not occur in a Western nuclear power plant. The circumstances surrounding the Chernobyl accident were in many ways the worst possible, with an exposed reactor core and an open building. Thirty-one plant workers and firemen died directly from radiation exposure at Chernobyl. Also, it is projected that over 3,400 local residents will eventually acquire and die of cancer due to their exposure to the radioactive fallout. By comparison, within a matter of hours more than 2,300 were killed and as many as 200,000 others injured in a non-nuclear accident when a toxic gas cloud escaped from the Union Carbide pesticide plant in Bhopal, India. According to conventional wisdom, the worst nuclear power accident in this country occurred at the Three Mile Island plant in Pennsylvania. Yet, in that incident, nobody was killed and nobody was injured. One exception, perhaps, could be Dr. Edward Teller, the distinguished pro-nuclear physicist who played a key role in the development of nuclear advancements during and after World War II. In a two-page ad appearing in the Wall Street Journal for July 31, 1979, Dr. Teller explained that, at 71 years of age and working 20 hours per day, the strain of refuting some of the anti-nuclear "propaganda that Ralph Nader, Jane Fonda and their ilk" were "spewing to the news media" in the wake of Three Mile Island led to a heart attack. He continued: "You might say that I was the only one whose health was affected by that reactor near Harrisburg. No, that would be wrong. It was not the reactor. It was Jane Fonda. Reactors are not dangerous." The event at Three Mile Island occurred from faulty instrumentation that gave erroneous readings for the reactor vessel environment. Due to a series of equipment failures and human errors, plus inadequate instrumentation, the reactor core was compromised and underwent a partial melt. Yet radioactive water released from the core configuration was safely confined within the containment building structure, and very little radiation was released into the environment. The Three Mile Island incident actually **underscores** the relative safety of nuclear power plants since the safety devices *worked* as designed and *prevented* any injury from occurring to humans, animals, or the environment. Moreover, the accident directly resulted in improved procedures, instrumentation, and safety systems, and now our nuclear reactor power plants are substantially safer. The Three Mile Island Unit 2 core has been cleaned up and the radioactive deposit properly stored; Three Mile Island Unit 1 is still operating with an impeccable record.

### AT Food / Famine Wars

#### Famine doesn’t cause war ---- it makes people too hungry to fight

Barnett in ’00 (Jon, Australian Research Council fellow and Senior Lecturer in Development Studies @ Melbourne U. School of Social and Environmental Enquiry, Review of International Studies, “Destabilizing the environment-conflict Thesis”, 26:271-288, Cambridge Journals Online)

Considerable attention has been paid to the links between population, the environment and conflict. The standard argument is that population growth will overextend the natural resources of the immediate environs, leading to deprivation which, it is assumed, will lead to conflict and instability either directly through competition for scarce resources, or indirectly through the generation of ‘environmental refugees’. For example, according to Myers: ‘so great are the stresses generated by too many people making too many demands on their natural-resource stocks and their institutional support systems, that the pressures often create first-rate breeding grounds for conflict’.37 The ways in which population growth leads to environmental degradation are reasonably well known. However, the particular ways in which this leads to conflict are difficult to prove. In the absence of proof there is a negative style of argumentation, and there are blanket assertions and abrogations; for example: ‘the relationship is rarely causative in a direct fashion’, but ‘we may surmise that conflict would not arise so readily, nor would it prove so acute, if the associated factor of population growth were occurring at a more manageable rate’.38 It is possible though, that rather than inducing warfare, overpopulation and famine reduce the capacity of a people to wage war. Indeed, it is less the case that famines in Africa in recent decades have produced ‘first rate breeding grounds for conflict’; the more important, pressing, and avoidable product is widespread malnutrition and large loss of life.

#### -- Food wars are a myth – there’s zero empirical evidence

Salehyan 7 (Idean, Professor of Political Science – University of North Texas, “The New Myth About Climate Change”, Foreign Policy, Summer, http://www.foreignpolicy.com/story/cms.php?story\_id=3922)

First, aside from a few anecdotes, there is little systematic empirical evidence that resource scarcity and changing environmental conditions lead to conflict. In fact, several studies have shown that an abundance of natural resources is more likely to contribute to conflict. Moreover, even as the planet has warmed, the number of civil wars and insurgencies has decreased dramatically. Data collected by researchers at Uppsala University and the International Peace Research Institute, Oslo shows a steep decline in the number of armed conflicts around the world. Between 1989 and 2002, some 100 armed conflicts came to an end, including the wars in Mozambique, Nicaragua, and Cambodia. If global warming causes conflict, we should not be witnessing this downward trend.

Furthermore, if famine and drought led to the crisis in Darfur, why have scores of environmental catastrophes failed to set off armed conflict elsewhere? For instance, the U.N. World Food Programme warns that 5 million people in Malawi have been experiencing chronic food shortages for several years. But famine-wracked Malawi has yet to experience a major civil war. Similarly, the Asian tsunami in 2004 killed hundreds of thousands of people, generated millions of environmental refugees, and led to severe shortages of shelter, food, clean water, and electricity. Yet the tsunami, one of the most extreme catastrophes in recent history, did not lead to an outbreak of resource wars. Clearly then, there is much more to armed conflict than resource scarcity and natural disasters.

#### -- No shortages – food is abundant

Poole 6 (Holly Kavana, Institute for Food and Development Policy,“12 Myths About Hunger”, Backgrounder, 12(2), Summer, 4-9, http://www.foodfirst.org/12myths)

Myth 1: Not Enough Food to Go Around Reality: Abundance, not scarcity, best describes the world's food supply. Enough wheat, rice and other grains are produced to provide every human being with 3,200 calories a day. That doesn't even count many other commonly eaten foods - ­vegetables, beans, nuts, root crops, fruits, grass-fed meats, and fish. Enough food is available to provide at least 4.3 pounds of food per person a day worldwide: two and half pounds of grain, beans and nuts, about a pound of fruits and vegetables, and nearly another pound of meat, milk and eggs - ­enough to make most people fat! The problem is that many people are too poor to buy readily available food. Even most "hungry countries" have enough food for all their people right now. Many are net exporters of food and other agricultural products.

#### -- Democracy solves the impact

Salehyan 7 (Idean, Professor of Political Science – University of North Texas, “The New Myth About Climate Change”, Foreign Policy, Summer, http://www.foreignpolicy.com/story/cms.php?story\_id=3922)

To be sure, resource scarcity and environmental degradation can lead to social frictions. Responsible, accountable governments, however, can prevent local squabbles from spiraling into broader violence, while mitigating the risk of some severe environmental calamities. As Nobel laureate Amartya Sen has observed, no democracy has ever experienced a famine. Politicians who fear the wrath of voters usually do their utmost to prevent foreseeable disasters and food shortages. Accountable leaders are also better at providing public goods such as clean air and water to their citizens.

### 1NC Disease (General)

#### -- No extinction – diseases favor limited lethality and medicine will check

Posner 4 (Richard, Judge – US Court of Appeals, Catastrophe: Risk and Response, p. 22-24)

Yet the fact that Homo sapiens has managed to survive every disease to assail it in the 200,000 years or so of its existence is a source of genuine comfort, at least if the focus is on extinction events. There have been enormously destructive plagues, such as the Black Death, smallpox, and now AIDS, but none has come close to destroying the entire human race. There is a biological reason. Natural selection favors germs of limited lethality; they are fitter in an evolutionary sense because their genes are more likely to be spread if the germs do not kill their hosts too quickly. The AIDS virus is an example of a lethal virus, wholly natural, that by lying dormant yet infectious in its host for years maximizes its spread. Yet there is no danger that AIDS will destroy the entire human race. The likelihood of a natural pandemic that would cause the extinction of the human race is probably even less today than in the past (except in prehistoric times, when people lived in small, scattered bands, which would have limited the spread of disease), despite wider human contacts that make it more difficult to localize an infectious disease. The reason is improvements in medical science. But the comfort is a small one. Pandemics can still impose enormous losses and resist prevention and cure: the lesson of the AIDS pandemic. And there is always a lust time.

#### -- Burn out stops disease

Lederberg 99 (Joshua, Professor of Genetics – Stanford University School of Medicine, Epidemic The World of Infectious Disease, p. 13)

The toll of the fourteenth-century plague, the "Black Death," was closer to one third. If the bugs' potential to develop adaptations that could kill us off were the whole story, we would not be here. However, with very rare exceptions, our microbial adversaries have a **shared interest** in our survival. Almost any pathogen comes to a **dead end** when we die; it first has to communicate itself to another host in order to survive. So historically, the really severe host- pathogen interactions have resulted in a **wipeout** of **both** host and pathogen. We humans are still here because, so far, the pathogens that have attacked us have willy-nilly had an interest in our survival. This is a very delicate balance, and it is easily disturbed, often in the wake of large-scale ecological upsets.

## Energy Leadership

**Sufficient independence now – solves the advantage**

**Miller et al 12** (Rich. Asjylyn Loder and Jim Polson, “Americans Gaining Energy Independence With U.S. as Top Producer,” Bloomberg, 2-6, <http://www.bloomberg.com/news/2012-02-07/americans-gaining-energy-independence-with-u-s-as-top-producer.html>)

The U.S. is the closest it has been in almost 20 years to achieving energy **self-sufficiency**, a goal the nation has been pursuing since the 1973 Arab oil embargo triggered a recession and led to lines at gasoline stations. Domestic **oil output** is the highest in eight years. The U.S. is **producing so much natural gas** that, where the government warned four years ago of a critical need to boost imports, it now may approve an export terminal. Methanex Corp. (MX), the world’s biggest methanol maker, said it will dismantle a factory in Chile and reassemble it in Louisiana to take advantage of low natural gas prices. And higher mileage standards and federally mandated ethanol use, along with slow economic growth, have **curbed demand**. The result: The U.S. has reversed a two-decade-long decline in energy independence, increasing the proportion of demand met from domestic sources over the last six years to an estimated 81 percent through the first 10 months of 2011, according to data compiled by Bloomberg from the U.S. Department of Energy. That would be the highest level since 1992. “For 40 years, only politicians and the occasional author in Popular Mechanics magazine talked about achieving energy independence,” said Adam Sieminski, who has been nominated by President Barack Obama to head the U.S. Energy Information Administration. “Now it doesn’t seem such an outlandish idea.” The transformation, which could see the country become the world’s top energy producer by 2020, has implications for the economy and national security -- boosting household incomes, jobs and government revenue; cutting the trade deficit; enhancing manufacturers’ competitiveness; and allowing greater flexibility in dealing with unrest in the Middle East. Output Rising U.S. energy self-sufficiency has been steadily rising since 2005, when it hit a low of 70 percent, the data compiled by Bloomberg show. Domestic crude oil production rose 3.6 percent last year to an average 5.7 million barrels a day, the highest since 2003, according to the Energy Department. Natural gas output climbed to **22.4 trillion** cubic feet in 2010 from 20.2 trillion in 2007, when the Federal Energy Regulatory Commission warned of the need for more imports. Prices have fallen more than 80 percent since 2008. At the same time, the efficiency of the average U.S. passenger vehicle has helped limit demand. It increased to 29.6 miles per gallon in 2011 from 19.9 mpg in 1978, according to the National Highway Traffic Safety Administration. The last time the U.S. achieved energy independence was in 1952. While it still imported some petroleum, the country’s exports, including of coal, more than offset its imports.

