### 1NC T

#### Government purchases may be an incentive but they aren’t FINANCIAL incentives.

Sam Schoofs, Calvin College, Washington Internships for Students of Engineering Institute of Electrical and Electronic Engineers 8-6-2004, “A federal Renewable Portfolio Standard: Policy Analysis and Proposal,” http://www.wise-intern.org/journal/2004/WISE2004-SamSchoofsFinalPaper.pdf,

D. Renewable Energy Policy Overview There are two main categories of renewable energy policies. The first category gives some financial incentives to encourage renewable energy that includes tax incentives, grants, loans, rebates, and production incentives [13]. Tax incentives cover personal, sales, property, and corporate taxes and they help to reduce the investment costs and to reward investors for their support of renewable energy sources [12], [13]. As an example, 24 states currently have some form of grant program in place that ranges from as small as $500 up to $1,000,000 [13]. The second category of renewable energy policies is called rules and regulations, which mandate a certain action from an obligated entity. Included within this category are renewable portfolio standards, equipment certification, solar/wind access laws, and green power purchasing/aggregation polices [13]. As an example, equipment certification allows the states to regulate the performance criteria that equipment is required to meet in order to be eligible for financial incentives [12]. Seven states currently have equipment certification programs in place [13].

#### Vote Neg

#### Limits – government procurement allows tons of new affs dealing with the military, government research facilities and almost any government service, this explodes the topic making deep debate and predictable ground impossible.

#### Ground – most topic arguments assume a private-sector based increase in energy production like investment tradeoffs, environmental DAs or condition the company CPs, government procurement dodges all these.

#### Prefer competing interpretations – reasonability guarantees judge intervention and is impossible to determine which makes being neg impossible

### 1NC SPIDERS CP

#### The United States Federal Government should substantially increase investment in smart microgrid technology for installations the plan applies to via a diverse portfolio tailored to individual installation circumstances, including non-nuclear renewable energies for on-site generation, increased backup generation capacity, improvements in energy efficiency and energy storage, intelligent local energy management, and accelerated implementation of the SPIDERS project.

#### Smart microgrids solve DOD grid vulnerability – the combination of the CP’s mechanisms resolves the problems with each individual component

SERDP 12 – the Strategic Environmental Research and Development Program, DoD’s environmental science and technology program, executed in partnership with DOE and EPA, 7/10/12, “DoD Study Finds Microgrids Offer Improved Energy Security for DoD Installations,” <http://www.serdp.org/News-and-Events/News-Announcements/Program-News/DoD-study-finds-microgrids-offer-improved-energy-security-for-DoD-installations>

Advanced microgrids offer a cost-effective solution to military installations' growing vulnerability to the fragile electric grid, according to a study released today by DoD’s Office of Installations and Environment. The study performed by MIT Lincoln Laboratory looked at different microgrid architectures and characteristics and compared their relative cost-effectiveness. The report provides insight into increasing energy security and reducing energy costs through the incorporation of renewable energy resources into microgrids, as well as new market opportunities for DoD in the area of demand response and ancillary services. The study highlights the extent of ongoing microgrid work across DoD. It identified 44 installations that either had existing microgrids, planned installation of microgrids, or conducted microgrid studies or demonstrations at their facilities. The authors interviewed more than 75 people from the military Services, the Office of the Secretary of Defense, and the Department of Energy. The analysis categorized the ongoing microgrid efforts based on several key attributes including size, maturity, the inclusion of renewable resources, and the ability to operate in a grid-tied manner. The analysis confirms the value of microgrids to DoD. The combination of on-site energy generation and storage, together with the microgrid’s ability to manage local energy supply and demand, allow installations to shed non-essential loads and maintain mission-critical loads if the electric grid is disrupted. The report illustrates the largely untapped potential of moving to smarter, next generation microgrids that would accommodate far greater penetration of renewable energy sources, as well as tighter integration with the electrical grid. If solar resources that are increasingly being installed on DoD installations were available during islanded operation of a microgrid, they could significantly extend the islanding time. Moreover, a microgrid that could operate when tied to the grid would offer new opportunities for the DoD to generate cost savings by using backup generation assets during normal operation and generate financial revenue by using advanced ancillary services. One important finding is that there will be no “one size fits all” solution. The location of a military installation influences the options available for energy generation sources, the options available for interaction with the local utility, the characteristics of the local electricity market, and the regulatory environment. The most effective microgrids will be those that take into account the needs of the local commercial electric grid and are configured so that they can earn value helping to meet those needs.

**1NC ARPA-E CP \*\*\***

**The Advanced Research Projects Agency for Energy should research and develop small modular reactor technology for Department of Defense demonstration.**

**ARPA-E can spur energy tech innovation for military application—leads to DoD adoption**

Steven **Hayward**, AEI Resident Scholar, Mark Muro, Brookings Institute Metropolitan Policy Program, Ted Nordhaus and Michael Shellenberger, Breakthrough institute cofounders, October **2010**, Post-Partisan Power, thebreakthrough.org/blog/Post-Partisan Power.pdf

In addition to fostering stronger linkages between government-funded research centers and private sector investors, entrepreneurs, and customers, the **DOD can work to more closely connect research efforts and the growing energy innovation needs of the U.S. military. This close relationship between research efforts and DOD procurement and technology needs was central to the successful history of the Defense Advanced Research Projects Agency (DARPA**), famous for inventing the Internet, GPS, and countless other technologies that have both improved the fighting capabilities of the U.S. military and launched many spin-off technologies American consumers and businesses now take for granted. DARPA program managers had a keen awareness of the technologies and innovations that could improve military capabilities and funded breakthrough innovations aligned with those needs. Once innovations matured into potentially useful technologies, the DOD was there as an early customer for these products, allowing entrepreneurial firms to secure market demand, scale-up production, and continue to improve their products. Congress made the right move in creating and funding an Advanced Research Projects Agency for Energy (**ARPA-E) program modeled after the historic success of DARPA. ARPA-E resides within the DOE, however, which is not set up to be a major user of energy technologies. By contrast, DOD has both the opportunity and the urgent need to use many of these technologies.64 The DOD can and should play a greater role in administering ARPA-E and making sure that breakthrough energy discoveries become real- world technologies that can strengthen American energy security, enhance the capabilities of the U.S. military, and spin off to broader commercial use.** Fiscal year 2011 funding requests for the ARPA-E program are currently a modest $300 million, just one- tenth the annual budget for DARPA research.65 Truly bringing the DARPA model to the energy sector would imply scaling ARPA-E up to match DARPA. Given the multi-trillion dollar scale of the energy industry, only funding levels on this order of magnitude will have a significant impact on the pace of energy innovation and entrepreneurship. We recommend scaling up funding for ARPA-E over the next five years to $1.5 billion annually, with a significant portion of this funding dedicated to dual-use energy technology innovations with the potential to enhance energy security and strengthen the U.S. military. **DOD and DOE should extend and expand their current Memorandum of Understanding, established in July 2010,66 and launch an active partnership between ARPA-E and DOD to determine and select nascent dual-use breakthrough energy innovations for funding through the ARPA-E program and potential adoption and procurement by the DOD.**

### 1NC Politics

#### Top of the docket, Obama’s pushing and it will pass

Daniel Halper, online editor, 1-2-2013, “Obama to 'Quickly' Go for Immigration Reform and Gun Control,” Weekly Standard, http://www.weeklystandard.com/blogs/obama-quickly-go-immigration-reform-and-gun-control\_693547.html

President Barack Obama will go for immigration reform and gun control this month, the White House tells the left-leaning Huffington Post. Obama's actions will reportedly be done "quickly." "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," reports the Huffington Post. "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 outlet claims that it is "unclear what type of immigration policies the White House plans to push in January." No details on what sort of gun control legislation the White House will seek were offered in the article. As Politico reported last month, a "Gang of Eight," a conference of 8 senators from both parties, "has begun to meet to discuss immigration reform." But it is not at all clear what progress this group has made and what immigration laws it might propose. The Huffington Post quotes a Democratic aide who believes "Good news for immigration advocates may have come Tuesday night, when Boehner broke the so-called 'Hastert Rule' and allowed the fiscal cliff bill to come for a vote without support from a majority of his Republican conference. Given opposition to immigration reform by many Tea Party Republicans, the proof that Boehner is willing to bypass them on major legislation is a good sign."

#### PC key

Tom Kludt, staff writer, 1-3-2012, “Report: Obama To Make Push For Immigration Reform This Month,” TPM, http://livewire.talkingpointsmemo.com/entry/report-obama-to-make-push-for-immigration-reform

President Barack Obama is prepared to use his political capital to pursue immigration reform this month, according to a report published Wednesday in the Huffington Post. The report cited an anonymous official in the Obama administration, who suggested that the president is unlikely to be deterred by the protracted fiscal cliff debate that will be revisited in the coming months. As such, the administration will reportedly move quickly on both immigration reform and gun control. The report also quoted an unnamed Senate Democratic aide, who gauged the likelihood of immigration reform to pass Congress. Citing the fiscal cliff deal that passed the House of Represenatives this week with a combination of Republican and Democratic votes, the aide expressed confidence that House Speaker John Boehner (R-OH) will be able to overcome expected opposition from the conservative wing of his caucus. "He already did it with this fiscal issue, so I would not be surprised if when it came down to it he puts up a bill that he just allows to go through with a combination of Democratic and Republican votes, without worrying about a majority of the majority," the aide said.