#### Long tf

#### Oil alt cause

Marketwire 10 (“The Fraser Institute: Reducing Barriers to Crude Oil Investment Will Foster Job Creation and Energy Security for United States, Canada, and Mexico,” 9-27-10, <http://www.andhranews.net/Business/2010/September/27-Fraser-Institute-Reducing-Barriers-42763.asp>)

CALGARY, ALBERTA -- (Marketwire) -- 09/27/10 -- A hodgepodge of misguided government policies, costly and time-consuming regulatory processes, and environmental restrictions have resulted in multiple barriers to investment in North American crude oil production and transportation, concludes a new study released today by the Fraser Institute, Canada's leading public policy think-tank. The study, Towards North American Energy Security: Removing Barriers to Oil Industry Development, recommends nine policy changes that would reduce barriers to investment in the crude oil sector, and ultimately lead to additional job creation and reduced reliance on foreign oil imports for the United States, Canada, and Mexico. "Crude oil is an important element of North America's energy mix and will not be supplanted by other energy forms in the foreseeable future," said Gerry Angevine, Fraser Institute senior economist in the Global Resource Centre and author of the report. "Although Canada has more than 81 percent of the continent's proven oil reserves and is the major single-country supplier of oil to the United States, the U.S. still relies heavily on oil imports from OPEC countries, leaving it vulnerable to supply disruptions."

### 1NC Heg/War

#### Lots of factors prevent great power conflict without hegemony

Fettweis 10 (Christopher J. Professor of Political Science at Tulane, Dangerous Times-The International Politics of Great Power Peace, pg. 175-6)

If the only thing standing between the world and chaos is the US military presence, then an adjustment in grand strategy would be exceptionally counter-productive. But it is worth recalling that none of the other explanations for the decline of war – nuclear weapons, complex economic interdependence, international and domestic political institutions, evolution in ideas and norms – necessitate an activist America to maintain their validity. Were American to become more restrained, nuclear weapons would still affect the calculations of the would be aggressor; the process of globalization would continue, deepening the complexity of economic interdependence; the United Nations could still deploy peacekeepers where necessary; and democracy would not shrivel where it currently exists. More importantly,the idea that war is a worthwhile way to resolve conflict would have no reason to return. As was argued in chapter 2, normative evolution is typically unidirectional. Strategic restraint in such a world be virtually risk free.

#### Statisically unipolarity is THE most conflict prone system

Montiero 12 [Nuno P. Monteiro is Assistant Professor of Political Science at Yale University, “Unrest Assured: Why Unipolarity is Not Peaceful”, International Security, Vol. 36, No. 3 (Winter 2011/12), pp. 9–40, Chetan]

**Wohlforth claims not only that the unipole can stave off challenges and preclude major power rivalries, but also that it is able to prevent conflicts among other states** and create incentives for them to side with it. 39 The unipole’s advantage is so great that it can settle any quarrel in which it intervenes. **As Wohlforth writes, “For as long as unipolarity obtains....second-tier states are less likely to engage in conflict-prone rivalries** for security or prestige. Once the sole pole takes sides, there can be little doubt about which party will prevail.” 40 This is the core logic of Wohlforth’s argument that unipolarity is peaceful. But what specifically does his argument say about each of the six possible kinds of war I identified in the previous section? Clearly, great power war is impossible in a unipolar world. In Wohlforth’s famous formulation: “Two states measured up in 1990. One is gone. No new pole has appeared: 2 1 1.” 41 Furthermore, by arguing that unipolarity precludes hegemonic rivalries, Wohlforth makes no room for wars between the sole great power and major powers. These are, according to him, the two main reasons why a unipolar world is peaceful. Unipolarity, he writes, “means the absence of two big problems that bedeviled the statesmen of past epochs: hegemonic rivalry and balance-of-power politics among major powers.” 42 I agree with Wohlforth on these two points, but they are only part of the picture. Granted, the absence of great power wars is an important contribution toward peace, but great power competition—and the conflict it might engender—would signal the emergence of one or more peer competitors to the unipole, and thus indicate that a transition to a bipolar or multipolar system was already under way. In this sense, great power conflict should be discussed within the context of unipolar durability, not unipolar peace. Indeed, including this subject in discussions of unipolar peacefulness parallels the mistakes made in the debate about the Cold War bipolar system. Then, arguments about how the two superpowers were unlikely to fight each other were often taken to mean that the system was peaceful. This thinking ignored the possibility of wars between a superpower and a lesser state, as well as armed conflicts among two or more lesser states, often acting as great power proxies. 43 In addition, **Wohlforth claims that wars among major powers are unlikely**, because the unipole will prevent conflict from erupting among important states. He writes, “The sole pole’s power advantages matter only to the degree that it is engaged, and it is most likely to be engaged in politics among the other major powers. 44 I agree that if the unipole were to pursue a strategy of defensive dominance, major power wars would be unlikely. Yet, there is no compelling reason to expect that it will always follow such a course. Should the unipole decide to disengage, as Wohlforth implies, major power wars would be possible. At the same time, Wohlforth argues that the unipole’s power preponderance makes the expected costs of balancing prohibitive, leading minor powers to bandwagon. This is his explanation for the absence of wars between the sole great power and minor powers. But, as I show, the costs of balancing relative to bandwagoning vary among minor powers. So Wohlforth’s argument underplays the likelihood of this type of war. Finally, Wohlforth’s argument does not exclude all kinds of war. **Although power preponderance allows the unipole to manage conflicts globally, this argument is not meant to apply to relations between major and minor powers,** or among the latter. As Wohlforth explains, his argument “applies with less force to potential security competition between regional powers, or between a second-tier state and a lesser power with which the system leader lacks close ties.” 45 Despite this caveat, Wohlforth does not fully explore the consequences of potential conflict between major and minor powers or among the latter for his view that unipolarity leads to peace. **How well**, then, **does the argument that unipolar systems are peaceful account for the first two decades of unipolarity** since the end of the Cold War? Table 1 presents a list of great powers divided into three periods: 1816 to 1945, multipolarity; 1946 to 1989, bipolarity; and since 1990, unipolarity. 46 Table 2 presents summary data about the incidence of war during each of these periods. **Unipolarity is the most conflict prone of all the systems, according to** at least **two important criteria: the percentage of years that great powers spend at war and the incidence of war involving great powers**. In multipolarity, 18 percent of great power years were spent at war. In bipolarity, the ratio is 16 percent. **In unipolarity**, however, **a remarkable 59 percent of great power years** until now **were spent at war**. This is by far the highest percentage in all three systems. Furthermore, **during** periods of **multipolarity and bipolarity, the probability that war** involving a great power **would break out in any given year was, respectively, 4.2 percent and 3.4 percent. Under unipolarity, it is 18.2 percent**—or more than four times higher. 47 **These figures provide no evidence that unipolarity is peaceful**. 48 In sum, the argument that unipolarity makes for peace is heavily weighted toward interactions among the most powerful states in the system. This should come as no surprise given that Wohlforth makes a structural argument: peace flows from the unipolar structure of international politics, not from any particular characteristic of the unipole. 49 Structural **analyses of the international system are usually centered on interactions between great powers**. 50 As Waltz writes, “The theory, like the story, of international politics is written in terms of the great powers of an era.” 51 In the sections that follow, however, I show that **in the case of unipolarity, an investigation of its peacefulness must consider** potential **causes of conflict beyond interactions between the most important states in the system.**

# 2NC/1NR

## ITER DA

### Turns Fusion Adv

#### U.S. cannot develop fusion technology without ITER --- international cooperation is necessary.

**Kanter**, 4/29/**2009** (James, A Clean Energy Machine That Works Like the Sun, The New York Times, p. <http://www.nytimes.com/2009/04/30/business/energy-environment/30fusion.html>)

China, the United States, Japan and the European Union have committed billions of dollars to construction of the International Thermonuclear Experimental Reactor, or ITER, in a heavily forested corner of Provence called Cadarache that is a center for atomic research. The goal is to prove that energy can be generated through nuclear fusion — a process akin to how light and heat are produced by the sun. The promise is virtually unlimited amounts of energy from abundantly available sources. Fusion creates no greenhouse gases and produces far less hazardous waste than fission, the current nuclear process, although fusion reactors do become radioactive and waste would still require special disposal. If successful, the concept is not expected to be commercially viable until midcentury. There has already been a two-year delay because of difficulties setting up an international organization for the project. Rising costs for equipment could further complicate relations among the participants, which include South Korea, India and Russia. Even so, scientists say an international approach is critical. “No one nation can develop fusion alone,” said Pascal Garin, the project leader at the International Fusion Material Irradiation Facility in Japan, which is helping to develop materials for the reactor. “The technical and economic challenges are enormous compared with other low-emissions technologies like solar power or conventional nuclear power.” The original budget, set in 2001, was about $10 billion, to be spent over 30 years. About half that amount was to be spent by participating governments on national projects to build components for the reactor.

#### Participation in ITER is the only way to access essential fusion technology.

**Stacey**, Summer **1997** (Weston – Callaway Regents’ Professor of Nuclear Engineering at the Georgia Institute of Technology, The ITER Decision and U.S. Fusion R&D, Issues, Vol. 3, Issue 4, p. <http://www.issues.org/13.4/stacey.htm>)

Scientific and technical. The primary objective of the U.S. fusion program is to study the science that underlies fusion energy development. ITER offers the United States a way of participating in the investigation of the leading plasma science issues of the next two decades for a fraction of the cost of doing it alone. ITER will provide the first opportunity to study the plasma regime found in a commercial fusion energy reactor, the last major frontier of fusion plasma science. Under the present budget, participation in ITER would seem to be the only way in which the United States can maintain significant participation in the worldwide Tokamak experimental program, which is far advanced by comparison with other confinement configurations. In short, participation in ITER is actually the only opportunity for the United States to remain at the forefront of experimental fusion plasma science over the next few decades. Fusion energy also requires the development of plasma technology and fusion nuclear science and technology. ITER will demonstrate plasma and nuclear technologies that are essential to a fusion reactor in an integrated system, and it will provide a facility for fusion nuclear and materials science investigations. Participation in ITER not only allows the United States to share the costs of these activities but is the only opportunity for the United States to be involved in essential fusion energy technology development. These ITER studies of the physics of burning plasmas and nuclear and materials science, plus the technology demonstrations, are relevant not just to the Tokamak but also to alternate concepts of magnetic confinement.

### Turns Case – Fusion Commercialization

#### ITER determines the pace of commercialization.

**Cunningham**, 8/15/**2012** (Nicholas – policy analyst in energy and competitiveness at the American Security Project, Fusion Budget on Hold, American Security Project, p. <http://americansecurityproject.org/blog/2012/fusion-budget-on-hold/>)

Along with national programs, the internationally-backed ITER facility, which is currently under construction in France, will demonstrate that net energy gain is possible (more power out than is put in). ITER is a top priority for fusion scientists, as its success will determine how quickly we can commercialize fusion energy. However, the success of ITER is contingent on strong support from individual countries. That means that the advancements and innovations from U.S. research labs and universities are critical ingredients for the ITER facility. Therefore, if we are to commercialize fusion reactors in the coming years, it will be done because of a symbiotic relationship between ITER and country-specific labs around the world. One cannot be successful without the other.