**Nuclear get dragged into broader debates over energy spending which tanks Obama’s PC**

Gabriel **Nelson**, staff writer, **9-24**-2012, “DOE funding for small reactors languishes as parties clash on debt,” E&E Publishing, http://www.eenews.net/public/Greenwire/2012/09/24/3

It's not just wind and solar projects that are waiting for federal help as **Congress duels over** the importance of **putting taxpayer dollars on the line for** cutting-edge energy projects. Some of the nation's largest **nuclear** power companies are anxious to hear whether they will get a share of a $452 million pot from the Department of Energy for a new breed of reactors that the industry has labeled as a way to lessen the safety risks and construction costs of new nuclear power plants. The grant program for these "small modular reactors," which was announced in January, would mark the official start of a major U.S. foray into the technology even as rising construction costs -- especially when compared to natural-gas-burning plants -- cause many power companies to shy away from nuclear plants. DOE received four bids before the May 21 deadline from veteran reactor designers Westinghouse Electric Co. and Babcock & Wilcox Co., as well as relative newcomers Holtec International Inc. and NuScale Power LLC. Now the summer has ended with no announcement from DOE, even though the agency said it would name the winners two months ago. As the self-imposed deadline passed, companies started hearing murmurs that a decision could come in September, or perhaps at the end of the year. To observers within the industry, it seems that election-year calculations may have sidelined the contest. "The rumors are a'flying," said Paul Genoa, director of policy development at the Nuclear Energy Institute, in an interview last week. "All we can imagine is that **this is now caught up in politics**, and the campaign has to decide whether these things are good for them to announce, and how." Small modular reactors do not seem to be lacking in political support. **The nuclear** lobby has historically courted both Democrats and Republicans and **still sees itself as being in a strong position** with key appropriators on both sides of the aisle. Likewise, top energy officials in the Obama administration have hailed the promise of the new reactors, and they haven't shown any signs of a change of heart. DOE spokeswoman Jen Stutsman said last week that the department is still reviewing applications, but she did not say when a decision will be made. "This is an important multiyear research and development effort, and we want to make sure we take the time during the review process to get the decision right," she wrote in an email. **That the grants haven't been given out** during a taut campaign season, **even as** President **Obama announces agency actions ranging from trade cases to** creating **new national monuments** to make the case for his re-election, **may be a sign that** the **reactors are ensnared in a broader feud over energy spending**. Grant recipients would develop reactor designs with an eye toward eventually turning those into pilot projects -- and the loan guarantees that these first-of-a-kind nuclear plants are using today to get financing would be blocked under the "No More Solyndras" bill that passed the House last week (Greenwire, Sept. 14). Congress has given the grant program $67 million for fiscal 2012, shy of the amount that would be needed annually to reach full funding. If the "sequester" kicks in at year's end and slashes DOE funding or the balance of power changes in Washington, the amount of money available could dwindle yet again. Even the staunchest **supporters** of the federal nuclear program **are acknowledging it is a tough time to promise a** $452 million **check**. Former Sen. Pete Domenici, a New Mexico Republican who pushed for new reactors as chairman of both the Senate Energy and Natural Resources Committee and the Energy and Water Appropriations Subcommittee, said during a brief interview Tuesday that well-designed loan guarantees won't cost too much because they get repaid over time. The cost could be borne by a "tiny little tax" on the nuclear industry, he said. But when it comes to straight-up spending, like the grants that would support getting these cutting-edge reactors ready for their first demonstrations, the solution may not be so clear. **While some Republicans remain staunch supporters of funding for the nuclear power industry, there are others who label the government subsidies as a waste of taxpayer dollars.**

#### Key to the economy

Peter Crabb, staff writer, 12-18-2012, “The Economy by Peter Crabb: Immigration reform should boost the free trade of labor,” Idaho Statesman, http://www.idahostatesman.com/2012/12/18/2384708/immigration-reform-should-boost.html

Political issues like immigration have economic principles at their core. With all the debate about how to avoid a recession next year, it seems policymakers could find some common ground on immigration and, in the process, help fix other economic problems ahead of us. Economic theory shows, and historical evidence supports, the contention that the key to economic growth is higher productivity. Higher worker productivity lowers product costs and increases output, raising our standard of living. By training and keeping students in the STEM fields, we can boost the nation’s overall productivity. Advances in science, engineering and math lead to better tools and more technology for workers. With these tools and skills, workers produce more with less. STEM immigrants will help us find these technological advancements. Unfortunately, immigration and productivity in the U.S. are both stagnant. According to the Department of Homeland Security, 1,062,040 people obtained U.S. permanent-resident status in 2011, but only 139,339 for employment reasons. Furthermore, as a percentage of our labor force, the number of legal immigrants has declined over the last decade. Some fear reforms to immigration laws because illegal immigration is itself a problem. But even that is down. The Census Bureau reported this month that there were 11.1 million illegal immigrants in the U.S. in 2011, down from a peak of 12 million in 2007. The Bureau of Labor Statistics reported this month that productivity at nonfarm businesses is currently growing at just 1.7 percent a year. This compares with an average annual rate of about 2.5 percent over the last decade. STEM immigrants can help bring this rate back up. Demographic studies also show we need more immigrants. David Wessel, economics editor of The Wall Street Journal, argues that ambitious immigrants will help lift living standards and bring faster growth. Allowing more working immigrants will do more to repay the massive federal debt than any other economic policy, because a higher GDP growth rate brings in more tax revenue. A low growth rate in the labor force and longer life expectancy for retirees combine to create the massive Social Security problem that has yet to receive the attention it deserves. As long as our economy produces jobs many workers will seek our shores through any means possible.

#### Economic growth is key to avoid global conflict

Earl Tilford, PhD in history from George Washington University and served for thirty-two years as a military officer and analyst with the Air Force and Army, 2008, “Critical Mass: Economic Leadership or Dictatorship,” The Cedartown Standard, Lexis

Could it happen again? Bourgeois democracy requires a vibrant capitalist system. Without it, the role of the individual shrinks as government expands. At the very least, the dimensions of the U.S. government economic intervention will foster a growth in bureaucracy to administer the multi-faceted programs necessary for implementation. Bureaucracies, once established, inevitably become self-serving and self-perpetuating. Will this lead to “socialism” as some conservative economic prognosticators suggest? Perhaps. But so is the possibility of dictatorship. If the American economy collapses, especially in wartime, there remains that possibility. And if that happens the American democratic era may be over. If the world economies collapse, totalitarianism will almost certainly return to Russia, which already is well along that path in any event. Fragile democracies in South America and Eastern Europe could crumble.  A global economic collapse will also increase the chance of global conflict. As economic systems shut down, so will the distribution systems for resources like petroleum and food. It is certainly within the realm of possibility that nations perceiving themselves in peril will, if they have the military capability, use force, just as Japan and Nazi Germany did in the mid-to-late 1930s. Every nation in the world needs access to food and water. Industrial nations—the world powers of North America, Europe, and Asia—need access to energy. When the world economy runs smoothly, reciprocal trade meets these needs. If the world economy collapses, the use of military force becomes a more likely alternative. And given the increasingly rapid rate at which world affairs move; the world could devolve to that point very quickly.

### 1NC Accidents

#### SMRs are coming – deployment before full review leads to accidents

Ucilia Wang, staff writer, 1-20-2012, “Feds To Finance Small Nuclear Reactor Designs,” http://www.forbes.com/sites/uciliawang/2012/01/20/feds-to-finance-small-nuclear-reactor-designs/

The U.S. Department of Energy on Friday announced a plan to support the design of so-called “small modular nuclear reactors” and popularize their use for power generation. The plan is to fund two reactor designs that will become available for licensing and production by 2022. The department is first asking for advice from the power industry on crafting the details of this project, and it hasn’t said how much it would dole out. But whoever wins the contracts to design the reactors will have to pony up money as well. Small reactors are generally about one-third the size of existing nuclear reactors, and a power plant with small reactors promises to be cheaper to build and easier to obtain permits more quickly than a full-size nuclear power plant, proponents say. Utilities should have more flexibility in modifying the size of a power plant with small reactors – if they need more power, then they can add more reactors over time. Nuclear reactors have historically been designed to be 1-gigawatt or more each because such scale helps to drive down the manufacturing and installation costs. Small reactors can be economical, too, advocates say, because they can be shipped more easily and cheaply around the world. “We think (small, modular nuclear) solves a lot of issues in terms of investments and electricity infrastructure,” Chu said at a press conference a year ago. “And it’s a way for the United States to regain its leadership in nuclear.” Several startups and major power equipment makers are working on small modular nuclear reactors. They include TerraPower, which is backed by Bill Gates and recently received funding from Indian conglomerate Reliance Industries. TerraPower also has been talking to the governments of China, India and Russia, basically countries where nuclear power won’t likely receive the kind of intense opposition that you’ll find in the United States, Germany or Japan. Other venture capital-funded startups include NuScale Power and Hyperion Power Generation (see a list from GigaOm). These companies aren’t just working on shrinking the size of the reactors. They also are investigating the use of different fuels and ways to reduce nuclear waste, for example. Following the energy department’s announcement Friday morning, Westinghouse Electric Co. issued a statement to say it intends to apply for the funding. Westinghouse already is in the nuclear reactor design business. It received approval from the Nuclear Regulatory Commission for a large, 1,154-megawatt nuclear reactor called AP1000 last month. The energy department funded part of the project to design AP1000. Just because small nuclear reactors promise many economic and environmental benefits (they don’t produce dirty air like coal or natural gas power plants do) doesn’t mean they can be developed and made more quickly or cheaply, however. Technology companies also will have to prove that their small nuclear reactors can be just as safe if not safer than the conventional, large-scale nuclear reactors today. The Fukushima nuclear power plant disaster in Japan has shown that a misstep in designing and operating a nuclear plant can have a far greater and more devastating impact than a mistake in running other types of power plants. That means nuclear power companies — and the government — will have to do a lot more to prove that nuclear power should remain an important part of the country’s energy mix.

#### The plan speeds SMRs up and causes accidents

Lyman, ‘11

[Dr. Edwin, Senior Scientist -- Union of Concerned Scientists, “AN EXAMINATION OF THE SAFETY AND ECONOMICS OF LIGHT WATER SMALL MODULAR REACTORS: HEARING before a SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS UNITED STATES SENATE ONE HUNDRED TWELFTH CONGRESS FIRST SESSION, SPECIAL HEARING, JULY 14, 2011--WASHINGTON DC,” http://www.gpo.gov/fdsys/pkg/CHRG-112shrg72251/html/CHRG-112shrg72251.htm]

Given there is no apparent capital cost benefit for SMRs, we are concerned that the industry is trying to cut the potential operating maintenance costs by asking the NRC for regulatory relief for a number of requirements. These do include reduced operator staffing for each unit and potentially reducing the number of operators that you need to monitor the safety of each individual unit. They also are interested in reducing emergency planning zone sizes and also adjusting security requirements that may end up with a reduced number of security officers. We think one of the early lessons of Fukushima is that you need to prevent serious accidents with significant margins of safety, so now is not the time to start reducing regulatory requirements for small reactors. Emergency planning zone should be maintained. Security certainly should be maintained, especially in light of potential increased threats following the potential for retaliation of the death of Osama bin Laden, and we believe that the multiple reactor issues will require additional enhancements to regulations for collocated units to make sure that you do not have interactions that can affect the safety of each site because of an accident its neighbors.

#### extinction

Stephen Lendman, Research Associate at the Center for Research on Globalization, 3-13-2011, “Nuclear Meltdown in Japan,” The People’s Voice, http://www.thepeoplesvoice.org/TPV3/Voices.php/2011/03/13/nuclear-meltdown-in-japan

For years, Helen Caldicott warned it's coming. In her 1978 book, "Nuclear Madness," she said: "As a physician, I contend that nuclear technology threatens life on our planet with extinction. If present trends continue, the air we breathe, the food we eat, and the water we drink will soon be contaminated with enough radioactive pollutants to pose a potential health hazard far greater than any plague humanity has ever experienced." More below on the inevitable dangers from commercial nuclear power proliferation, besides added military ones. On March 11, New York Times writer Martin Fackler headlined, "Powerful Quake and Tsunami Devastate Northern Japan," saying: "The 8.9-magnitude earthquake (Japan's strongest ever) set off a devastating tsunami that sent walls of water (six meters high) washing over coastal cities in the north." According to Japan's Meteorological Survey, it was 9.0. The Sendai port city and other areas experienced heavy damage. "Thousands of homes were destroyed, many roads were impassable, trains and buses (stopped) running, and power and cellphones remained down. On Saturday morning, the JR rail company" reported three trains missing. Many passengers are unaccounted for. Striking at 2:46PM Tokyo time, it caused vast destruction, shook city skyscrapers, buckled highways, ignited fires, terrified millions, annihilated areas near Sendai, possibly killed thousands, and caused a nuclear meltdown, its potential catastrophic effects far exceeding quake and tsunami devastation, almost minor by comparison under a worst case scenario. On March 12, Times writer Matthew Wald headlined, "Explosion Seen at Damaged Japan Nuclear Plant," saying: "Japanese officials (ordered evacuations) for people living near two nuclear power plants whose cooling systems broke down," releasing radioactive material, perhaps in far greater amounts than reported. NHK television and Jiji said the 40-year old Fukushima plant's outer structure housing the reactor "appeared to have blown off, which could suggest the containment building had already been breached." Japan's nuclear regulating agency said radioactive levels inside were 1,000 times above normal. Reuters said the 1995 Kobe quake caused $100 billion in damage, up to then the most costly ever natural disaster. This time, from quake and tsunami damage alone, that figure will be dwarfed. Moreover, under a worst case core meltdown, all bets are off as the entire region and beyond will be threatened with permanent contamination, making the most affected areas unsafe to live in. On March 12, Stratfor Global Intelligence issued a "Red Alert: Nuclear Meltdown at Quake-Damaged Japanese Plant," saying: Fukushima Daiichi "nuclear power plant in Okuma, Japan, appears to have caused a reactor meltdown." Stratfor downplayed its seriousness, adding that such an event "does not necessarily mean a nuclear disaster," that already may have happened - the ultimate nightmare short of nuclear winter. According to Stratfor, "(A)s long as the reactor core, which is specifically designed to contain high levels of heat, pressure and radiation, remains intact, the melted fuel can be dealt with. If the (core's) breached but the containment facility built around (it) remains intact, the melted fuel can be....entombed within specialized concrete" as at Chernobyl in 1986. In fact, that disaster killed nearly one million people worldwide from nuclear radiation exposure. In their book titled, "Chernobyl: Consequences of the Catastrophe for People and the Environment," Alexey Yablokov, Vassily Nesterenko and Alexey Nesterenko said: "For the past 23 years, it has been clear that there is a danger greater than nuclear weapons concealed within nuclear power. Emissions from this one reactor exceeded a hundred-fold the radioactive contamination of the bombs dropped on Hiroshima and Nagasaki." "No citizen of any country can be assured that he or she can be protected from radioactive contamination. One nuclear reactor can pollute half the globe. Chernobyl fallout covers the entire Northern Hemisphere." Stratfor explained that if Fukushima's floor cracked, "it is highly likely that the melting fuel will burn through (its) containment system and enter the ground. This has never happened before," at least not reported. If now occurring, "containment goes from being merely dangerous, time consuming and expensive to nearly impossible," making the quake, aftershocks, and tsunamis seem mild by comparison. Potentially, millions of lives will be jeopardized. Japanese officials said Fukushima's reactor container wasn't breached. Stratfor and others said it was, making the potential calamity far worse than reported. Japan's Nuclear and Industrial Safety Agency (NISA) said the explosion at Fukushima's Saiichi No. 1 facility could only have been caused by a core meltdown. In fact, 3 or more reactors are affected or at risk. Events are fluid and developing, but remain very serious. The possibility of an extreme catastrophe can't be discounted. Moreover, independent nuclear safety analyst John Large told Al Jazeera that by venting radioactive steam from the inner reactor to the outer dome, a reaction may have occurred, causing the explosion. "When I look at the size of the explosion," he said, "it is my opinion that there could be a very large leak (because) fuel continues to generate heat." Already, Fukushima way exceeds Three Mile Island that experienced a partial core meltdown in Unit 2. Finally it was brought under control, but coverup and denial concealed full details until much later. According to anti-nuclear activist Harvey Wasserman, Japan's quake fallout may cause nuclear disaster, saying: "This is a very serious situation. If the cooling system fails (apparently it has at two or more plants), the super-heated radioactive fuel rods will melt, and (if so) you could conceivably have an explosion," that, in fact, occurred. As a result, massive radiation releases may follow, impacting the entire region. "It could be, literally, an apocalyptic event. The reactor could blow." If so, Russia, China, Korea and most parts of Western Asia will be affected. Many thousands will die, potentially millions under a worse case scenario, including far outside East Asia. Moreover, at least five reactors are at risk. Already, a 20-mile wide radius was evacuated. What happened in Japan can occur anywhere. Yet Obama's proposed budget includes $36 billion for new reactors, a shocking disregard for global safety. Calling Fukushima an "apocalyptic event," Wasserman said "(t)hese nuclear plants have to be shut," let alone budget billions for new ones. It's unthinkable, he said. If a similar disaster struck California, nuclear fallout would affect all America, Canada, Mexico, Central America, and parts of South America. Nuclear Power: A Technology from Hell Nuclear expert Helen Caldicott agrees, telling this writer by phone that a potential regional catastrophe is unfolding. Over 30 years ago, she warned of its inevitability. Her 2006 book titled, "Nuclear Power is Not the Answer" explained that contrary to government and industry propaganda, even during normal operations, nuclear power generation causes significant discharges of greenhouse gas emissions, as well as hundreds of thousands of curies of deadly radioactive gases and other radioactive elements into the environment every year. Moreover, nuclear plants are atom bomb factories. A 1000 megawatt reactor produces 500 pounds of plutonium annually. Only 10 are needed for a bomb able to devastate a large city, besides causing permanent radiation contamination.

### 1NC IAEA DA

#### IAEA resources are stable now but fragile

Yukiya Amano, director-general of the IAEA, 12-6-2012, “A Conversation with IAEA Director-General Yukiya Amano,” CFR, http://www.cfr.org/energyenvironment/conversation-iaea-director-general-yukiya-amano/p29628

Q: Thanks. Thank you. Steven Dolley with Platts. Director General, has IAEA received pledges of sufficient funding to implement fully the post-Fukushima action plan? And if not, do you expect that additional pledges of funding will be received at the ministerial? If there's not going to be sufficient funding, what aspects of the plan might need to be slowed or curtailed? MR. AMANO: The current priority for us related to safety is the implementation of the additional action plan for the nuclear safety. And it requires resources. One is financial resource, and another is human resource. So far a number of countries generously made their nationals available as cost-free experts, and Japan made a financial contribution and made some experts available for us. There are areas where we need, frankly, that we have to send peer review missions. Peer review missions means we need people and some fund to send people. We need to review the safety standards – again, we need the fund. And we are convening international expert to our meetings, and that requires some fund. So our – so far we have been financing these activities by the fund mainly contributed by Japan. But that fund is running out. On top of that, we cannot use the Japanese fund for – on the activities like making a report on Japan's accident, using Japan's money to make a report on Japan is a conflict of interest, and I don't want to do. And Japanese government doesn't want to do either. So we need funds. In addition to that, another scarce resource is human resource. When we send missions, we need very good international experts. And again, this is a very scarce resource. Good experts are in demand everywhere nowadays. We need to compete with other companies and other sectors. United States has been generously made their experts available for us, as well as some other countries. And we keep counting on them, and we keep on appealing other countries which are in a position to do so to provide us more extrabudgetary contribution to support the activities, to enhance safety after Fukushima Daiichi accident.

#### Plan causes massive IAEA overstretch—-only SMRs link— causes

Dr. Edwin Lyman 11, Senior Scientist, Global Security Program, Union of Concerned Scientists, July 14, 2011, Testimony Before the Energy and Water Development Subcommittee, Committee on Appropriations, U.S. Senate, “An Examination of the Safety and Economics of Light Water Small Modular Reactors,” <http://www.ucsusa.org/assets/documents/nuclear_power/lyman-appropriations-subcom-7-14-11.pdf>

The distributed deployment of small reactors would also put great strains on existing licensing and inspection resources. Nuclear reactors are qualitatively different from other types of generating facilities, not least because they require a much more extensive safety and security inspection regime. Similarly, deployment of individual small reactors at widely distributed and remote sites around the world would strain the resources of the International Atomic Energy Agency (IAEA) and its ability to adequately safeguard reactors to guard against proliferation, since IAEA inspectors would need to visit many more locations per installed megawatt around the world. Maintaining robust oversight over vast networks of SMRs around the world would be difficult, if feasible at all.

#### Prolif incentivizes aggression – that causes regional instability and increased conventional wars which escalate to global nuclear war

Matthew Kroenig, Professor of Government at Georgetown and Fellow at CFR specializing in Nuclear Security, 5-26-2012, “The History of Proliferation Optimism: Does It Have A Future?” Nonproliferation Policy Education Center, http://www.npolicy.org/article.php?aid=1182andrtid=2

Regional instability: The spread of nuclear weapons also emboldens nuclear powers contributing to regional instability. States that lack nuclear weapons need to fear direct military attack from other states, but states with nuclear weapons can be confident that they can deter an intentional military attack, giving them an incentive to be more aggressive in the conduct of their foreign policy. In this way, nuclear weapons provide a shield under which states can feel free to engage in lower-level aggression. Indeed, international relations theories about the “stability-instability paradox” maintain that stability at the nuclear level contributes to conventional instability.[64] Historically, we have seen that the spread of nuclear weapons has emboldened their possessors and contributed to regional instability. Recent scholarly analyses have demonstrated that, after controlling for other relevant factors, nuclear-weapon states are more likely to engage in conflict than nonnuclear-weapon states and that this aggressiveness is more pronounced in new nuclear states that have less experience with nuclear diplomacy.[65] Similarly, research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, which encouraged them to initiate militarized disputes against India.[66] Currently, Iran restrains its foreign policy because it fears a major military retaliation from the United States or Israel, but with nuclear weapons it could feel free to push harder. A nuclear-armed Iran would likely step up support to terrorist and proxy groups and engage in more aggressive coercive diplomacy. With a nuclear-armed Iran increasingly throwing its weight around in the region, we could witness an even more crisis prone Middle East. And in a poly-nuclear Middle East with Israel, Iran, and, in the future, possibly other states, armed with nuclear weapons, any one of those crises could result in a catastrophic nuclear exchange. Nuclear proliferation can also lead to regional instability due to preventive strikes against nuclear programs. States often conduct preventive military strikes to prevent adversaries from acquiring nuclear weapons. Historically, the United States attacked German nuclear facilities during World War II, Israel bombed a nuclear reactor in Iraq in 1981, Iraq bombed Iran’s Bushehr reactors in the Iran-Iraq War in the 1980s and Iran returned the favor against an Iraqi nuclear plant, a U.S.-led international coalition destroyed Iraq’s nuclear infrastructure in the first Gulf War in 1991, and Israel bombed a Syrian nuclear reactor in 2007. These strikes have not led to extensive conflagrations in the past, but we might not be so lucky in the future. At the time of writing in 2012, the United States and Israel were polishing military plans to attack Iran’s nuclear program and some experts maintain that such a strike could very well lead to a wider war in the Middle East.