### Turns Case – Timeframe

#### ITER will be ready in eight years—turns the aff faster

**Burgess**, 9/25/**2012** (James – Deputy Editor of Oil Price, A Giant Step Forward in Nuclear Fusion, Oil Price, p. http://oilprice.com/Alternative-Energy/Nuclear-Power/A-Giant-Step-Forward-in-Nuclear-Fusion.html)

ITER will be ready to test its fusion reactor in about 2019 or 2020, and will trigger the reaction by containing the plasma fuel in powerful magnetic fields, and then heating it with particle beams and radio waves.

### Turns Case – Naval Power (Technology Spin-Off)

#### Their authors concede that ITER turns spinoff advantages.

**Gsponder and Hurni**, 2/2/**2008** (Andre – Independent Scientific Research Institute, and Jean-Pierre – Independent Scientific Research Institute, ITER: The International Thermonuclear Experimental Reactor and the Nuclear Weapons Proliferation Implications of Thermonuclear-Fusion Energy Systems, p. 48-50)

[**Their card starts]**

2.7.2 Military spinoffs of MCF technology In a compilation of several surveys, it was found that the most numerous technology transfers from magnetic fusion research to other areas of science and technology were in the domains of magnet technology, power supplies, materials technology, particle beams, power supplies and vacuum technology [73]. These types of spinoffs are similar to those found for high-energy particle accelerator physics research, a domain which like MCF produces relatively few spinoffs of direct importance to industrial development. Superconductive magnet are of great importance for strategic military developments in outer space and ballistic missile defense, as well as for tactical developments such as electromagnetic-pulse generators and electromagnetic guns. The use of cryogenic and superconductive magnets in space is been investigated for pulsed-power generation, power conditioning and energy storage, and was expected to play a major role in the Strategic Defense Initiative (SDI) program [74]. Superconductive magnets are also of great interest for the “plasma separation process” [59] which is potentially the most attractive technique for very high throughput isotope separation [75, 76]. Large scale isotope enrichment is important for the production of 235U as well as for the enrichment of various types of medium weight nuclear species if “isotopic tailoring” becomes an important feature of new materials. Such materials are expected to be necessary for making the first wall of MCF fusion vessels (in order to minimize their erosion and radioactivation due to the intense neutron bombardment from the burning plasma) as well for a number

**[Their card ends --- no text removed]**

2.7.3 Examples of spinoff technologies expected from ITER To conclude this section, we quote in extenso the examples given in section 5.13 devoted to the spinoff benefits of fusion technologies in the summary of the report of the Special Committee on the ITER Project of the Japanese Atomic Energy Commission. This is not to imply that the examples given by the Committee are necessarily relevant to the proliferation of nuclear weapons, but an illustration that they are indeed mostly dual-purpose technologies of great military significance: “Driving force of spinoff technologies Since fusion development requires gathering knowledge from a myriad of advanced technologies, it is now making significant progress as a seed of these technologies. The fusion device is based on diverse research fields and fashioned from advanced technologies, such as physics, mechanical engineering, electric and electronic engineering, materials engineering, thermodynamics, heat transfer flow and thermal engineering, nuclear engineering, cryogenic engineering, electromagnetic dynamics, chemical engineering, and control engineering and instrumentation. Therefore, the development of this compound technology not only advances individual fusion technology but also raises the potential capability of all science and technology by mutual stimulation between different fields of science. The resultant spinoff benefits are seen in commercial technologies, such as the semiconductor industry and the large, precision-machine-tool industry. Fusion research also contributes to the development of advanced technology and basic science of other fields, such as physics, space science, materials science, medicine, communications, and environmental science. These applied sciences include accelerator technology, superconductor technology, diagnosing techniques, plasma application technology, heatproof and heavy-irradiation-proof materials technology, impurity removal techniques, and computer simulation techniques. Examples of spinoff technologies Examples of spinoff technologies include the development of large superconducting coils for ITER, which reduced the cost by 75% of niobium/tin superconducting wire material necessary of the generation of the high-magnetic fields. This has allowed the high-magnetic field-MRI used for medical diagnostics to become relatively commonplace. At the same time, the AC loss has been reduced by 80% of that for conventional superconductors, even at the strong magnetic field of 13 tesla. This makes it feasible to increase the stored energy in a superconducting power storage system by a factor of 5–7 when compared with a system designed with conventional technology and operating at 5–6 tesla. In addition, vacuum pumps for high thermal efficiency refrigerating-machines, which operate below4 K, have been developed and have been adopted at the Fermi National Accelerator Laboratory in the US and CERN in Europe. This also demonstrates the enormous contribution of fusion research to the frontiers of science. The technology of producing large positive-ion-beam currents, originally developed for the heating of fusion plasmas, has already pervaded into the technologies for products used in daily life, such the semiconductors used in the home electric appliances. In addition, the large negative-ion-beam current technology developed for ITER is expected to give birth to completely new research fields, such as the creation of previously unknown materials. The negative-ion beam, which has monochromatic energy, is also suitable for manufacture of intricate semiconductor devices. This allows the realization of low-cost, mass-produced single crystal silicon thin films for solar cells. Furthermore, high-power radiofrequency sources used for plasma heating are already applied to the manufacture of high-performance ceramics. Potential applications of these sources extend from solving environmental problems to the radar used in outer space. The integration of component technology for the fusion reactor also advances the systematic development of technologies addressing integration, such as system engineering, control engineering, and safety engineering. Additionally, an exploratory investigation related to the processing of radioactive waste by utilizing a fusion reactor itself as an intense neutron source is also being carried out and seems promising” [6, p.274275].

### ITER Good – Semiconductors 2NC

#### ITER contributions are key to the manufacturing industry and semiconductor innovation.

**Greenwald**, 7/10/**2012** (John, New Jersey firm creates jobs and vital component for world-leading experiment, Princeton Plasma Physics Laboratory, p. http://www.pppl.gov/webonly.cfm?doc\_id=1278)

The U.S. ITER project office has thus far awarded funding and subcontracts with a total value, including options, of up to $767 million to U.S. companies, universities and DOE laboratories. Funding for the U.S. portion of the ITER project comes from the DOE’s Office of Science through U.S. ITER at the DOE’s Oak Ridge National Laboratory in Oak Ridge, Tenn. “These funds support manufacturing, engineering, and other high tech jobs in the United States,” said Ned Sauthoff, who leads the team executing the U.S. contributions to ITER. “U.S. companies are also winning contracts from other ITER members—about $75 million so far, with more opportunities in the near future.” Oxford Superconducting is among those suppliers with contracts from both the United States and other ITER partner nations. The company has completed an $11.6 million order that came directly from the U.S. ITER office, and is halfway through a $47.3 million contract from the European Union. When measured by the type of wire that ITER requires, Oxford Superconducting has expanded from producing a few tons a year before the orders to 30 tons a year at present. This wire will be a key component of the ten-story tall ITER reactor vessel. When woven into giant electromagnetic coils, the strands from Oxford Superconducting and six other suppliers will produce powerful magnetic fields to confine and shape the hot charged gas called plasma that fuels fusion reactions. Superconducting wire is essential because electric current flows through it without resistance when the wire has been cooled to temperatures far below zero degrees centigrade. This free-flowing current permits superconducting electromagnets to run with relatively little electric input for extended periods of time that would cause conventional wire to overheat and burn out. Filling the ITER orders has strengthened Oxford Superconducting’s design and manufacturing process. “The ITER quality requirements are quite rigorous, so we’ve had to increase our expertise in that area,” said Jeffrey Parrell, Oxford Superconducting vice president and general manager. “These improved skills will be with us after the project is over, and we’ve already applied them to other areas of the business as well.” Such areas include producing the next generation of superconducting wire for particle accelerators so that scientists at DOE national laboratories such as Fermilab in Batavia, Ill., and Brookhaven National Laboratory in Upton, N.Y., can study the basic nature of matter. “We work very closely with the laboratories to make conductor wire, which they use to make better magnets, which feeds back into our conductor design,” Parrell said.

#### Weak semiconductor technology undermines military effectiveness.

**Lieberman**, 6/5/**2003** (Joe – US Senator, The National Security Aspects of the Global Migration of the U.S. Semiconductor Industry, p. http://www.fas.org/irp/congress/2003\_cr/s060503.html)

The Pentagon's Advisory Group on Electron Devices (AGED) has warned that the Department of Defense (DoD) faces shrinking advantages across all technology areas due to the rapid decline of the U.S. semiconductor industry, and that the off-shore movement of intellectual capital and industrial capability, particularly in microelectronics, has impacted the ability of the U.S. to research and produce the best technologies and products for the nation and the war-fighter. This global migration has also been discussed in a recently released National Research Council/National Academy of Sciences report on the U.S. semiconductor industry, which details the significant growth in foreign programs that support national and regional semiconductor industries. This support is fueling the structural changes in the global industry, and encouraging a shift of U.S. industry abroad. critical national security applications Studies have shown that numerous advanced defense applications now under consideration will require high-end components with performance levels beyond that which is currently available. These cutting-edge devices will be required for critical defense capabilities in areas such as synthetic aperture radar, electronic warfare, and image compression and processing. Defense needs in the near future will also be focused on very high performance for missile guidance ("fire and forget"), signal processing, and radiation-hardened chips to withstand the extreme environments of space-based communications and tactical environments. There are profound needs for much more advanced onboard processing capabilities for unmanned aerial vehicles undertaking both reconnaissance and attack missions, for cruise missiles and ballistic missile defense, and for [[Page S7469]] the infrastructure that connects these systems. As the military transforms to a "network-centric" force in the future, the DoD's Global Information Grid will demand extremely high-performance computation to overcome the technical barriers to a seamless communication network between terrestrial 24 and 48 color optical fiber and satellite platforms transmitting in 100+Mbps wireless. Such performance will also be necessary for "last-mile" extremely high-speed connectivity to platforms and to the soldier in the field, as well as for the high-speed encryption requirements for a secure communication system. Intelligence agencies will increasingly need the most advanced chips for very high-speed signal processing and data analysis, for real-time data evaluation, for sensor input and analysis, and for encryption and decryption. As studies for DARPA have indicated, the next several generations of integrated circuits, which emerge at roughly eighteen-month intervals as predicted by Moore's Law, offer the potential for exponential gains in defense war-fighting capability. It is erroneous to believe that future U.S. war fighting capability will be derived from chips one or two generations behind current state-of-the-art technology. Many of the integrated circuits and processing platforms that are coming in to use, and which are at the heart of DoD defense strategies, are clearly at the cutting edge in their capabilities. With the dramatic new capabilities enabled by rapidly evolving chip technologies, DoD and the intelligence agencies will need to be first adopters of the most advanced integrated circuits, and will be increasingly dependent on such chips for a defense and intelligence edge. If the ongoing migration of the chip manufacturing sector continues to East Asia, DoD and our intelligence services will lose both first access and assured access to secure advanced chip making capability, at the same time that these components are becoming a crucial defense technology advantage. Informed elements of the intelligence community therefore have made clear that relying on integrated circuits fabricated outside the U.S. (e.g. in China, Taiwan and Singapore) is not an acceptable national security option.