#### Overstretch means IAEA can’t contain meltdowns

Ivonnne Marschall, energy analyst for Monsters and Critics, 6-22-2007, "IAEA Warns Cash Shortage Will Affect Nuclear Security Work" <http://news.monstersandcritics.com/europe/features/article_1321201.php/IAEA_warns_cash_shortage_will_affect_nuclear_security_work>

Vienna - The International Atomic Energy Agency (IAEA) will not be in a position to do its job if it does not receive a substantial budget increase, IAEA Director General Mohamed ElBaradei warned. In a statement to the UN nuclear watchdog's 35-nation board on 15 June, obtained by Deutsche Presse-Agentur dpa, ElBaradei said the failure to reach agreement on the agency's budget did not 'augur well for the agency, in terms of either our function or our credibility.' Unusually candidly the IAEA chief told the delegates that the agency would fail to properly react to a nuclear accident like Chernobyl or might miss a clandestine nuclear weapons programme if its funding is not significantly increased. 'But my colleagues and I cannot sit here and tell you that the agency is able to fulfill its functions if in fact it cannot.' 'The safeguards function is being eroded over time. Today we cannot consistently do environmental sampling analysis ourselves due in part to the unreliability of an instrument that is 28-years-old.' The situation with regards to nuclear safety was equally dire, he added. If a Chernobyl-type accident occurred, the IAEA 's incident and emergency centre would be hard pressed to carry out its functions. ElBaradei's words come at a time when North Korea is slowly moving ahead with implementing a deal struck in February to dismantle its nuclear programme and the international community is trying to find a solution for Iran's refusal to heed UN calls to stop enriching uranium. ElBaradei was expected to meet with Iranian chief nuclear negotiator Ali Larijani on Friday in Vienna. As an increasing number of countries moves towards nuclear power, the IAEA's scope of work both in promoting nuclear energy as well as safeguarding nuclear facilities is likely to expand even further.

#### Lendman

# Case

## Solvency

### 1NC No Solvency – Bases

#### SMR basing fails – waste, can’t operate in crises, costs, and public opposition – their evidence is all hype

Matthew Baker, adjunct junior fellow at the American Security Project, 6-22-2012, “Do Small Modular Reactors Present a Serious Option for the Military’s Energy Needs?” American Security Project, http://americansecurityproject.org/blog/2012/do-small-modular-reactors-present-a-serious-option-for-the-militarys-energy-needs/

Unfortunately all the hype surrounding SMRs seems to have made the proponents of SMR technology oblivious to some of its huge flaws. Firstly like large reactors, one of the biggest qualms that the public has to nuclear is problems associated with nuclear waste. A more decentralized production of nuclear waste inevitably resulting from an increase in SMRs production was not even discussed. The danger of transporting gas into some military bases in the Middle East is already extremely volatile; dangers of an attack on the transit of nuclear waste would be devastating. Secondly, SMRs pose many of the same problems that regular nuclear facilities face, sometimes to a larger degree. Because SMRs are smaller than conventional reactors and can be installed underground, they can be more difficult to access should an emergency occur. There are also reports that because the upfront costs of nuclear reactors go up as surface area per kilowatt of capacity decreases, SMRs will in fact be more expensive than conventional reactors. Thirdly, some supporters of SMR technology seem to have a skewed opinion of public perception toward nuclear energy. Commissioner of the U.S. Nuclear Regulatory Commission, William C. Ostendorff, didn’t seem to think that the recent Fukushima disaster would have any impact on the development on SMRs. Opinion polls suggest Americans are more likely to think that the costs of nuclear outweigh its benefits since the Fukushima disaster. For SMRs to be the philosopher’s stone of the military’s energy needs the public needs to be on board. The DESC’s briefing did illustrate the hype that the nuclear community has surrounding SMRs, highlighting some pressing issues surrounding the military’s energy vulnerability. But proponents of SMRs need to be more realistic about the flaws associated with SMRs and realize that the negative impacts of nuclear technology are more costly than its benefits.

### 1NC Power Purchasing Fails

#### DoD fails – exacerbates market barriers

Jeffrey Marqusee, executive director of the Strategic Environmental Research and Development Program, March 2012, “Military Installations and Energy Technology Innovations,” Energy Innovation at the Department of Defense

Decisions on implementing these technologies will be made in a distributed sense and involve tens of thousands of individual decision makers if they are ever to reach large-scale deployment. These are the energy technologies that DoD installations will be buying, either directly through appropriated funds or in partnership with third-party financing through mechanisms such as Energy Saving Performance Contracts (ESPCs) or Power Purchase Agreements (PPAs). In the DOE taxonomy shown above, these distributed installation energy technologies cover the demand space on building and industrial efficiency, portions of the supply space for clean electricity when restricted to distributed generation scale, and a critical portion in the middle where microgrids and their relationship to energy storage and electric vehicles reside. There is an extensive literature on the impediments to commercialization of these emerging energy technologies for the building infrastructure market.82 A key impediment (and one found not just in the building market) is that energy is a cost of doing business, and thus rarely the prime mission of the enterprise or a priority for decision makers. In contrast to sectors such as information technology and biotechnology, where advanced technologies often provide the end customer with a new capability or the ability to create a new business, improvements in energy technology typically just lower the cost of an already relatively low-cost commodity (electricity). As a result, the market for new technology is highly price sensitive, and life-cycle costs are sensitive to the operational efficiency of the technology, to issues of maintenance, and to the estimated lifetime of the component. Thus, a first user of a new energy technology bears significantly more risk while getting the same return as subsequent users. A second impediment is the slow pace of technological change in the U.S. building sector: it takes years, if not decades, for new products to achieve widespread use. One reason for this is that many firms in the industry are small; they lack the manpower to do research on new products, and they have limited ability to absorb the financial risks that innovation entails. A third impediment to the widespread deployment of new technologies arises from the fragmented or distributed nature of the market; decisions are usually made at the individual building level, based on the perceived return on investment for a specific project. The structural nature of decision making and ownership can be a significant obstacle to technological innovation in the commercial market: n The entity that bears the up-front capital costs is often not the same as the one that reaps the operation and management savings (this is known as the “split incentives” or “principal agent” problem). n Key decision makers (e.g., architecture and engineering firms) face the liabilities associated with operational failure but do not share in the potential savings, creating an incentive to prefer reliability over innovation. n Financing mechanisms for both energy efficiency (by energy service companies using an ESPC) and distributed and renewable energy generation (through PPA and the associated financing entities) require high confidence in the long-term (decade-plus) performance of the technology, and thus investors are unwilling to put capital at risk on new technologies. Other significant barriers to innovation include a lack of information, which results in high transactional costs, and an inability to properly project future savings. As the National Academy of Sciences has pointed out, the lack of “evidence based” data inhibits making an appropriate business case for deployment.83 The return on the capital investment is often in terms of avoided future costs. Given the limited visibility of those costs when design decisions are being made, it is often hard to properly account for them or see the return. This is further exacerbated by real and perceived discount rates that can lead to suboptimal investment decisions. Finally, the lack of significant operational testing until products are deployed severely limits the rapid and complete development of new energy technologies. The impact of real-world conditions such as building operations, variable loads, human interactions, and so forth makes it very difficult to optimize technologies, and specifically inhibits any radical departure from standard practice. These barriers are particularly problematic for new energy efficiency technologies in the building retrofit market, which is where DoD has the greatest interest. In addition to these barriers, which are common across DoD and the commercial market, DoD has some unique operational requirements (security and information assurance issues) that create other barriers.

### 1NC Incentives Fail

#### Government incentives kill SMR development

Jack Spencer, senior research fellow in nuclear energy policy at Heritage, and Nicolas Loris, fellow in public policy at Heritage, 2-2-2011, “A Big Future for Small Nuclear Reactors?” Heritage Backgrounder, http://www.heritage.org/research/reports/2011/02/a-big-future-for-small-nuclear-reactors

Too many policymakers believe that Washington is equipped to guide the nuclear industry to success. So, instead of creating a stable regulatory environment where the market value of different nuclear technologies can determine their success and evolution, they choose to create programs to help industry succeed. Two recent Senate bills from the 111th Congress, the Nuclear Energy Research Initiative Improvement Act (S. 2052) and the Nuclear Power 2021 Act (S. 2812), are cases in point. Government intervention distorts the normal market processes that, if allowed to work, would yield the most efficient, cost-effective, and appropriate nuclear technologies. Instead, the federal government picks winners and losers through programs where bureaucrats and well-connected lobbyists decide which technologies are permitted, and provides capital subsidies that allow investors to ignore the systemic problems that drive risk and costs artificially high. This approach is especially detrimental to SMRs because subsidies to LWRs distort the relative benefit of other reactor designs by artificially lowering the cost and risk of a more mature technology that already dominates the marketplace.

### 1NC SMR Deployment Fails

#### SMR growth inevitable – government intervention wrecks the market

Jack Spencer, Senior Research Fellow, Nuclear Energy Policy, Heritage, and Nicholas Loris, Herbert and Joyce Morgan Fellow, 2-2-2011, “A Big Future for Small Nuclear Reactors?” Heritage, http://www.heritage.org/research/reports/2011/02/a-big-future-for-small-nuclear-reactors

Abstract: More and more companies—in the U.S. and abroad—are investing in new commercial nuclear enterprises, chief among them, small modular reactors (SMRs). The SMR industry is growing, with many promising developments in the works—which is precisely why the government should not interfere, as subsidies and government programs have already resulted in an inefficient system for large reactors. Heritage Foundation nuclear policy experts explain how the future for small reactors can remain bright. Small modular reactors (SMRs) have garnered significant attention in recent years, with companies of all sizes investing in these smaller, safer, and more cost-efficient nuclear reactors. Utilities are even forming partnerships with reactor designers to prepare for potential future construction. Perhaps most impressive is that most of this development is occurring without government involvement. Private investors and entrepreneurs are dedicating resources to these technologies based on their future prospects, not on government set-asides, mandates, or subsidies, and despite the current regulatory bias in favor of large light water reactors (LWRs). The result is a young, robust, innovative, and growing SMR industry. Multiple technologies are being proposed that each have their own set of characteristics based on price, fuel, waste characteristics, size, and any number of other variables. To continue this growth, policymakers should reject the temptation to offer the same sort of subsidies and government programs that have proven ineffective for large LWRs. While Department of Energy cost-sharing programs and capital subsidies seem attractive, they have yet to net any new reactor construction. Instead, policymakers should focus on the systemic issues that have continued to thwart the expansion of nuclear power in recent years. Specifically, the federal government needs to develop an efficient and predictable regulatory pathway to new reactor certification and to develop a sustainable nuclear waste management strategy.

### 1NC Timeframe

#### No infrastructure – takes forever

Robert Rosner, astrophysicist and founding director of the Energy Policy Institute at Chicago and former Director of the Argonne National Laboratory, Stephen Goldberg, consultant with the Argonne National Laboratory, and Joseph Hezir, member of the Board on Physics and Astronomy of the National Research Council, 12-14-2011, "Small Modular Reactors – Key to Future Nuclear Power Generation in the U.S.," Energy Policy Institute at Chicago The Harris School of Public Policy Studies, https://epic.sites.uchicago.edu/sites/epic.uchicago.edu/files/uploads/SMRWhite\_Paper\_Dec.14.2011copy.pdf

SMR design, licensing, and detailed engineering activities are in an early stage. Licensing and design certification documents are expected to be ready for NRC filing in the 2013 time frame, and detailed engineering is about 10-20% complete. At the time of this analysis, limited cost data were publicly available, and current estimates have a significant amount of uncertainty. The study team estimates that GW-level reactors have roughly two orders of magnitude greater manhours already expended in this early engineering design work as compared with design work carried out for SMRs to date. Finally, the tooling up at a factory dedicated to SMR manufacturing is still in the planning stages and will likely require significant investment for a dedicated plant to manufacture SMRs for an nth-of-a-kind (NOAK) economy.

### 1NC Nat Gas

#### Nat gas and other subsidies crowd out

Matthew Wald, Energy correspondent for the NY Times, 4-10-2012, “Nuclear Power’s Death Somewhat Exaggerated,” NY Times, http://www.nytimes.com/2012/04/11/business/energy-environment/nuclear-powers-death-somewhat-exaggerated.html

If the nation’s 104 reactors, all but one finished by the 1980s, were eventually replaced, it would be with equipment that has fewer moving parts and fewer ways to get into accidents. But they may not be replaced because the competition from other sources of electricity is strong. In the United States, nuclear power is stumbling forward because of an energy policy of limited diversity — what President Obama refers to as his “all of the above” strategy. That means loan guarantees and production tax credits for new reactors, created in the George W. Bush administration, are viewed favorably in the Obama White House. But “all of the above” also means support for solar and wind, as well as support for oil and natural gas production, especially hydraulic fracturing for gas in shale rock. Fracking, as it is known, has turned gas into a formidable competitor. Gas is priced in a unit called a million B.T.U.’s, a quantity that will produce about 150 kilowatt-hours, about as much as a small house uses in a week. When gas was $14 per million B.T.U.’s, it cost 9 cents per kilowatt-hour just for the fuel. Today, with natural gas priced at about $3 per million B.T.U.’s, the fuel cost to make a kilowatt-hour is about 2 cents. That does not count the cost of building the plant to burn the gas, but it does make almost anything else, including zero-carbon sources like solar, wind and nuclear, much less attractive.

## Warming

### 1NC No Impact

#### Their best cards on science prove it’s too late to make meaningful changes

#### Warming doesn’t cause extinction – its gradual, humans adapt, and technology solves problems before they occur

Matt Ridley, British scientist, 8-17-2012, “Apocalypse Not: Here’s Why You Shouldn’t Worry About End Times,” Wired, http://www.wired.com/wiredscience/2012/08/ff\_apocalypsenot/all/

So, should we worry or not about the warming climate? It is far too binary a question. The lesson of failed past predictions of ecological apocalypse is not that nothing was happening but that the middle-ground possibilities were too frequently excluded from consideration. In the climate debate, we hear a lot from those who think disaster is inexorable if not inevitable, and a lot from those who think it is all a hoax. We hardly ever allow the moderate “lukewarmers” a voice: those who suspect that the net positive feedbacks from water vapor in the atmosphere are low, so that we face only 1 to 2 degrees Celsius of warming this century; that the Greenland ice sheet may melt but no faster than its current rate of less than 1 percent per century; that net increases in rainfall (and carbon dioxide concentration) may improve agricultural productivity; that ecosystems have survived sudden temperature lurches before; and that adaptation to gradual change may be both cheaper and less ecologically damaging than a rapid and brutal decision to give up fossil fuels cold turkey.¶ We’ve already seen some evidence that humans can forestall warming-related catastrophes. A good example is malaria, which was once widely predicted to get worse as a result of climate change. Yet in the 20th century, malaria retreated from large parts of the world, including North America and Russia, even as the world warmed. Malaria-specific mortality plummeted in the first decade of the current century by an astonishing 25 percent. The weather may well have grown more hospitable to mosquitoes during that time. But any effects of warming were more than counteracted by pesticides, new antimalarial drugs, better drainage, and economic development. Experts such as Peter Gething at Oxford argue that these trends will continue, whatever the weather.¶ Just as policy can make the climate crisis worse—mandating biofuels has not only encouraged rain forest destruction, releasing carbon, but driven millions into poverty and hunger—technology can make it better. If plant breeders boost rice yields, then people may get richer and afford better protection against extreme weather. If nuclear engineers make fusion (or thorium fission) cost-effective, then carbon emissions may suddenly fall. If gas replaces coal because of horizontal drilling, then carbon emissions may rise more slowly. Humanity is a fast-moving target. We will combat our ecological threats in the future by innovating to meet them as they arise, not through the mass fear stoked by worst-case scenarios.

### 1NC Acidification

#### Acidification doesn’t kill ocean organisms – they can survive

Professor Brice Bosnich FRS, is Gustavus F. and Ann M. Swift Distinguished Professor in Chemistry at The University of Chicago, Emeritus, and is currently a Visiting Fellow at the Research School of Chemistry, The Australian National University, 11-14-2011, “The chemistry of ocean pH and “acidification”,” JaNova, http://joannenova.com.au/2011/11/the-chemistry-of-ocean-ph-and-acidification/

During past periods, stretching back millions of years, atmospheric carbon dioxide levels have varied enormously7; at times reaching concentrations far exceeding those at present and those projected over the next 100 years. Yet during these times of differing carbon dioxide concentrations, calciferous sea organisms continued to thrive. Whereas it is true that there have been “boom and bust” periods for corals and other calciferous sea organisms, the “boom and bust” events do not correlate with the concentration of carbon dioxide in the atmosphere8. Incidentally, there is also no correlation with temperature. Consistent with these historical observations are the reported experimental studies9 that show that calciferous marine organisms are much more immune to the effects of ocean acidification than is usually supposed. In fact these experiments suggest that even for some of the extreme projections of ocean acidification most of the organisms are likely to survive or adapt. It should be noted that the shells of coral and those of other organisms with calciferous exo-skeletons are not formed spontaneously by the reverse of reaction (4). The calcium carbonate of their skeletons is laid down by a process called biomineralization10,11, where the organism actively (uses energy) lays down the calcium carbonate in a precise way about itself. (It is amusing to note that over 95% of spiral shells are right-handed, a morphological manifestation of the biomineralization process. Were the calcium carbonate laid down spontaneously, equal numbers of right- and left-handed shells would form.) It is conceivable that the biomineralization process could counteract any decomposition that might occur by a mild acid such as carbonic acid. There is still much to learn about the response of the oceans to increases in carbon dioxide and how organisms with calciferous skeletons respond to small changes in pH that ensue from the formation of carbonic acid.

#### Plankton and ocean ecosystems are resilient

Vogt, M., Steinke, M., Turner, S., Paulino, A., Meyerhofer, M., Riebesell, U., LeQuere, C. and Liss, P. Co2 Science, July 16, 2008, Marine Ecosystem Response to "Ocean Acidification" Due to Atmospheric CO2 Enrichment, 2008. Dynamics of dimethylsulphoniopropionate and dimethylsulphide under different CO2 concentrations during a mesocosm experiment. Biogeosciences 5: 407-419, <http://www.co2science.org/articles/V11/N29/B2.php>

What was learned Vogt et al. report that they detected no significant phytoplankton species shifts between treatments, and that "the ecosystem composition, bacterial and phytoplankton abundances and productivity, grazing rates and total grazer abundance and reproduction were not significantly affected by CO2 induced effects," citing in support of this statement the work of Riebesell et al. (2007), Riebesell et al. (2008), Egge et al. (2007), Paulino et al. (2007), Larsen et al. (2007), Suffrian et al. (2008) and Carotenuto et al. (2007). In addition, they say that "while DMS stayed elevated in the treatments with elevated CO2, we observed a steep decline in DMS concentration in the treatment with low CO2," i.e., the ambient CO2 treatment. What it means With respect to their many findings, the eight researchers say their observations suggest that "the system under study was surprisingly resilient to abrupt and large pH changes," which is just the opposite of what the world's climate alarmists characteristically predict about CO2-induced "ocean acidification." And that may be why Vogt et al. described the marine ecosystem they studied as "surprisingly resilient" to such change: it may have been a little unexpected.

### 1NC Hydrogen Sulfide

#### Their author is describing thousand-year process – short term impacts outweigh and cause climate disruption

### 1NC CO2

#### CO2 expansion key to solve food shortages – science postdates

**Idso et. al. 11**—Former Professor in the Departments of Geology, Geography, and Botany and Microbiology @ Arizona State and PhD from UMinnesota and former research physicist for the Department of Agriculture—AND Keith Idso, PhD in Botany—AND Craig, PhD in Geography (Sherwood, “Is There a Need for a More Sustainable Agriculture?” Vol. 14, Iss. 24, 15 June 2011, <http://co2science.org/articles/V14/N24/EDIT.php>

In a paper that came to our attention a couple weeks ago, Gomiero et al. (2011) ask the question "Is there a need for a more sustainable agriculture?" This they do in the title of a paper recently published in Critical Reviews in Plant Sciences, where they write that "notwithstanding the great achievements of the 'Green Revolution,' the world will need 70 to 100% more food by 2050," concluding that "a new challenge lies ahead: how to feed nine billion with less land, water and energy, while at the same time preserving natural resources and soil fertility." Coincidentally, this is essentially the same question asked by one of us (Idso, 2011) in a major report published in the current week's issue of CO2 Science: "Estimates of Global Food Production in the Year 2050: Will We Produce Enough to Adequately Feed the World?" In their analysis of the question, Gomiero et al. state that "technical advances are important in order to meet the future needs," as does Idso. In addition, Gomiero et al. state that "addressing key socioeconomic issues, such as the inequality in the access to resources, population growth and access to education are also a priority if we want to properly deal with sustainability." Idso alludes to these same factors, particularly population growth; but he concentrates most heavily on a subject not touched upon by Gomiero et al. -- the aerial fertilization effect of the ongoing rise in the air's CO2 content. Idso first identifies the 45 key crops that account for 95% of world food production, after which he calculates the rates at which their productivities rose over the past 15 years in response to all technological innovations of that time period plus the concurrent increase in atmospheric CO2 concentration. Then, calculating the percentage increases in the productivities of these crops in response to a 300-ppm increase in the atmosphere's CO2 concentration from experimental data tabulated in the Plant Growth Database of CO2 Science, and knowing how much the atmosphere's CO2 content rose over the past 15 years, he determines what part of the past 15 years' productivity increases were due to the aerial fertilization effect of CO2 and what part was due to everything else, which remaining part he calls the techno-intel effect. Extending the linear regression representing this latter effect to the year 2050, and using the IPCC's best median estimate of what the atmosphere's CO2 concentration will be in that year, Idso then calculates the productivity increases of the 45 key crops due to the aerial fertilization effect of CO2 to that point in time, adding the results to those he obtained for the techno-intel effect. This he does for the world as a whole, six world regions, twenty sub-regions and the 25 countries with the greatest populations. And comparing these results with what has been learned from the many different analyses of the subject -- and making adjustments for each geographic entity's projected rate of population growth -- he determines which entities' projected crop productivity increases fall either below, within or above the 70-100% interval that is deemed necessary to insure food security in 2050, with productivity increases below 70% representing food insecurity, with those above 100% representing food security, and with anything in between the two percentages being a "maybe" in terms of food security. The results are rather chilling. And they should cause all those who are calling for mandatory reductions in anthropogenic CO2 emissions to seriously reconsider their views on the subject, while those who may not have thought at all about the topic should do so now; for the looming global food crisis is everybody's business, and all should have a say in what to do about it.