#### Collapse of military effectiveness causes aggression --- results in nuclear war.

**Feldstein**, March/April **2007** (Martin – George F. Baker Professor of Economics at Harvard University, President Emeritus at the National Bureau of Economic Research, The Underfunded Pentagon, Foreign Affairs, p. Lexis)

Deterring other great powers, such as Russia and China, will require Washington to maintain its dominance in conventional warfare and therefore at least to maintain its current level of military spending. But in addition, the United States now faces three new types of threats for which its existing military capacity is either ill suited or insufficient. First, there are relatively small regional powers, such as North Korea, Iran, and Pakistan, that can or will soon be able to strike the United States and its allies with weapons of mass destruction (WMD). Second, there are global nonstate terrorist networks, such as al Qaeda, with visions of re-creating the world order. And third, there are independent terrorists and groups motivated less by a long-term vision of global conquest than by hatred, anti-Americanism, and opposition to their own governments. Each of these threats is exacerbated by the relative ease with which crude WMDs can be developed due to the diffusion of modern technology and the potential emergence of a black market in fissile material. Furthermore, there seems to be general agreement that the United States has committed so much of its war-fighting capacity to Iraq and Afghanistan that it could not fight in Iran or North Korea or elsewhere if that were deemed necessary. That limit on capacity encourages U.S. adversaries to behave in ways that are contrary to U.S. interests. Those adversaries would be less likely to do so if Washington had the extra manpower and equipment that were once assumed to be the goal -- and perhaps the reality -- of the U.S. military structure.

### Science Diplomacy Good – Middle East 2NC

#### Science diplomacy prevents Middle East war.

**El Hassan**, 9/6/**2012** (Sumaya bint – president of Jordan’s Royal Scientific Society, New Partnerships to Sustain the Middle East and the World, Science & Diplomacy, p. http://www.sciencediplomacy.org/perspective/2012/new-partnerships-sustain-middle-east-and-world)

These challenges to our stability and prosperity are not ideological or cultural, they are existential and diplomatic. We must facilitate global science in order to find the solutions that we urgently need. Global science must aid the deployment of creative ingenuity to ease crises and to unite us all in a common search for a better, more prosperous future. Diplomats must challenge their short-term political paymasters and create a dialogue that reaches beyond the borders of states and ideologies. Similarly, scientists must acknowledge their responsibility to convey scientific discourse to the policy arena. There is no doubt that diplomats and scientists are cut from a different cloth; caution and circumspection are considered virtues in the former, while the latter must often break rules and disavow convention in order to forge a new and better reality. But our current predicament requires that both groups work together as a unified and uncompromised force. We must insist that diplomats and scientists treat each other as partners in a desperate bid to avert catastrophe. The Middle East is facing existential challenges that may be more apparent in certain places than others, but are universal in our age. We must acknowledge the real issues that we all face, and we must encourage the historic refusal of scientists to accept the status quo. It is this dogged approach that has spurred progress through the ages. Today, diplomats must think in the same way, for only scientific ingenuity, with the support of diplomatic creativity and drive, can respond to the defining challenges of our twenty-first century—in the Middle East and around the world. We must be ever-mindful of how we go about facilitating science cooperation, for all of us come to the table with realized and unrealized cultural baggage. For this reason, we should be very clear from the outset about our objectives and our understanding of scientific universality. Scientists and diplomats alike must agree that standards should prevail over values, and we must acknowledge where we are before we can hope to plan a future in which want allows ideologues to seize a platform.

#### Global nuclear war

Gold 7 (Thomas J., Masters in Strategic Intelligence – Joint Military Intelligence College, Nuclear Conflict in the Middle East: An Analysis of Future Events, p. 53-55)

If the political, ethnic, and military policies, and future nuclear weapons development in the Middle East continue in their present directions, Iran or Iraq will eventually initiate a nuclear conflict, probably in the 2005-2015 time frame. Major focal events such as total arms control (resulting in a regional NWFZ), individual acceptance of the NPT, or changes in Middle East leadership will ultimately determine which future happens. FUTURE INDICATORS A constant watch is needed to assess the actions, intentions, and progress of the Middle East countries with their nuclear programs. As well as the status of each country’s nuclear program, its military capability and intentions must also be monitored to determine which future direction is most likely and if the first use of nuclear weapons is likely. ‘Future Indicators” verify the progress of each country toward the most likely “Alternate Future”. Future No. 23 (most likely,): Israel, Iran, and Iraq have developed nuclear weapons. Israel and Iran have kept their weapons as a deterrent. Iraq is the first to use nuclear weapons, probably for aggression. Depending on which Middle East country is attacked by Iraq, either Israel or Iran will retaliate with a secondary nuclear strike. Actions by the U.S., Russia, or other countries will have little effect in deterring this retaliation. This future scenario also carries the risk of escalation into a regional or global nuclear conflict if the major nuclear powers become involved. This scenario can only take place if Iran chooses to retain its nuclear weapons for deterrence rather than be aggressive. Note that Iran has developed weapons approximately three years earlier than Iraq. Israel must also be complacent about Iraq’s program and not destroy the Iraqi reactors as it did in 1981. Transposition to Future No. 20: Iran becomes democratic and does not develop nuclear weapons. However, without the appearance of having a potential nuclear capability, Iran will surely become the most probable target of Iraq’s attack. Transposition to Future No. 14: Israel or one of the major nuclear powers takes a major action which deters Iraq from nuclear aggression. This scenario would result in a very unstable situation when all three countries have nuclear weapons. The potential would then exist for a regional dispute to escalate into nuclear conflict. Transposition to Future No. I: Prior to any conflict, all Middle East countries have agreed to a NWFZ, abandoned their nuclear development programs, and destroyed all nuclear weapons and related materials. Indicators for Future Scenario No. 23: A tier the development and assembly of a nuclear device, Iraq may test the weapon within Iraqi territory to verify its design, or politically move Iraq into being a nuclear power: this action would be a major step toward regional hegemony. After testing this weapon, Iraq may also begin a buildup of its nuclear capability for future deterrence or aggression. Future No. 17 (second most likely): Israel and Iran have developed nuclear weapons. Iraq program is not complete, and Israel has kept its weapons as a deterrent. Iran is the first to use nuclear weapons, probably for aggression. As the status of the Iraqi program is uncertain, the most probable target for an Iranian first strike using nuclear weapons is Israel. A nuclear retaliation by Israel would be certain. The potential now exists for the involvement of the major nuclear powers, the U.S. siding with Israel, and Russia siding with Iran. Escalation to regional or global nuclear war is now a possibility.

### AT: Domestic Base Key

#### Doesn’t take out our impact – even if domestic fusion scientists decline, U.S. participation ensures international collaboration at ITER. That’s Fedoroff 2008.

#### Goldilocks --- current cuts will not hamper domestic capacity --- but the plan kills ITER.

**Hand**, 7/24/**2012** (Eric, US fusion in budget vice, Nature, p. http://www.nature.com/news/us-fusion-in-budget-vice-1.11061)

For years, US researchers have been steadfast in their support of ITER, the world’s largest fusion-energy experiment, which is under construction near Cadarache, France. But with funding commitments to ITER now putting the squeeze on three existing facilities in the United States, enthusiasm for the international project is becoming as difficult to sustain as a fusion reaction. “I think we should ask whether this is the right path,” Earl Marmar, head of the Alcator C-Mod fusion experiment run by the Massachusetts Institute of Technology in Cambridge, told colleagues on 18 July. The venue was a meeting of a US Department of Energy (DOE) group tasked with setting priorities for the non-ITER portion of the US fusion programme. At the meeting, in Bethesda, Maryland, Marmar pointed out that when US fusion researchers signed on to ITER in 2003, the project’s total construction cost was projected to be about US$5 billion, of which the United States would provide 9% over ten years. Now, the construction costs are projected to be roughly four times as much. Furthermore, the funds to support ITER were not supposed to be siphoned from existing facilities — yet if the total budget for US fusion science remains flat, as is expected, that is precisely what will happen (see ‘Death by ITER’). Marmar’s facility houses one of three US tokamaks — doughnut-shaped vessels in which physicists magnetically confine hydrogen nuclei in a plasma and heat them until they fuse and liberate energy. Alcator received $29 million in federal funding this year. But as ITER payments increase, US President Barack Obama’s 2013 budget proposal for the DOE would chop Alcator’s allocation back to $16 million, shutting down operations and forcing the experiment to lay off more than half of its 120 staff members. Stephen Dean, president of Fusion Power Associates, an advocacy group in Gaithersburg, Maryland, says that DOE officials have little choice but to cut Alcator, the smallest of the three US experiments, to afford an overall US ITER commitment that has grown to about $2.2 billion. “Why can’t we get by with two?” asks Dean. “It’s not an insubstantial argument.”

#### Current cuts won’t affect domestic fusion --- duplication solves.

**Malakoff**, 3/21/**2012** (David, Proposed U.S. Fusion Cuts Ignite Debate, Science Insider, American Association for the Advancement of Science, p. <http://news.sciencemag.org/scienceinsider/2012/03/proposed-us-fusion-cuts-ignite.html>)

Members of the panel repeatedly asked Brinkman about the implications of a plan, outlined in the Obama Administration's 2013 budget request released in February, to trim DOE's fusion energy sciences budget by 0.8%, to $398 million. At the same time, the budget would increase the U.S. contribution to ITER, a $23 billion fusion reactor being built in Cadarache, France, to $150 million, up from $105 million this year. To help pay for the ITER increase, DOE is proposing to shut down a fusion experiment known as the Alcator C-Mod at the Massachusetts Institute of Technology (MIT) in Cambridge. Cutting C-Mod, which is one of three major fusion devices in the United States, would save $18 million in the next fiscal year, which begins in October. That plan, Brinkman told committee members, partly reflected an effort to avoid duplication, since C-Mod does research that could also be done elsewhere in the United States and abroad. "I don't want to belittle the MIT work, [they have] done some very fine work," he said. But the other two U.S. fusion projects—particularly the DIII-D tokamak operated by General Atomics in San Diego, California—are now more scientifically productive, he said.

#### Turns the case – domestic research alone cannot produce fusion --- only ITER solves.

**Kanter**, 4/29/**2009** (James, A Clean Energy Machine That Works Like the Sun, The New York Times, p. <http://www.nytimes.com/2009/04/30/business/energy-environment/30fusion.html>)

China, the United States, Japan and the European Union have committed billions of dollars to construction of the International Thermonuclear Experimental Reactor, or ITER, in a heavily forested corner of Provence called Cadarache that is a center for atomic research. The goal is to prove that energy can be generated through nuclear fusion — a process akin to how light and heat are produced by the sun. The promise is virtually unlimited amounts of energy from abundantly available sources. Fusion creates no greenhouse gases and produces far less hazardous waste than fission, the current nuclear process, although fusion reactors do become radioactive and waste would still require special disposal. If successful, the concept is not expected to be commercially viable until midcentury. There has already been a two-year delay because of difficulties setting up an international organization for the project. Rising costs for equipment could further complicate relations among the participants, which include South Korea, India and Russia. Even so, scientists say an international approach is critical. “No one nation can develop fusion alone,” said Pascal Garin, the project leader at the International Fusion Material Irradiation Facility in Japan, which is helping to develop materials for the reactor. “The technical and economic challenges are enormous compared with other low-emissions technologies like solar power or conventional nuclear power.” The original budget, set in 2001, was about $10 billion, to be spent over 30 years. About half that amount was to be spent by participating governments on national projects to build components for the reactor.