### 1NC Aerosols

#### Cutting coal ends aerosols – aerosols solve climate change.

Jim Robbins, staff writer, 11-16-2011, “2 Views of Aerosols and Climate Change,” NYT, http://green.blogs.nytimes.com/2011/11/16/good-cop-bad-cop-2-views-of-aerosol-and-climate-change/

In a reflection of the complexity of atmospheric science, however, a different new study suggests that aerosols created by humans are not all bad. The same clouds thickened by aerosols reduce temperatures by blocking sunlight, keeping the planet cooler than it otherwise would be, according to the article, which was published last week in the journal Science. And the aerosols themselves reflect sunlight back into space, which also acts to limit temperature increases. Yet there is a third factor, not widely recognized, said Natalie Mahowald, a climate researcher at Cornell University and author of the article in Science. Some artificial aerosols containing iron, nitrogen and phosphorus are fertilizers that settle on the planet and stimulate plant growth on land and phytoplankton in the ocean. Those plants take up more carbon dioxide and can thereby possibly mitigate global warming. It is not the first time that Catch-22 questions have been raised about climate science and the atmosphere. Some people argue, for example, that eliminating coal-fired power as an energy source could have drawbacks because the pollutants emitted would no longer be there to block sunlight and slow warming. Dr. Mahowald said aerosols obviously needed to be reined in regardless because such emissions “kill people.” Still, “research shows it’s an uphill battle” to clean up carbon dioxide she said — and more uphill rhetorically “because those aerosols allow carbon dioxide to be taken up more readily on land and oceans.”

## Heg

### 1NC Status Quo Solves

#### Status quo solves islanding – the military figured out their advantage and fixed it

Michael Aimone, Director, Business Enterprise Integration, Office of the Deputy Under Secretary of Defense (Installations and Environment), 9-12-2012, Statement Before the House Committee on Homeland Security, Subcommittee on Cybersecurity, Infrastructure Protection and Security Technologies, http://homeland.house.gov/sites/homeland.house.gov/files/Testimony%20-%20Aimone.pdf

DoD’s facility energy strategy is also focused heavily on grid security in the name of mission assurance. Although the Department’s fixed installations traditionally served largely as a platform for training and deployment of forces, in recent years they have begun to provide direct support for combat operations, such as unmanned aerial vehicles (UAVs) flown in Afghanistan from fixed installations here in the United States. Our fixed installations also serve as staging platforms for humanitarian and homeland defense missions. These installations are largely dependent on a commercial power grid that is vulnerable to disruption due to aging infrastructure, weather-related events, and potential kinetic, cyber attack. In 2008, the Defense Science Board warned that DoD’s reliance on a fragile power grid to deliver electricity to its bases places critical missions at risk.1 Standby Power Generation Currently, DoD ensures that it can continue mission critical activities on base largely through its fleet of on-site power generation equipment. This equipment is connected to essential mission systems and automatically operates in the event of a commercial grid outage. In addition, each installation has standby generators in storage for repositioning as required. Facility power production specialists ensure that the generators are primed and ready to work, and that they are maintained and fueled during an emergency. With careful maintenance these generators can bridge the gap for even a lengthy outage. As further back up to this installed equipment, DoD maintains a strategic stockpile of electrical power generators and support equipment that is kept in operational readiness. For example, during Hurricane Katrina, the Air Force transported more than 2 megawatts of specialized diesel generators from Florida, where they were stored, to Keesler Air Force Base in Mississippi, to support base recovery.

### 1NC Infrastructure Resilient

#### Infrastructure is resilient

Sean Lawson, Ph.D. Department of Communication University of Utah, January 2011, “WORKING PAPER BEYOND CYBER-DOOM: Cyberattack Scenarios and the Evidence of History,” Mercatus Center: George Mason University, http://krypt3ia.files.wordpress.com/2012/02/beyond-cyber-doom-cyber-attack-scenarios-evidence-history.pdf

History & Sociology of Infrastructure Failure Even today, planning for disasters and future military conflicts alike, including planning for future conflicts in cyberspace, often relies upon hypothetical scenarios that begin with the same assumptions about infrastructural and societal fragility found in early 20th-century theories of strategic bombardment. Some have criticized what they see as a reliance in many cases upon hypothetical scenarios over empirical data (Glenn, 2005; Dynes, 2006; Graham & Thrift, 2007: 9–10; Ranum, 2009; Stiennon, 2009). But, there exists a body of historical and sociological data upon which we can draw, which casts serious doubt upon the assumptions underlying cyberdoom scenarios. Work by scholars in various fields of research, including the history of technology, military history, and disaster sociology has shown that both infrastructures and societies are more resilient than often assumed by policy makers. WWII Strategic Bombing Interwar assumptions about the fragility of interdependent industrial societies and their vulnerability to aerial attack proved to be inaccurate. Both the technological infrastructures and social systems of modern cities proved to be more resilient than military planners had assumed. Historian Joseph Konvitz (1990) has noted that “More cities were destroyed during World War II than in any other conflict in history. Yet the cities didn’t die.” Some critical infrastructure systems like power grids even seem to have improved during the war. Historian David Nye (2010: 48) reports that the United Kingdom, Germany, and Italy all “increased electricity generation.” In fact, most wartime blackouts were self-inflicted and in most cases did not fool the enemy or prevent the dropping of bombs (Nye, 2010: 65). Similarly, social systems proved more resilient than predicted. The postwar U.S. Strategic Bombing Survey, as well as U.K. studies of the reaction of British citizens to German bombing, all concluded that though aerial bombardment led to almost unspeakable levels of pain and destruction, “antisocial and looting behaviors . . . [were] not a serious problem in and after massive air bombings” (Quarantelli, 2008: 882) and that “little chaos occurred” (Clarke, 2002: 22). Even in extreme cases, such as the the atomic bombing of Hiroshima, social systems proved remarkably resilient. A pioneering researcher in the field of disaster sociology describes that within minutes [of the Hiroshima blast] survivors engaged in search and rescue, helped one another in whatever ways they could, and withdrew in controlled flight from burning areas. Within a day, apart from the planning undertaken by the government and military organizations that partly survived, other groups partially restored electric power to some areas, a steel company with 20 percent of workers attending began operations again, employees of the 12 banks in Hiroshima assembled in the Hiroshima branch in the city and began making payments, and trolley lines leading into the city were completely cleared with partial traffic restored the following day (Quarantelli, 2008: 899). Even in the most extreme cases of aerial attack, people neither panicked, nor were they paralyzed. Strategic bombardment alone was not able to exploit infrastructure vulnerability and fragility to destroy the will to resist of those that were targeted from the air (Freedman, 2005: 168; Nye, 2010: 43; Clodfelter, 2010). In the aftermath of the war, it became clear that theories about the possible effects of aerial attack had suffered from a number of flaws, including a technological determinist mindset, a lack of empirical evidence, and even willfully ignoring evidence that should have called into question assumptions about the interdependence and fragility of both technological and social systems. In the first case, Konvitz (1990) has argued that “The strategists’ fundamental error all along had been [giving] technology too much credit, and responsibility, for making cities work—and [giving] people too little.” In his study of U.S. bombardment of Germany, Clodfelter (2010) concluded that the will of a nation is determined by multiple factors, both social and technical, and that it therefore takes more than targeting any one technological system or social group to break an enemy’s will to resist. Similarly, Konvitz (1990) concluded that, “Immense levels of physical destruction simply did not lead to proportional or greater levels of social and economic disorganization.”

### 1NC AT: Grid

#### No lashout – we wouldn’t lose our shit if the power went out

Michael Quinlan, Consulting Senior Fellow for South Asia International Institute for Strategic Studies, 2009, “Thinking About Nuclear Weapons,” amazon

Similar considerations apply to the hypothesis of nuclear war being mistakenly triggered by false alarm. Critics again point to the fact, as it is understood, of numerous occasions when initial steps in alert sequences for US nuclear forces were embarked upon, or at least called for, by indicators mistaken or misconstrued. In none of these Instances, it Is accepted, did matters get at all near to nuclear launch—extraordinary good fortune again. critics have suggested. But the rival and more logical inference from hundreds of events stretching over sixty years of experience presents Itself once more: that the probability of initial misinterpretation leading far towards mistaken launch is remote. Precisely because any nuclear-weapon possessor recognizes the vast gravity of any launch, release sequences have many steps, and human decision is repeatedly interposed as well as capping the sequences. To convey that because a first step was prompted the world somehow came close to accidental nuclear war is wild hyperbole, rather like asserting, when a tennis champion has lost his opening service game, that he was nearly beaten in straight sets. History anyway scarcely offers any ready example of major war started by accident § Marked 12:17 § even before the nuclear revolution imposed an order-of-magn itude increaw In caution. It was occasionally conjectured that nuclear war might be triggered by the real but accidental or unauthorized launch of a strategic nuclear-weapon delivery system in the direction of a potennal adversay)’. No such launch is known to have occurred In over sixty years. The probability of it is thcrcfore very low. But even if it did happen, the further hypothesis of its initiating a general nuclear exchange is far-fetched. It fails to consider the real situation of decision-makers, as pages 6—4 have brought out. The notion that cosmic holocaust might be mistakenly precipitated In this way belongs to science fiction. one special form of miscalculation appeared sporadically in the speculations of academic commentators, though it was scarcely ever to be encountered—at least so far as my own observation went—in the utterances of practical planners within government. This is the idea that nuclear war might be erroneously triggered, or erroneously widened, through a state under attack misreading either what sort of attack it was lwing subjected to, or where the attack came from. One special form of miscalculation appeared sporadically in the speculations of academic commentators, though it was scarcely ever to be encountered—at least so far as my own observation went—in the utterances of practical planners within government. This is the idea that nuclear war might be erroneously triggered, or erroneously widened, through a state under attack misreading either what sort of attack It was being subjected to, or where the attack came from. The postulated misreading of the nature of the attack referred in particular to the hypothesis that if a delivery system—normally a missile—that was known to he capable of carrying either a nuclear or a conventional warhead was launched in a conventional role, the target country might, on detecting the launch through its early. warning systems, misconstrue the mission as an imminent nuclear strike and immediately unleash a nuclear counter-strike of its own. This conecture was voiced, for example, as a criticism of the pro- lls (or giving the US Trident SL11M long associated with nuclear missions, a capability to deliver conventional warheads. Whatever the nwrit of those proposals (it Is not explored here), It is hard to regard this particular apprehension as having any real-life credibility. The flight time of a ballistic missile would not exceed about thirty minutes, and that of a cruise missile a few hours, before arrival on target made its character—conventional or nuclear—unmistakable. No government will need, and no non- lunatic government could wish, to take within so short a span of time a step as enormous and irrevocable as the execution of a nuclear strike on the basis of early-warning Information alone without knowing the true nature of the incoming attack. The speculation tends moreover to be expressed without reference either to any realistic political or conflict-related context thought to render the episode plausible, or to the manifest interest of the launching country, should there be any risk of doubt, in ensuring—by explicit communication if necessary—that there was no misinterpretation of its conventionally armed launch. It may he oblected to this analysis that in the cold war the two opposing superpowers had concepts of launch-on-warning. That seems to be true, at least in the sense that successive US administrations declined to rule out such an option and indeed included In their contingency plans Lxth this and the possibility of launch- under-attack (that is launch after some strikes had been suffered and while the sequence of them was evidently continuing). The Soviet Union was not likely to have had more relaxed practices. But the colossal gravity of activating any such arrangements must always have been recognized. It could have been contemplated only in circumstances where the entire political context made a pre-emptive attack by the adversary plainly a serious and imminent possibility. and where niowover the available information unmistakably mdi- cated that a massive assault with hundreds or thousands of missiles was on the way. That was a scenario wholly unlike that implicit in the supposition that a conventional missile attack might he briefly mIstaken for a nuclear one. The other sort of misunderstanding conjectured—that of misread- ing the source of attack—envisaged. typically. that SLBMs launched by France or the United Kingdom might erroneously be supposed to be coming from US submarines, and so might initiate a super- power exchange which the United States did not in fact intend. (An occasional variant on this was the notion that ‘triggering in this way might actually be an element in deliberate French or IlK deterrent concepts. There was never any truth in this guess in relation to the United Kingdom, and French thinking Is unlikely to have been different.) The unreality In this category of conlecture lay In the Implication that such a scenario could develop without the US government making the most determined efforts to ensure that Soviet (or now Rus.sian leaders knew that the United States was not responsible for the attack, and with those leaders for their part resorting, on unproven suspicion. to action that was virtually certain to provoke nuclear counter-action from the United States. There used occasion- ally to be another speculation, that if the Soviet Union suffered heavy nuclear strikes known to come from France or the United Kingdom, it might judge its interests to be best wrvcd by ensuring that the United States did not remain an unscathed bystander. But even if that were somehow thought marginally less implausible, it would have been a different matter from misinterpretauon of the initial strike. As was nOted earlier In this chapter, the arrangements under which nudear-weapon inventories arc now managed rc in several iniportant respects already mudi less open to concern than they were during much of the cold war. Worries voiced more recently sometimes relate to ‘cyher-attack’----hostile Interference, whether by states or by other actors such as terrorists, with Information systems used in the control of armouries. It is highly unlikely, though details are (again understandably) not made public, that regular reviews of control arrangements are oblivious to any such risks. Perceptions of them do however reinforce the already-strong case that whatever arrange. ments still remain in place for continuous high readiness to launch nuclear action at short notice should be abandoned. Chapter 13 returns to this.

### 1NC AT Heg Decline

#### ( ) Collapse of hegemony takes decades – rivals will have to build up militarily before hegemony collapses – the instability created by our specific scenario undermines US hegemony faster.

#### ( ) Specific conflict scenarios should be given more risk than nebulous global stability claims – it’s easier to predict singular events with accuracy than every single security problem.

#### No impact to heg decline – prefer our evidence – most conclusive study

Paul K. MacDonald, Assistant Professor of Political Science at Williams College and Joseph M. Parent, Assistant Professor of Political Science at the University of Miami, Spring 2011, “Graceful Decline?” International Security, Vol 35, No 4.

In this article, we question the logic and evidence of the retrenchment pessimists. To date there has been neither a comprehensive study of great power retrenchment nor a study that lays out the case for retrenchment as a practical or probable policy. This article fills these gaps by systematically examining the relationship between acute relative decline and the responses of great powers. We examine eighteen cases of acute relative decline since 1870 and advance three main arguments. First, we challenge the retrenchment pessimists’ claim that domestic or international constraints inhibit the ability of declining great powers to retrench. In fact, when states fall in the hierarchy of great powers, peaceful retrenchment is the most common response, even over short time spans. Based on the empirical record, we find that great powers retrenched in no less than eleven and no more than fifteen of the eighteen cases, a range of 61–83 percent. When international conditions demand it, states renounce risky ties, increase reliance on allies or adversaries, draw down their military obligations, and impose adjustments § Marked 12:17 § on domestic populations. Second, we find that the magnitude of relative decline helps explain the extent of great power retrenchment. Following the dictates of neorealist theory, great powers retrench for the same reason they expand: the rigors of great power politics compel them to do so. 12 Retrenchment is by no means easy, but necessity is the mother of invention, and declining great powers face powerful incentives to contract their interests in a prompt and proportionate manner. Knowing only a state’s rate of relative economic decline explains its corresponding degree of retrenchment in as much as 61 percent of the cases we examined. Third, we argue that the rate of decline helps explain what forms great power retrenchment will take. How fast great powers fall contributes to whether these retrenching states will internally reform, seek new allies or rely more heavily on old ones, and make diplomatic overtures to enemies. Further, our analysis suggests that great powers facing acute decline are less likely to initiate or escalate militarized interstate disputes. Faced with diminishing resources, great powers moderate their foreign policy ambitions and offer concessions in areas of lesser strategic value. Contrary to the pessimistic conclusions of critics, retrenchment neither requires aggression nor invites predation. Great powers are able to rebalance their commitments through compromise, rather than conflict. In these ways, states respond to penury the same way they do to plenty: they seek to adopt policies that maximize security given available means. Far from being a hazardous policy, retrenchment can be successful. States that retrench often regain their position in the hierarchy of great powers. Of the fifteen great powers that adopted retrenchment in response to acute relative decline, 40 percent managed to recover their ordinal rank. In contrast, none of the declining powers that failed to retrench recovered their relative position.

## Water Wars

### 1NC Desal Fails

#### Nuclear desal fails

Gar Smith et al, Editor Emeritus of Earth Island Journal, a former editor of Common Ground magazine, a Project Censored Award-winning journalist, and co-founder of Environmentalists Against War., 2011 and Ernest Callenbach, Author of Ecotopia, Ecotopia Emerging, Ecology: A Pocket Guide and was coauthor of EcoManagement, and AILEEN MIOKO-SMITH, Founder and Director of Green Action in Kyoto and is a leading anti-nuclear campaigner in Japan, and JERRY MANDER, Founder, Distinguished Fellow, International Forum on Globalization, “Nuclear Roulette,” <http://ifg.org/pdf/Nuclear_Roulette_book.pdf>

By 2025, 3.5 billion people will face severe fresh-water shortages. Nuclear proponents groping for justifications to expand nuclear power have argued that the waste heat from power plants can provide a “cheap and clean” solution to the inherently costly process of removing salt from seawater. Desalination plants (there are 13,080 worldwide, mostly oil- and gas-fired and mostly in wealthy desert nations) already produce more than 12 billion gallons of drinkable water a day.153 The first nuclear desalinator was installed in Japan in the late 1970s and scores of reactor-heated desalination plants are operating around the world today. But nuclear desalination is another False Solution.The problem with atomic water-purifiers is that using heat to treat seawater is an obsolete 20th-century technology.Thermal desalination has given way to new reverse osmosis systems that are less energy intensive and 33 times cheaper to operate.154 Nuclear desalination advocates claim that wind, solar, and wave power aren’t up to the task while new low-temperature evaporation technology may be able to produce highpurity water at temperatures as low as 122° Fahrenheit.155 Promoting reactors as a solution to the world’s water shortage is especially ludicrous since nuclear power plants consume more water than any other energy source.156

#### Massive threshold – they have to win that other countries buy SMRs too which probably tanks heg independently and is a long timeframe

### 1NC No WW

#### No risk of water wars

Thomas Lawfield is an MA candidate at the University for Peace. Water Security: War or Peace? Thomas Lawfield May 03, 2010, <http://www.monitor.upeace.org/innerpg.cfm?id_article=715>, ZBurdette) \*note: changed to BC[E]

In reality, water does not cause war. The arguments presented above, although correct in principle, have little purchase in empirical evidence. Indeed, as one author notes, there is only one case of a war where the formal declaration of war was over water.[20] This was an incident between two Mesopotamian city states, Lagash and Umma, over 2,500 years BC[E], in modern day southern Iraq. Both the initial premises and arguments of water war theorists have been brought into question. Given this, a number of areas of contestation have emerged: "Questioning both the supply and demand side of the water war argument [...] Questioning assumptions about the costs of water resources [...and] Demonstrating the cooperative potential of the water resource."[21] Why then is water not a cause of war? The answer lies in two factors: first, the capacity for adaptation to water stresses and, second, the political drawbacks to coupling water and conflict. First, there is no water crisis, or more correctly, there are a number of adaptation strategies that reduce stress on water resources and so make conflict less likely. Unlike the water war discourse, which perceives water as finite in the Malthusian sense, **the capacity for adaptation to water stress has been greatly underestimated**. For instance, I will discuss in particular a trading adaptation known as ‘virtual water’, which refers to the water used to grow imported food. This water can be subtracted from the total projected agricultural water needs of a state, and hence allows water scarce states to operate on a lower in-country water requirement than would otherwise be expected.[22] This means that regions of the world that are particularly rich in water produce water intense agricultural products more easily in the global trade system, while other water scarce areas produce low intensity products.[23] The scale of this water is significant - Allan famously pointed out that more embedded water flows into the Middle East in the form of grain than flows in the Nile.[24] In addition, there are significant problems around the hegemonic doctrine of the water crisis. Many authors point to relatively low water provision per capita by states, and suggest that this will increase the likelihood of a state engaging in war with a neighbouring state, to obtain the water necessary for its population. This is normally a conceptual leap that produces the incorrect corollary of conflict, but is also frequently **a problem of data weaknesses** around the per capita requirements. For instance, Stucki cites the case of the Palestinians being under the worst water stress, with a per capita provision being in the region of 165m³/year.[25] Unfortunately, such an analysis is based on false actual provision data in this region. Based on the authors work on water provision in Lebanese Palestinian refugee camps, the actual provision is over 90m³/month. Such a figure is highly likely to be representative of other camps in the region.[26] If this example is representative of trends to exaggerate water pressures in the region, then **we should be sceptical about claims of increasing water stress.** Furthermore, given that many water systems have a pipe leakage rate of fifty per cent, combined with a seventy per cent loss of agricultural water, significant efficiency enhancements could be made to existing infrastructure. Combined with desalination options in many water shortage prone states, there is an overall capacity for technological and market driven solutions to water scarcity.[27]

### 1NC AT: ME War

#### No escalation

Christopher Fettweis, Asst Prof Poli Sci – Tulane, Asst Prof National Security Affairs – US Naval War College, December 2007, “On the Consequences of Failure in Iraq,” Survival, Vol. 49, Iss. 4, December, p. 83 – 98.