#### Turn – ITER contracts are key to generate domestic fusion expertise.

**Greenwald**, 7/10/**2012** (John, New Jersey firm creates jobs and vital component for world-leading experiment, Princeton Plasma Physics Laboratory, p. http://www.pppl.gov/webonly.cfm?doc\_id=1278)

ITER represents the next major step toward the development of a commercial fusion reactor. The project will be the largest experimental fusion facility, or tokamak, ever constructed. Plans call for ITER to produce 500 million watts of fusion power for at least 400 seconds by the late 2020s, and to deliver up to 10 times more energy than will be needed to create the power. ITER also represents an unprecedented example of scientific coordination on a global scale. The project is a joint effort of the United States with the People’s Republic of China, the European Union, India, Japan, the Republic of Korea, and the Russian Federation—a partnership that includes more than half the world’s population. U.S. ITER contractors include the U.S. Department of Energy’s (DOE) Princeton Plasma Physics Laboratory (PPPL), which is managed by Princeton University. More than $100 million of U.S. ITER funds will flow through PPPL for diagnostic and electric network equipment over the next 10 years. PPPL will do part of this work itself and subcontract some 60 percent of the funds to research institutions and private industry. (PPPL's work on ITER diagnostics) “Participating in ITER is vital to the mission of our Laboratory,” said PPPL director Stewart Prager. “We contribute our expertise and share in the knowledge of fusion energy that’s generated by the ITER project.”

#### ITER allows the U.S. to hedge our bet --- provides expertise even if the domestic industry fails.

**de Grouchy and Turrell**, January **2012** (Philip – PhD student in the Plasma Physics group at the Imperial College London, and Arthur – PhD student in the Plasma Physics group at the Imperial College London, Fusion 2012: A Community Holds Its Breath, A Global Village, Issue 6, p. <http://aglobalvillage.org/journal/issue6/atoms/degrouchyturrell/>)

The US hedges their bets with a 13% stake in ITER – ensuring their plasma scientists will be at the cutting edge in the tokamak community should the NIF fail. With a 10% share in ITER, China is involved in cutting-edge fusion for the first time, and they claim4 to be training 2,000 new plasma specialists to ensure a return on their investment.

### AT: No Impact to Budget Cuts (Feder 2012)

#### Doesn’t take out the impact --- their Feder ev only indicates that the ITER program could absorb the technical knowledge losses from the cuts. Our impact is based off a signal of U.S. commitment to ITER which the plan collapses. That’s Federoff 2008.

#### Cuts snowball internationally.

**Fairley**, February **2008** (Peter – reporter for IEEE Spectrum, Does Fusion Have a Future?, IEEE Spectrum, p. http://spectrum.ieee.org/energy/nuclear/does-fusion-have-a-future)

If the United States does drop out of ITER, that could weaken support among other ITER players. Britain pulled its funding for another international R&D megaproject, the $6.7 billion International Linear Collider, after Congress effectively froze U.S. participation in the project. The International Linear Collider is the successor to the CERN (European Organization for Nuclear Research) Large Hadron Collider, which is to begin operations this year.

#### Intel:

No impact to budget cuts

Feder 12 (Toni, Editor – Physics Today, "Progress in Fusion, But Not in its US Funding", Physics Today, June, http://www.physicstoday.org/resource/1/phtoad/v65/i6/p25\_s1?view=print)

To meet its obligation, the US will have to ramp up spending on ITER. “In any reasonable funding scheme, it’s going to be $300 million to $400 million a year,” says Marmar. That money was never intended to come from the US domestic fusion program, but “that is where we are headed on a flat budget,” notes Marmar, and if it does “you would basically wipe out our community.” Although US ITER project manager Ned Sauthoff won’t put a figure to it, he says his team has less costly funding scenarios. “We are working hard to determine to what extent we can reduce costs while maintaining performance.” If funding falls short for only one year, the ITER organization expects it could shuffle things to avoid delays. “The US is the weakest link,” says Stewart Prager, director of the Princeton Plasma Physics Laboratory. “It’s unbelievable.”

### Science Diplomacy Good – CBW 2NC

#### Science diplomacy spurs effective cooperation on bioterror containment.

**Lugar**, 3/9/**2012** (Richard – Senator and Ranking Member on the Foreign Relations Committee, Nunn-Lugar: Science Cooperation Essential for Nonproliferation Efforts, Science & Diplomacy, p. http://www.sciencediplomacy.org/perspective/2012/nunn-lugar)

In the coming decades, the effectiveness of our response to most of the world’s problems, including maintaining energy supplies, sustaining abundant food production, dealing with water scarcity, combating virulent diseases, responding to environmental disasters, as well as containing proliferation of weapons of mass destruction, will depend on the investments that we have made in global knowledge, scientific relationships, and communications. We also must be alert to new WMD threats, and new sources of dangerous material that may exist in laboratories around the world. In my view, one of the most underrated dangers is the risk of biological weapons. One area of particular concern is Africa, where numerous deadly viruses exist in nature, such as Ebola and Marburg. They are easier to handle than nuclear material and harder to detect. Al Qaeda has made no secret of its desire to use biological weapons, and Africa contains many poorly governed spaces where terrorists hide and thrive. Deadly agents can be crudely weaponized through dispersal in an air-conditioning system or contamination at a salad bar. Self-infected suicidal bioterrorists could travel anywhere in the world in just days. Even the simple act of creating random outbreaks of deadly diseases could produce terror and chaos. During the Cold War, the Soviet Union obtained from Africa the original samples of viruses and bacteria for its vast bio-weapons program. That’s why the Nunn-Lugar program is now paying special attention to potential threats from Africa, along with the former Soviet states and South Asia. To improve America’s bio-defense preparedness, we must stop pathogen spread before it reaches our shores. A potential source of pathogens that could be used in a bioterror attack are the hundreds of poorly-secured laboratories in Africa and elsewhere around the world where deadly disease agents are collected, stored and studied. These facilities, especially in developing countries, often lack sufficient safeguards to prevent break-ins and theft by terrorists, or smuggling by insiders. In 2010, I led a mission to Africa to assess the threat and found glaring security problems at several research installations. In Nairobi, Kenya, for instance, we inspected a public health disease laboratory located next to a known recruitment ground for Al Shabaab, the Somalia-based terrorist group affiliated with Al Qaeda. The laboratory compound was easily accessible, and, inside a building, bacteria and virus samples were stored in refrigerators with simple locks. There was no system to monitor what went in or out of the refrigerators, meaning that deadly samples could have been smuggled out without detection. This is clearly an area where Nunn-Lugar’s biological expertise can help protect Americans at home and our service personnel overseas. In Africa, as well as in South and Central Asia, the program is helping to secure vulnerable facilities, promote cooperative research and transparency in the handling of dangerous pathogens, and build an early warning system that will enable us to detect and diagnose infections quickly. Proliferation of weapons of mass destruction remains the number one national security threat facing the United States and the international community. I have never considered Nunn-Lugar to be merely a program, or a funding source, or a set of agreements. Rather it is an engine of nonproliferation cooperation and expertise that can be applied around the world. In this way, international scientific collaboration can make a significant contribution to making the world safer for our children and grandchildren.

### Science Diplomacy Good – China 2NC

#### Science diplomacy is key to US/China relations.

**Rock 5** (Anthony, Principle Deputy Assistant Secretary of State – Bureau of Oceans and International Environmental and Scientific Affairs, “Hearing on China’s High Technology Development Before U.S.-China Economic and Security Review Commission”, 4-21, http://www.uscc.gov/hearings/2005hearings/written\_ testimonies/05\_21\_22wrts/rock\_anthony\_wrts.htm)

The Administration also believes that U.S.-China S&T cooperation has played a consistent stabilizing role in U.S.-China relations. While the overall U.S.-China relationship may swing up or down as a result of political and economic developments, changes in leadership and other factors, the U.S.-China S&T relationship has remained a largely stable pillar of the bilateral relationship, allowing a continuance of cooperative activities in science and technology at levels determined more by scientific accomplishment, interest and available budget than by geopolitical interest.

#### Relations stop global nuclear war

Conable and Lampton, 93 (Barber B., President Emeritus – World Bank and David, President – National Committee, “China: The Coming Power”, Foreign Affairs, December / January, Lexis)

Regionally American interests are both numerous and important. The two most protracted, economically distracting and politically explosive American military commitments in the post-World War II era were Korea and Vietnam. In both cases China figured prominently. The lesson is that regional stability requires workable U.S.-China relations. Competition between Beijing and Washington takes the form of exploiting indigenous regional conflicts by both powers, resulting in local problems that expand to suck both countries into a self-defeating vortex. The most serious threats to American security and economic interests in Asia include armed conflict with nuclear potential between the two Koreas and between India and Pakistan; a deterioration of relations between Beijing and Taipei that could lead to economic or military conflict; a re-ignition of the Cambodian conflict; and a botched transition to Beijing's sovereignty in Hong Kong in 1997. None of these problems can be handled effectively without substantial Sino-American cooperation. Constructive relations with Beijing will not assure P.R.C. cooperation in all cases; needlessly bad relations will nearly ensure conflict. The Republic of Korea's formal diplomatic recognition of Beijing last August, at the expense of Taipei, is just one indication of the increasing importance the region attaches to building positive ties to the P.R.C.

### AT: U.S. Won’t Bail (Dean 2012)

#### This evidence only proves uniqueness --- the U.S. will commit to ITER now. The plan changes the equation by increasing funding for domestic research. That forces a trade-off. That’s 1NC Washington Post evidence.

#### Prefer our evidence --- it’s comparative to the budgetary process whereas their Dean evidence only speaks to his perceptions of U.S. commitments --- funding is a pre-requisite for commitment.

#### Intel:

U.S. won’t bail

Dean 12 (Dr. Stephen, President – Fusion Power Associates, "Fusion Confusion", Living on Earth – Public Radio International, 3-23, http://www.loe.org/shows/segments.html?programID=12-P13-00012%26segmentID=2)

GELLERMAN: But if the funding for ITER is driving the budget crunch in our domestic fusion energy projects, should we kill it?

DEAN: You see, ITER is an international agreement amongst state department people, among science advisor people, among energy secretary people in these various countries, and this is something that's got, almost, like a treaty attached to it. And so the U.S. feels, at the very highest levels, like Holdren and Chu, that they have to keep their oar in.

### AT: Other Countries Will Kill Cooperation

#### U.S. presence pressures other nations to stay on-board.

**Brumfiel**, June **2012** (Geoff, Fusion’s Missing Pieces, Scientific American, Vol. 306, Issue 6, p. EBSCO Host)

Despite these setbacks and the uncertain future of fusion energy as a whole, it is difficult to find anyone familiar with ITER who thinks the machine will not get built. Peer pressure is one reason: "The French are in it and won't back out because the U.S. is in it and won't back out," Cochran says. Political visibility for the countries involved -- and substantial penalties for pulling out early -- also serves to keep the project moving, Tuinder observes.

#### Signal key

**Jones**, 1/8/**2007** (Richard – Media and Government Relations Division at the American Institute of Physics, Letter Seeks U.S. Funding for ITER, p. http://www.aip.org/fyi/2008/004.html)

Twenty leaders in the U.S. fusion community have sent a letter to OSTP Director John Marburger, Energy Secretary Samuel Bodman, Senate Energy and Water Development Appropriations Subcommittee Chairman Byron Dorgan (D-ND), and House Energy and Water Development Appropriations Subcommittee Chairman Peter Visclosky (D-IN). (Visclosky and Dorgan have jurisdiction over funding for the Office of Science.) "We most respectfully urge that funding be provided for continued U.S. participation in ITER," the letter states, continuing, "We also ask that funding be restored to the other areas of the Department of Energy's Office of Science." The Administration sends its FY 2009 budget to Congress on February 4. Senior Department of Energy officials will describe their request that day, and may comment on the FY 2008 outcome. Copies of this letter were also sent to Energy Under Secretary for Science Raymond Orbach, and the leadership and members of relevant House and Senate appropriations and authorization committees. The full text of the January 4 letter follows: "Dear Dr. Marburger, Secretary Bodman, Chairman Dorgan and Chairman Visclosky: "Despite being fully funded in the President’s and in the House and Senate Appropriations measures, the Fiscal Year 2008 omnibus funding measure contains $0 for the U.S. contribution to the ITER Project. ITER is the key breakthrough project for magnetic fusion energy. The purpose of the ITER Project is to 'demonstrate the scientific and technological feasibility of fusion energy for peaceful purposes.' If the United States cannot participate in ITER, the U.S. will lose a centerpiece of its own fusion program, a key scientific tool for understanding a fundamental process in the universe (burning plasmas like those in the sun and stars) and the pathway to the future of fusion energy. "ITER is a joint project of the China, the European Union, India, Japan, Korea, Russia and the United States. Congress authorized U.S. participation in this project in the Energy Policy Act of 2005 and the President committed the United States to its approximately 10% share of the ITER construction just a few months ago. Failure by the United States to sustain its international commitments to ITER seems certain to establish the United States as an unreliable partner not only in the ITER project, but in many other areas of science. This comes at a time when the expense and scope of many critically important scientific activities suggest international partnership and cooperation. "Therefore, for the sake of the international and domestic fusion effort and for the sake of the U.S. reputation in the international scientific community, we most respectfully urge that funding be provided for continued U.S. participation in ITER. "Finally, as scientists concerned about the whole U.S. scientific enterprise, we also ask that funding be restored to the other areas of the Department of Energy’s Office of Science. There is no doubt that scientific progress on a broad variety of fronts is essential for our nation’s future. These areas of science also represent essential fronts in our understanding of the universe and the basic functioning of the world around us. We therefore urge that these budgets also be made whole. "Thank you in advance for your attention to this important matter."

The letter was signed by:

Mohamed Abdou; University of California, Los Angeles

Charles Baker; University of California, San Diego

Michael Brown; Swarthmore College

John Cary; University of Colorado

Steven Cowley; University of California, Los Angeles

Stephen Dean; Fusion Power Associates

Robert Goldston; Princeton University

Adil Hassam; University of Maryland, College Park

Richard Hazeltine; University of Texas at Austin

Thomas Jarboe; University of Washington

Arnold Kritz; Lehigh University

Stanley Milora; Fellow, American Physical Society

Gerald Navatril; Columbia University

Miklos Porkolab; MIT

Stewart Prager; University of Wisconsin

Ned Sauthoff

Ron Stambaugh; General Atomics

George Tynan; University of California, San Diego

James Van Dam; University of Texas at Austin

Glen Wurden; Los Alamos National Laboratory

### AT: Budget Sequestration

#### Sequestration cuts are weakened --- they won’t affect major programs.

**O’Connell**, 1/2/**2013** (Michael, Analysis: Sequestration postponed? What's does that mean?, Federal News Radio, p. <http://www.federalnewsradio.com/1007/3178452/Analysis-Sequestration-postponed-Whats-does-that-mean>)

Brian Friel, a federal business intelligence analyst with Bloomberg Government, told The Federal Drive with Tom Temin and Emily Kopp today that the new legislation both delayed sequestration and reduced its potential effect. "We were looking at $109 billion in potential sequestration prior to the passage of this bill," he said. "Now we're looking at $85 billion as the ceiling, because Congress took $24 billion of the original $109 billion and shifted it. So, $12 billion of that cut has now been taken care of through a change in the tax code. The other $12 billion is being dealt with by changes in the budget caps for 2013 and 2014, so kind of pushing out the potential effect of the cuts so that they can be dealt with later. It's basically a 22 percent reduction in the potential threat of sequestration, which will potentially take place in March unless Congress and the White House can agree on further reducing the potential impact of it." Currently, the government is operating under a 2012 countinuing resolution, which runs out in March. "The way they structured those cuts is they reduced what they called the discretionary spending caps for non-security and security spending both for 2013 and 2014," Friel said. "So, $8 billion of that $12 billion has been shifted out into 2014 in the form of lower overall caps for that year." That leaves only $4 billion in potential cuts for 2013, split 50-50 between defense and non-defense spending. New Congress must resolve sequestration Friel said those cuts would occur in an after-session sequestration, which the new law says will occur on March 27, the day the CR expires. "Essentially, that $4 billion would have to come through a second sort of follow-on sequestration order from the administration," he said. "One thing to keep in mind is that $2 billion on the non-defense side, the reduction in the cap, still leaves the overall cap higher than what the current spending level is for non-defense. Essentially, that's something of a phantom cut. It can be made without actually affecting any programs."

#### No risk of sequestration

**Thompson**, **1/2**/2013 (Loren – contributor to Forbes, Sequestration Threat To Defense Sector Begins To Recede, Forbes, p. http://www.forbes.com/sites/lorenthompson/2013/01/02/sequestration-threat-to-defense-sector-begins-to-recede/)

Thus, the euphoria that stock traders are exhibiting today may be a bit premature. However, what traders see is that America’s seemingly dysfunctional political system is still capable of dealing with challenges if the stakes are really high. So there is reason to suspect that when the next round of fiscal crises looms in March, more compromises will be made to avert the danger. That has to be good news for the defense sector, which has been facing the prospect of “across-the-board” spending cuts in the Pentagon budget pursuant to the Budget Control Act of 2011. The cuts, called sequestration in their first year, would lower the baseline for defense spending through 2021 in a manner certain to eventually squeeze defense-industry profits. The cuts would total $55 billion every year beginning in fiscal 2013. What makes them draconian is that they come on top of similarly-sized cuts over the same period that were implemented last year as part of the same law. So whereas the Obama Administration was projecting two years ago that the Pentagon’s base budget would total nearly $600 billion in 2013 — not counting spending on overseas wars — the amount after both waves of cuts are implemented would be more like $490 billion. That’s a mighty big drop if you were planning your programs on the basis of the original number, as the defense industry was. And it was made worse when President Obama announced last summer that he would exercise his authority under the budget law to exempt military personnel from the cuts. In other words, the $55 billion in cuts mandated for 2013 on top of similar cuts already implemented would end up coming mainly out of the accounts on which contractors count for most of their revenues — research, procurement and maintenance. So sequestration as currently defined doesn’t really involve “across the board” cuts for the Pentagon, because the quarter of its budget allocated to military pay and benefits wouldn’t be reduced at all. But the rest of its budget would see a reduction of about 13% in one year, on top of previous cuts, and the reduced spending baseline would then remain in place for the rest of the decade. Defense companies have good reason to think they are being disproportionately targeted by budgeteers, since the Obama Administration had already spent two years slashing weapons accounts even before the Budget Control Act became law in August of 2011. Against this backdrop, the increases that most of the biggest defense contractors experienced in their share prices during 2012 might be viewed as the triumph of hope over actual news. As the Silverline Group noted in its monthly review of the sector on New Year’s Day, military-system integrators such as Exelis, L-3, Lockheed Martin, Northrop Grumman and Raytheon saw their shares rise 20% or more during the year despite the media drumbeat of impending doom. Granted, the rise was due in large part to strong financial performance as the companies outperformed expectations quarter after quarter. Analysts who took the negative news coverage at face value and predicted weakening results for the defense sector last year turned out to be dead wrong. However, it wasn’t just the numbers that led investors to stay engaged with defense shares in 2012, it was also a widespread conviction that in the end the political system would not go through with destructive cuts to the nation’s defense posture. Now we have some empirical evidence that the optimists were right. Despite dissatisfaction in both parties about the details of the new fiscal package, history will record the outcome of negotiations as a bipartisan compromise that averted a recession. When the chips were down, the parties proved to be flexible. So it seems a safe bet that the same thing will happen when more crises come along in March. The debt limit will be raised, the stopgap spending measure currently funding government operations will be replaced by something that avoids a shutdown, and the sequestration provisions of the Budget Control Act will be diluted.

## Fusion Adv

### AT Aerospace

#### -- Aerospace strong and competitive now

Carpenter and Deputla 8 (Mace, Colonel – US Air Force and David, Brigadier General – Air Force Quadrennial Defense Review Division, “Aerospace Nations; Invest in Improving the Air Force”, Washington Times, 2-21, Lexis)

We are an aerospace nation in many ways. Our commercial air arm towers over any other nation. Our Navy's ability to project airpower from the sea is unmatched by any other navy. Our Marines' ability to provide close support to surface forces is "par excellence." Our Army's helicopter force - more than 6,000 strong - is the largest in the world. Our Air Force leads the world in aerospace capability in all aspects of the third dimension. Charged with leading military operations in air, space, and cyberspace, the Air Force provides the global vigilance, global reach and global power that underpin us as the world's sole superpower. National security actions are conducted much faster today than in the past; therefore, the speed and accuracy of air, space and cyber operations has become increasingly important. With other nations' growing ability to conduct precise kinetic and cyber attacks against us, we must preserve our capability to preempt, defend and rapidly respond.

#### -- Alt causes to aerospace decline (lack of investment, outsourcing, economic downturn, and infrastructure)

Walker 2 (Robert, Chair – Commission on the Fuure of the U.S. Aerospace Industry, “Final Report”, November,

http://www.trade.gov/td/aerospace/aerospacecommission/AeroCommissionFinalReport.pdf)

The U.S. aerospace sector, most notably the commercial air sector, is seen increasingly as a mature industry lacking in capital investment, innovation, and capacity for growth. Aerospace sector market capitalization, research and development investments and return on investments/assets are down and consolidations are up. The U.S. is losing global market share and its positive balance of trade in aerospace manufacturing is eroding. Jobs are going overseas. The U.S. economic downturn, coupled with the additional security costs resulting from the September 11 terrorist attacks, is crippling the airlines and causing massive layoffs. Meanwhile, today’s air transportation system—based on 1960s technology and operational concepts—is reaching capacity, resulting in increasing delays and costs for both passengers and shippers. At the same time, government investments in longterm civil aerospace research are static, if not declining in real terms. The lack of sustained, long-term investment is stifling innovation and preventing the establishment of new economic growth curves for air transportation and space. While the military has recently received significant increases, both in research and development and in procurement accounts, those increases focus on near-term counter-terrorism and homeland security problems and may be short-lived. The aerospace workforce and infrastructure are aging, and there is a lack of compelling vision or robust financial outlook to draw our youth into this important business sector.