No matter what the outcome in Iraq, the region is not likely to devolve into chaos. Although it might seem counter-intuitive, by most traditional measures the Middle East is very stable. Continuous, uninterrupted governance is the norm, not the exception; most Middle East regimes have been in power for decades. Its monarchies, from Morocco to Jordan to every Gulf state, have generally been in power since these countries gained independence. In Egypt Hosni Mubarak has ruled for almost three decades, and Muammar Gadhafi in Libya for almost four. The region’s autocrats have been more likely to die quiet, natural deaths than meet the hangman or post-coup firing squads. Saddam’s rather unpredictable regime, which attacked its neighbours twice, was one of the few exceptions to this pattern of stability, and he met an end unusual for the modern Middle East. Its regimes have survived potentially destabilising shocks before, and they would be likely to do so again. The region actually experiences very little cross-border warfare, and even less since the end of the Cold War. Saddam again provided an exception, as did the Israelis, with their adventures in Lebanon. Israel fought four wars with neighbouring states in the first 25 years of its existence, but none in the 34 years since. Vicious civil wars that once engulfed Lebanon and Algeria have gone quiet, and its ethnic conflicts do not make the region particularly unique. The biggest risk of an American withdrawal is intensified civil war in Iraq rather than regional conflagration. Iraq’s neighbours will likely not prove eager to fight each other to determine who gets to be the next country to spend itself into penury propping up an unpopular puppet regime next door. As much as the Saudis and Iranians may threaten to intervene on behalf of their co- religionists, they have shown no eagerness to replace the counter-insurgency role that American troops play today. If the United States, with its remarkable military and unlimited resources, could not bring about its desired solutions in Iraq, why would any other country think it could do so?17 Common interest, not the presence of the US military, provides the ultimate foundation for stability. All ruling regimes in the Middle East share a common (and understandable) fear of instability. It is the interest of every actor – the Iraqis, their neighbours and the rest of the world – to see a stable, functioning government emerge in Iraq. If the United States were to withdraw, increased regional cooperation to address that common interest is far more likely than outright warfare.

### 1NC Asia War

#### No Asian military conflict – nations won’t chose force, economic interdependence

Muthia Alagappa, Distinguished Senior Fellow at the East-West Center, 2008, “The Long Shadow”

Despite this, the role of force in Asian international politics is becoming more limited due to a number of developments. First, the traditional need for force to protect the territorial integrity of states has declined in importance. With Iesv exceptions (Taiwan, North Korea, and South Korea) state survival is not problematk. The Asian political map is for the most part Internationally accepted. although some boundaries are still in dispute. Such disputes are being settled through negotiations or shelved in the interest of promoting better bilateral relations (Wang 2003) Second, the political, diplomatic. strategic, military, and economic cost of using force has increased dramatically. Over the past several decades, a normative framework has developed in Asia that delegitimizes the use of force to invade and occupy another country or to annex territory that is internationally recognized as belonging to another state. The use of force to invade and occupy another country or to annex territory will incur high costs. For example. if’China were to invade Tai’an without serious provocation, it can expect civil and military resistance in Taiwan, U.S. military intervention, international condemnation, and a setback to its image as a responsible power. Such action would also incur huge economic costs resulting from international and domestic disruptions. Unless military action were swift and surgical, it would also result iii substantial physical damage that would only increase as Asian countries continued to modernize and urbanize. Further. military action that is not successful can have negative domestic political consequences as well. Third. most Asian countries benefit from participation in the regional and global capitalist marketplace. The 1997—98 financial crisis sensitized Asian countries to the vagaries and negative consequences of globalization but did not turn them away from liberalization and participation in the global economy. Preserving international stability has become a key goal of major powcrs. Economic growth. modernization, and growing economic interdependence have increased the cost of the force option and restrained the behavior of states even when major political issues are at stake, as for example in cross-Strait relations. Economic interdependence does not close the force option in all cases, hut the high costs of economic disruption can restrain military action, Further, force is no longer relevant for the attainment of economic goals such as access to resources, labor, and markets, Energy security, (‘or example, is sought through the market, national stockpiling. and sourcing arrangements. Finally, resolution of existing disputes through the use of force is not practical. Except for the United States, none of the Asian states can niarshil the necessary military power to impose a settlement by force. The experience in Iraq and Afghanistan suggests that even the United States suffers limitations and that the use of force carries much risk. These considerations explain the reluctance of the United States to undertake preventive action against North Korea, the reluctance of China w carry out its threat of using force to unify Taiwan with the PRC, and the continuing stalemate in the India-Pakistan confiict over Kashmir. Force may still be used iii these cases, but the attendant strategic, political, diplomatic, and economic costs and risks are high.

### 1NC Indopak

#### Deterrence solves Indo-Pak war – encourages mutual restraint

Sumit Ganguly, Professor of Political at Indiana University, Fall 2008, “Nuclear Stability in South Asia,” International Security, Volume 33, Number 2, Muse

As the outcomes of the 1999 and 2001–02 crises show, nuclear deterrence is robust in South Asia. Both crises were contained at levels considerably short of full-scale war. That said, as Paul Kapur has argued, Pakistan’s acquisition of a nuclear weapons capability may well have emboldened its leadership, secure in the belief that India had no good options to respond. India, in turn, has been grappling with an effort to forge a new military doctrine and strategy to enable it to respond to Pakistani needling while containing the possibilities of conºict escalation, especially to the nuclear level.78 Whether Indian military planners can fashion such a calibrated strategy to cope with Pakistani probes remains an open question. This article’s analysis of the 1999 and 2001–02 crises does suggest, however, that nuclear deterrence in South Asia is far from parlous, contrary to what the critics have suggested. Three speciªc forms of evidence can be adduced to argue the case for the strength of nuclear deterrence. First, there is a serious problem of conflation in the arguments of both Hoyt and Kapur. Undeniably, Pakistan’s willingness to provoke India has increased commensurate with its steady acquisition of a nuclear arsenal. This period from the late 1980s to the late 1990s, however, also coincided with two parallel developments that equipped Pakistan with the motives, opportunities, and means to meddle in India’s internal affairs—particularly in Jammu and Kashmir. The most important change that occurred was the end of the conºict with the Soviet Union, which freed up military resources for use in a new jihad in Kashmir. This jihad, in turn, was made possible by the emergence of an indigenous uprising within the state as a result of Indian political malfeasance.79 Once the jihadis were organized, trained, armed, and unleashed, it is far from clear whether Pakistan could control the behavior and actions of every resulting jihadist organization.80 Consequently, although the number of attacks on India did multiply during the 1990s, it is difªcult to establish a ªrm causal connection between the growth of Pakistani boldness and its gradual acquisition of a full-ºedged nuclear weapons capability. Second, India did respond with considerable force once its military planners realized the full scope and extent of the intrusions across the Line of Control. Despite the vigor of this response, India did exhibit restraint. For example, Indian pilots were under strict instructions not to cross the Line of Control in pursuit of their bombing objectives.81 They adhered to these guidelines even though they left them more vulnerable to Pakistani ground ªre.82 The Indian military exercised such restraint to avoid provoking Pakistani fears of a wider attack into Pakistan-controlled Kashmir and then into Pakistan itself. Indian restraint was also evident at another level. During the last war in Kashmir in 1965, within a week of its onset, the Indian Army horizontally escalated with an attack into Pakistani Punjab. In fact, in the Punjab, Indian forces successfully breached the international border and reached the outskirts of the regional capital, Lahore. The Indian military resorted to this strategy under conditions that were not especially propitious for the country. Prime Minister Jawaharlal Nehru, India’s ªrst prime minister, had died in late 1964. His successor, Lal Bahadur Shastri, was a relatively unknown politician of uncertain stature and standing, and the Indian military was still recovering from the trauma of the 1962 border war with the People’s Republic of China.83 Finally, because of its role in the ColdWar, the Pakistani military was armed with more sophisticated, U.S.-supplied weaponry, including the F-86 Sabre and the F-104 Starªghter aircraft. India, on the other hand, had few supersonic aircraft in its inventory, barring a small number of Soviet-supplied MiG-21s and the indigenously built HF-24.84 Furthermore, the Indian military remained concerned that China might open a second front along the Himalayan border. Such concerns were not entirely chimerical, because a Sino-Pakistani entente was under way. Despite these limitations, the Indian political leadership responded to Pakistani aggression with vigor and granted the Indian military the necessary authority to expand the scope of the war. In marked contrast to the politico-military context of 1965, in 1999 India had a self-conªdent (if belligerent) political leadership and a substantially more powerful military apparatus. Moreover, the country had overcome most of its Nehruvian inhibitions about the use of force to resolve disputes.85 Furthermore, unlike in 1965, India had at least two reserve strike corps in the Punjab in a state of military readiness and poised to attack across the border if given the political nod.86 Despite these signiªcant differences and advantages, the Indian political leadership chose to scrupulously limit the scope of the conºict to the Kargil region. As K. Subrahmanyam, a prominent Indian defense analyst and political commentator, wrote in 1993: The awareness on both sides of a nuclear capability that can enable either country to assemble nuclear weapons at short notice induces mutual caution. This caution is already evident on the part of India. In 1965, when Pakistan carried out its “Operation Gibraltar” and sent in inªltrators, India sent its army across the cease-ªre line to destroy the assembly points of the inªltrators. That escalated into a full-scale war. In 1990, when Pakistan once again carried out a massive inªltration of terrorists trained in Pakistan, India tried to deal with the problem on Indian territory and did not send its army into Pakistanoccupied Kashmir. Subrahmanyam’s argument takes on additional signiªcance in light of the overt acquisition of nuclear weapons by both India and Pakistan.