### No Retal

#### -- No targets and can’t trace weapons

Dowle 5 (Marke, Graduate School of Journalism – University of California, Berkeley, California Monthly, September, http://www.alumni.berkeley.edu/Alumni/Cal\_Monthly/September\_2005/COVER\_STORY-\_Berkeleys\_Big\_Bang\_Project\_.asp)

Because terrorists tend to be stateless and well hidden, immediate **retaliation** in kind **is** almost **impossible**. But some nuclear explosions do leave an isotopic signature, a DNA-like fingerprint that allows forensic physicists such as Naval Postgraduate School weapons systems analyst Bob Harney to possibly determine the origin of the fissile material in the bomb. **Nuclear forensics is not a precise science**, Harney warns. Post-attack sites are almost certain to be contaminated with unrelated or naturally occurring radioactivity, and there are numerous, highly enriched uranium stashes in the world with unknown signatures. But there is no question, according to Peter Huessy, a member of the Committee on the Present Danger and consultant to the National Defense University in Washington, D.C., that Russian forensic experts could quickly detect Russian isotopes, and that highly enriched uranium (HEU) from, say, France could readily be differentiated from American HEU. But, Huessy warns, distinguishing post-blast residues of Pakistani uranium from North Korean uranium **would be** more challenging, probably **impossible**. Because neither country is a member of the International Atomic Energy Agency, IAEA inspectors have been unable to **collect** from their facilities **reliable** isotope **samples** that could be compared to post-attack residues. **Even if** **the uranium** were traced, the source nation could claim that the material had been stolen.

### 2NC No Econ War

#### AND - even if wars occur, they won’t escalate.

Bennett & Nordstrom 2k [Department of Political Science Professors @ Penn state U, D. Scott and Timothy, “Foreign Policy Substitutability and Internal Economic problems in Enduring Rivalries” Journal of Conflict Resolution, Feb., p33-61]

When engaging in diversionary actions in response to economic problems, leaders will be most interested in a cheap, quick victory that gives them the benefit of a rally effect without suffering the long-term costs (in both economic and popularity terms) of an extended confrontation or war. This makes weak states particularly inviting targets for diversionary action since they may be less likely to respond than strong states and because any response they make will be less costly to the initiator. Following Blainey (1973), a state facing poor economic conditions may in fact be the target of an attack rather than the initiator. This may be even more likely in the context of a rivalry because rival states are likely to be looking for any advantage over their rivals. Leaders may hope to catch an economically challenged rival looking inward in response to a slowing economy. Following the strategic application of diversionary conflict theory and states’ desire to engage in only cheap conflicts for diversionary purposes, states should avoid conflict initiation against target states experiencing economic problems.

## CP

#### C) Plant construction ---

**Perlman**, 1/29/**2010** (David - Chronicle science editor, Focusing 192 lasers on one little target, San Francisco Chronicle, p. http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/01/29/MN5K1BOF4V.DTL&tsp=1)

The National Ignition Facility is a 10-story building that was dedicated in May on the heavily guarded and highly classified Livermore site. But for many decades, Livermore scientists foresaw the need for increasingly **powerful lasers to reach ignition**. Lasers called Janus, Cyclops, Argus and the 20-beam laser named Shiva were used to conduct crucial experiments that led to the 10-year development of the laser array. Thermonuclear reactions The new laser array will be used to **trigger thermonuclear reactions mimicking in miniature the** deadly **energy of thermonuclear weapons**, and those efforts are the principal aim of the project. It is largely funded by the National Nuclear Security Agency, which oversees America's arsenal of nuclear weapons and seeks to maintain their safety and reliability as the weapons age. But many scientists foresee that experiments like the ones at the ignition facility could **lead the way to the eventual construction of large-scale fusion reactor power plants** capable of generating countless megawatts of electricity using the hydrogen isotopes from ocean water as **endless fuel**. B. Grant Logan, director of a separate and unclassified attempt to achieve ignition based at the Lawrence Berkeley National Laboratory, said the new report is highly encouraging. The report, he said in an e-mail, shows "remarkable progress toward the scientific demonstration of fusion ignition and energy gain in the laboratory for the **first time in the world**. **At the rate they are going**," he said, "it does appear to me that **fusion ignition will be demonstrated soon**."

#### Only the CP solves --- the aff’s technology is impossible.

**Physics Central**, 3/21/**2012** (Fusion Finally on the Horizon?, p. http://www.physicscentral.com/buzz/blog/index.cfm?postid=8345643131457194461)

Because we can't rely on gravity to squeeze fusion fuel together down here on Earth, physicists have been working on a number of alternatives. For the past half century or so most of the focus has been on using magnetic fields to confine gas-like plasmas of super hot hydrogen. Unfortunately, plasmas are slippery and holding onto them for long is very, very difficult. So difficult, in fact, that the approach has been the butt of a longstanding joke that goes something like this, "Practical plasma fusion is only twenty years away, and always will be." It's funny, 'cause it's true. When I was a physics student in the 1980's, the plasma physicists I was working for told me we'd have magnetic fusion reactors in twenty years, and they are saying the same thing today. (Some are even saying it may take thirty years, essentially indicating that the field is making anti-progress towards its lofty goal.) In the meantime, an entirely different approach appears to be moving ahead at leaps and bounds. The National Ignition Facility (NIF) seems to be on track to burn a bit of fusion fuel within the year, and produce megawatts of power for the electrical grid in about ten years, using Inertial Confinement Fusion. Most ICF designs rely on heating a capsule of fuel with a whole mess of high power lasers. That causes the outer shell of the capsule to explode and compress a tiny bit of fuel inside. Once compressed, the hot fuel tends to rapidly expand, but before it can do that it has to overcome inertia, as described by Newton's first law. That doesn't give us a lot of time, but it's enough to create a minuscule version of the sun, even without massive amounts of gravity. All you need to do at that point is harness the energy from the tiny, fleeting sun to heat water and use the resulting steam to turn a few turbines. Yeah, yeah, it's clearly not so easy. Still 60 years of work has proven magnetically confined fusion to be durn near impossible. That's why I'd consider doubling down on the ICF folks, while taking my chips off the magnetic fusion hand.

#### NIF results in the construction and commercialization of fusion technology --- solves U.S. fusion leadership.

**Pomeroy**, 6/21/**2012** (Ross – assistant editor of Real Clear Science, Fusion: The Energy of Tomorrow, Today, Real Clear Science, p. http://www.realclearscience.com/articles/2012/06/21/fusion\_the\_energy\_of\_tomorrow\_today\_106303.html)

Believe it or not, America is nearing the threshold of a fusion future. By the end of 2012, scientists at the National Ignition Facility in Livermore, California plan to fire the most powerful laser ever constructed into a small chamber with pea-sized fuel pellets inside. The fusion fuel contained within the pellets, two isotopes of hydrogen -- deuterium and tritium -- will fuse together, producing helium, a free neutron, and massive amounts of energy in the form of heat. If all goes to plan, about ten to one hundred times more energy than the amount used to ignite the fuel will be unleashed. With this monumental breakthrough achieved, construction could begin on a fusion power plant capable of producing 400 megawatts of base-load power, with a target completion date in the early 2020s. Capital costs would roughly be the same as a current nuclear fission power plant, between $6 and $7 billion. It's a daunting cost to be sure, but one well worth funding. Besides providing a blueprint for future fusion plants, investment in such a facility will drive innovation in multitudes of fields ranging from optics to materials science. After the completion of the fusion test plant, construction of commercial facilities producing between 1,000 and 1,500 megawatts of fusion power can get underway. These power plants will produce electricity that's hard to find fault with. The energy will be base-load -- always available. It will be clean -- there will be no carbon dioxide emissions or hazardous waste. It will be cheap -- early estimates show fusion power to be cost-competitive with coal, even without a carbon tax. It will be nearly limitless -- up to 30 million years of fusion fuel exists on Earth. And most importantly, it will be made in America -- Laser Inertial Fusion Energy (LIFE) has been produced entirely within the United States.

### AT: Perm – Do Both

#### No double solvency --- only the CP solves --- the aff’s technology is impossible.

**Physics Central**, 3/21/**2012** (Fusion Finally on the Horizon?, p. http://www.physicscentral.com/buzz/blog/index.cfm?postid=8345643131457194461)

Because we can't rely on gravity to squeeze fusion fuel together down here on Earth, physicists have been working on a number of alternatives. For the past half century or so most of the focus has been on using magnetic fields to confine gas-like plasmas of super hot hydrogen. Unfortunately, plasmas are slippery and holding onto them for long is very, very difficult. So difficult, in fact, that the approach has been the butt of a longstanding joke that goes something like this, "Practical plasma fusion is only twenty years away, and always will be." It's funny, 'cause it's true. When I was a physics student in the 1980's, the plasma physicists I was working for told me we'd have magnetic fusion reactors in twenty years, and they are saying the same thing today. (Some are even saying it may take thirty years, essentially indicating that the field is making anti-progress towards its lofty goal.) In the meantime, an entirely different approach appears to be moving ahead at leaps and bounds. The National Ignition Facility (NIF) seems to be on track to burn a bit of fusion fuel within the year, and produce megawatts of power for the electrical grid in about ten years, using Inertial Confinement Fusion. Most ICF designs rely on heating a capsule of fuel with a whole mess of high power lasers. That causes the outer shell of the capsule to explode and compress a tiny bit of fuel inside. Once compressed, the hot fuel tends to rapidly expand, but before it can do that it has to overcome inertia, as described by Newton's first law. That doesn't give us a lot of time, but it's enough to create a minuscule version of the sun, even without massive amounts of gravity. All you need to do at that point is harness the energy from the tiny, fleeting sun to heat water and use the resulting steam to turn a few turbines. Yeah, yeah, it's clearly not so easy. Still 60 years of work has proven magnetically confined fusion to be durn near impossible. That's why I'd consider doubling down on the ICF folks, while taking my chips off the magnetic fusion hand.

### 1NC Iran Adventurism/Aggression

#### Iran will not be aggressive – they will back down from direct confrontation.

**Savyon**, 7/4/**2011** (Ayelet – director of the Iranian Media Project at the Middle East Media Research Institute, Iran’s Defeat in Bahrain, p. http://www.memri.org/report/en/0/0/0/0/0/0/5424.htm)

Despite its image as a looming superpower, which revolutionary Iran has sought for years to cultivate, its actual policy reveals a deep recognition of its weakness as a representative of the Shi'ites, who constitute a 10% minority in a Sunni Muslim region. Historically persecuted over centuries, the Shi'ites developed various means of survival, including taqiya – the Shi'ite principle of caution, as expressed in willingness to hide one's Shi'ite affiliation in order to survive under a hostile Sunni rule – and passivity, reflected in the use of diplomacy alongside indirect intimidation, terrorism, etc. The ideological change pioneered by the founder of the Islamic Revolution in Iran, Ayatollah Ruhollah Khomeini – who transformed the passive perception characteristic of the of the Shi'a (which was based on the legend of the martyrdom of Hussein at the Battle of Karbala) into an active perception of martyrdom (shahada)[26] – is not being carried out by Iran. Tehran is refraining from sending Iranian nationals to carry out martyrdom operations, despite its years-long glorification of this principle. It is also not sending Iranians to Gaza, either on aid missions or to carry out suicide attacks – and this despite the fact that regime-sponsored organizations are recruiting volunteers for such efforts. Moreover, it appears that the Shi'ite regime in Iran is utilizing the legend of Hussein's martyrdom solely for propaganda purposes, in order to glorify its own might and intimidate the Sunni and Western world. Such intimidation is in keeping with Shi'ite tradition, as a way to conceal Tehran's unwillingness to take overt military action against external challenges. Conclusion Tehran's defeat in the Bahrain crisis reflects characteristic Shi'ite restraint, stemming from recognition of its own weakness in the face of the vast Sunni majority. The decade during which Iran successfully expanded its strength and power exponentially via threats and creating an image of superpower military strength has collapsed in the Bahrain crisis; Iran is now revealed as a paper tiger that will refrain from any violent conflict. When it came to the crunch, it became clear that the most that Iran could do was threaten to use terrorism or to subvert the Shi'ite citizens of other countries – in keeping with customary Shi'ite behavior – and these threats were not even implemented. It can be assumed that the Sunni camp, headed by Saudi Arabia, is fully aware of the political and military significance of Iran's weakness and its unwillingness to initiate face-to-face conflict. This will have ramifications on both the regional and the global levels.

#### Iran’s guiding principles is defined by regime survival and deterrence.

**Eisenstadt**, August **2011** (Michael - director of the Military & Security Studies Program at the Washington Institute for Near East Policy, The Strategic Culture of the Islamic Republic of Iran, MES Monographs, No. 1, p. 3)

In establishing this principle, Khomeini formalized the supremacy of raison d’etat over the tenets of Islam

as the precept guiding Iranian decision-making. This principle guides decision making at the highest levels of the regime, as well as the actions of the regime’s foot-soldiers.6 The assumption underpinning this precept is that the regime’s brand of revolutionary Islam will not survive unless the IRI survives. Preserving the Islamic Republic thus becomes the ultimate religious value, and it becomes permissible to engage in torture and murder, and to violate the tenets of Islam, in order to preserve the regime. Paradoxically, then, policy in the IRI is based on the secular principle of raison d’etat, rather than the dictates of Shiite Islam. One can say, in effect, that the IRI is a secular theocracy. Similarly, despite the frequent resort to religious allusions and imagery in speeches and interviews, Iranian officials often employ the language of deterrence theory as spoken and understood in the West. Thus, shortly after the first test launch of the Shihab-3 missile in July 1998, Defense Minister Ali Shamkhani explained that to bolster Iran’s deterrent capability we have prepared ourselves to absorb the first strike so that it inflicts the least damage on us. We have, however, prepared a second strike which can decisively avenge the first one while preventing a third strike against us.7

### North Korea

#### No war – self interest proves – they would get rocked

McClatchy 10[MCCLATCHY WASHINGTON BUREAU | BY WARREN P. STROBEL AND JONATHAN S. LANDAY, “Experts say war unlikely North, South Korea” May 25]

Although the isolated, communist North's behavior is notoriously unpredictable and sometimes seems irrational, all-out war between it and the democratic, capitalist South still seems unlikely, analysts said, given the stakes. Nevertheless, tensions on the Korean peninsula, where some 28,500 U.S. troops provide a tripwire for U.S. military intervention if the North attacks, are likely to rise in coming days. North Korea would likely lose any conflict with the South, but not before inflicting massive damage on South Korea's capital, Seoul, a 30-minute drive south of the demilitarized zone that has divided the two Koreas since 1953. U.S. intelligence officials estimate that some 11,000 North Korean artillery pieces are in sheltered positions within range of Seoul and probably could destroy much of the city before they could be knocked out. "The tensions certainly have increased," but there is no sign that North Korea is mobilizing its 1.2 million-strong military, said a U.S. defense official, who requested anonymity in order to speak more freely. "They have masses (of troops) down on the DMZ (demilitarized zone), but they do a normal shift or rotation," he said. South Korean officials said they were bracing for fresh provocations from the North, especially at sea. On Monday, South Korean President Lee Myung-bak blamed North Korea for the March 26 sinking of the corvette Cheonan, which killed 46 of its crew, and said he was curbing trade with North Korea and banning its ships from transiting South Korean waters. "That could get sort of ugly if (North Korean vessels) don't stop, and chances are they won't," said Art Brown, formerly the top U.S. intelligence analyst for East Asia. "It's unlikely they will do nothing. I tend to think they're not going to try Korean War, version two." Still, Brown and other former top U.S. officials said that **serious clashes between the Koreas during the past 57 years haven't led to warfare -- and sometimes have provided opportunities for rapprochement.**

#### NO evidence says they will use thos missiles

### 1NC Environmental Degradation

#### -- 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.

#### -- Long time-frame

Kay 1 (Jane, “Study Takes Historical Peek at Plight of Ocean Ecosystems”, San Francisco Chronicle, 7-26, Lexis)

The collapse of ecosystems often occur over a long period. In one example, when Aleut hunters killed the Alaskan sea otter about 2,500 years ago, the population of their natural prey, the sea urchin, grew larger than its normal size. In turn, the urchins grazed down the kelp forests, important habitat for a whole host of ocean life. Then, when fur traders in the 1800s hunted the otters and sea cows almost to extinction, the kelp forests disappeared and didn't start to regenerate until the federal government protected the sea otters in the 20th century. In California, the diversity of spiny lobsters, sheephead fish and abalone kept down the urchin numbers. At present in Alaska, the kelp beds are declining again in areas where killer whales are preying on sea otters. Biologists think the killer whales switched to otters for food because there are fewer seals and sea lions to eat.

### 2NC Environment – Resilient

#### No brink to environmental collapse

Lomborg 12 -- director of the Copenhagen Consensus Center and author of Smart Solutions to Climate Change (Bjorn, July/August, "Environmental Alarmism, Then and Now," http://www.foreignaffairs.com/articles/137681/bjorn-lomborg/environmental-alarmism-then-and-now?page=show)

As for its pollution predictions, The Limits to Growth was simultaneously scary and vague. Pollution's increase was supposed to trigger a global collapse if the decrease of food or resources didn't do so first, but how exactly pollution was defined was left unclear. Individual pollutants, such as DDT, lead, mercury, and pesticides, were mentioned, but how those could kill any significant number of people was unspecified, making it a bit tricky to test the prediction. Air pollution might be considered a good proxy for overall pollution, since it was the biggest environmental killer in the twentieth century and since the Environmental Protection Agency estimates that its regulation produces 86-96 percent of all the social benefits from environmental regulation more generally. In the developing world, outdoor air pollution is indeed rising and killing more people, currently perhaps over 650,000 per year. Indoor air pollution (from using dirty fuels for cooking and heating) kills even more, almost two million per year (although that number has been decreasing slightly).

#### -- 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.

### Solvency – Funding

#### CP results in the plan --- ignition builds political support for domestic programs.

**khijani and Zerriffi**, **2003** (Arjun - Ph.D, and Hisham, Dangerous thermonuclear quest, Report for Institute for Energy and Environmental Research, Orig. July 1998, Edited 2003, p. http://www.ieer.org/reports/fusion/dtq.pdf)

In the long term, facilities such as the National Ignition Facility and MTF facilities pose even greater threats to both the CTBT and the disarmament process. As discussed above, if ignition is demonstrated in the laboratory, the weapons labs and the DOE would likely exert considerable pressure to continue investigations and to engage in preliminary design activities for a new generation of nuclear weapons (even if it is just to keep the designers interested and occupied). Ignition would also **boost political support and make large-scale funding of such activities more likely**. Even without the construction of actual weapons, these activities could put the CTBT in serious jeopardy from forces both internal and external to the United States. Internally, those same pressures, which could lead to the resumption of testing of current generation weapons, could also lead to the testing of new weapons (to replace older, less safe or less reliable weapons). Externally, the knowledge that the United States or other weapons states were engaging in new fusion weapons design activities could lead other states to view this as a reversal of their treaty commitments. Comparable pressures to develop pure fusion weapons would be likely to mount in several countries. This would have severe negative repercussions for both non-proliferation and complete nuclear disarmament. The time to stop this dangerous thermonuclear quest for explosive ignition is now, before its scientific feasibility is established.

#### Turns the case --- proof of technological progress is the only way to sustain fusion funding. Plan gets rolled back.

**Gibson**, **2007** (Lauren Kate - Elliot School of International Affairs at George Washington University, Developing fusion as an energy source, p. 15-16)

There are several policy challenges that stand in the way of achieving the ultimate goal of commercially run fusion power plants. First and foremost is inadequate funding. Fusion research has suffered from the ebbs of flows of public and political opinion that affect its funding level, especially in the United States. All countries must consider how international collaboration now is affecting their future stance in the market. This is assuming, of course, that there will be a market. Technology transfer is yet another political concern. At some point commercial entities need to take over to make the public good of fusion generated electricity available and thus validate the massive investments that several governments have made. Policy makers must act to address these three major policy challenges. Fusion is now at a critical point where funding is increasingly necessary. As the machines that will take us past our current modest energy gain to a high energy gain are being constructed, this sector is being transformed from basic science with a vague end goal into applied science with the end of a demonstration prototype. The predicted level of funding necessary for the United States to create their DEMO plant, the demonstration prototype that is intended to persuade industry to take over the reins, is $24 billion 2002 dollars. While it is highly unlikely that all funding would be cut off, it is critical that funding levels remain constant so that the research can be productive. fusion stands at a critical point. . . **The decisions that have to be taken will determine if fusion is to progress as an energy technology** or to take a slower course as a basic scientific research program. For fusion to pass from the research stage into reactor development undoubtedly requires a **substantial increase** in funding and this will certainly not become available without strong pressure from within societies.33 In the past, the level of funding has fluctuated in the United States. When energy independence or availability is an acute political issue, then fusion becomes **significantly funded**. When it is not, however, funding falls and the timeline for completion stretches further into the future.

### Solvency – Fusion Technology

#### Ignition experiments are critical to fusion technology

**Perlman**, 1/29/**2010** (David - Chronicle science editor, Focusing 192 lasers on one little target, San Francisco Chronicle, p. http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/01/29/MN5K1BOF4V.DTL&tsp=1)

The National Ignition Facility is a 10-story building that was dedicated in May on the heavily guarded and highly classified Livermore site. But for many decades, Livermore scientists foresaw the need for increasingly **powerful lasers to reach ignition**. Lasers called Janus, Cyclops, Argus and the 20-beam laser named Shiva were used to conduct crucial experiments that led to the 10-year development of the laser array. Thermonuclear reactions The new laser array will be used to **trigger thermonuclear reactions mimicking in miniature the** deadly **energy of thermonuclear weapons**, and those efforts are the principal aim of the project. It is largely funded by the National Nuclear Security Agency, which oversees America's arsenal of nuclear weapons and seeks to maintain their safety and reliability as the weapons age. But many scientists foresee that experiments like the ones at the ignition facility could **lead the way to the eventual construction of large-scale fusion reactor power plants** capable of generating countless megawatts of electricity using the hydrogen isotopes from ocean water as **endless fuel**. B. Grant Logan, director of a separate and unclassified attempt to achieve ignition based at the Lawrence Berkeley National Laboratory, said the new report is highly encouraging. The report, he said in an e-mail, shows "remarkable progress toward the scientific demonstration of fusion ignition and energy gain in the laboratory for the **first time in the world**. **At the rate they are going**," he said, "it does appear to me that **fusion ignition will be demonstrated soon**."