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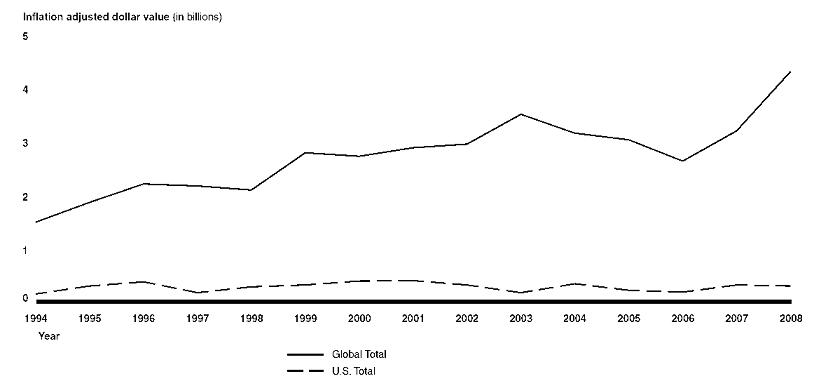
### Exports

**Advantage One---Exports**

**The US is loosing market share to China --- SMRs allow the US to prevent Chinese proliferation.**

**Cullinane 11** (Scott, Staff Member at the House Foreign Affairs Committee, Graduate Fellow at the Institute of World Politics in Washington DC, *America Falling Behind: The Strategic Dimensions of Chinese Commercial Nuclear Energy*, September 28th, Journal of Energy Security)

Due to a confluence of events the United States has recently focused more attention on nuclear weapons policy than it has in previous years; however, the proliferation of commercial nuclear technology and its implications for America’s strategic position have been largely ignored. While the Unites States is currently a participant in the international commercial nuclear energy trade, America’s own domestic construction of nuclear power plants has atrophied severely and the US risks losing its competitive edge in the nuclear energy arena.¶ Simultaneously, the People’s Republic of China (PRC) has made great strides in closing the nuclear energy development gap with America. Through a combination of importing technology, research from within China itself, and a disciplined policy approach the PRC is increasingly able to leverage the export of commercial nuclear power as part of its national strategy. Disturbingly, China does not share America’s commitment to stability, transparency, and responsibility when exporting nuclear technology**.** This is a growing strategic weakness and risk for the United States.To remain competitive and to be in a position to offset the PRC when required the American government should encourage the domestic use of nuclear power and spur the forces of technological innovation.¶ America: dominant no longer¶ History has recorded well American wartime nuclear developments which culminated in the July 1945 Trinity Test, but what happened near Arco, Idaho six years later has been overlooked. In 1951, scientists for the first time produced usable electricity from an experimental nuclear reactor. Once this barrier was conquered the atom was harnessed to generate electricity and permitted America to move into the field of commercial nuclear power. In the next five years alone the United States signed over 20 nuclear cooperation agreements with various countries. Not only did the US build dozens of power plants domestically during the 1960s and 1970s, the US Export-Import Bank also distributed $7.1 billion dollars in loans and guarantees for the international sale of 49 reactors. American built and designed reactors were exported around the world during those years. Even today, more than 60% of the world’s 440 operating reactors are based on technology developed in the United States. The growth of the US civilian nuclear power sector stagnated after the Three Mile Island incident in 1979 – the most serious accident in American civilian nuclear power history. Three Mile Island shook America’s confidence in nuclear power and provided the anti-nuclear lobby ample fuel to oppose the further construction of any nuclear power plants. In the following decade, 42 planned domestic nuclear power plants were cancelled, and in the 30 years since the Three Mile Island incident the American nuclear power industry has survived only through foreign sales and merging operations with companies in Asia and Europe. Westinghouse sold its nuclear division to Toshiba and General Electric joined with Hitachi. Even the highest levels of the American government came to cast nuclear power aside. President Bill Clinton bragged in his 1993 State of the Union Address that “we are eliminating programs that are no longer needed, such as nuclear power research and development.” ¶ America’s slow pace of reactor construction over the past three decades has stymied innovation and caused the nuclear sector and its industrial base to shrivel. While some aspects of America’s nuclear infrastructure still operate effectively, many critical areas have atrophied. For example, one capability that America has entirely lost is the means to cast ultra heavy forgings in the range of 350,000 – 600,000 pounds, which impacts the construction of containment vessels, turbine rotors, and steam generators. In contrast, Japan, China, and Russia all possess an ultra heavy forging capacity and South Korea and India plan to build forges in this range. Likewise, the dominance America enjoyed in uranium enrichment until the 1970s is gone. The current standard centrifuge method for uranium enrichment was not invented in America and today 40% of the enriched uranium US power plants use is processed overseas and imported. Another measure of how much the US nuclear industry has shrunk is evident in the number of companies certified to handle nuclear material. In the 1980s the United States had 400 nuclear suppliers and 900 holders of N-stamp certificates (N-stamps are the international nuclear rating certificates issued by the American Society of Mechanical Engineers). By 2008 that number had reduced itself to 80 suppliers and 200 N-stamp holders. ¶ A recent Government Accountability Office report, which examined data from between 1994 and 2009, found the US to have a declining share of the global commercial nuclear trade. However, during that same period over 60 reactors were built worldwide. Nuclear power plants are being built in the world increasingly by non-American companies.¶



The American nuclear industry entered the 1960s in a strong position, yet over the past 30 years other countries have closed thedevelopmentgapwith America.The implications of this change go beyondeconomics or prestige to include national security. These changes would be less threatening if friendly allies were the ones moving forward with developing a nuclear export industry; however, the quick advancement of the PRC in nuclear energy changes the strategic calculus for America. ¶ The shifting strategic landscape¶ While America’s nuclear industry has languished, current changes in the world’s strategic layout no longer allow America the option of maintaining the status quo without being surpassed. The drive for research, development, and scientific progress that grew out of the Cold War propelled America forward, but those priorities have long since been downgraded by the US government. The economic development of formerly impoverished countries means that the US cannot assume continued dominance by default. The rapidly industrializing PRC is seeking its own place among the major powers of the world and is vying for hegemony in Asia; nuclear power is an example of their larger efforts to marshal their scientific and economic forces as instruments of national power.¶ The rise of China is a phrase that connotes images of a backwards country getting rich off of exporting cheap goods at great social and environmental costs. Yet, this understanding of the PRC has lead many in the United States to underestimate China’s capabilities. The Communist Party of China (CPC) has undertaken a comprehensive long-term strategy to transition from a weak state that lags behind the West to a country that is a peer-competitor to the United States. Nuclear technology provides a clear example of this. ¶ In 1978, General Secretary Deng Xiaoping began to move China out of the destructive Mao era with his policies of 'reform and opening.' As part of these changes during the 1980s, the CPC began a concerted and ongoing effort to modernize the PRC and acquire advanced technology including nuclear technology from abroad. This effort was named Program 863 and included both legal methods and espionage. By doing this, the PRC has managed to rapidly catch up to the West on some fronts. In order to eventually surpass the West in scientific development the PRC launched the follow-on Program 973 to build the foundations of basic scientific research within China to meet the nation’s major strategic needs. These steps have brought China to the cusp of the next stage of technological development, a stage known as “indigenous innovation.”¶ In 2006 the PRC published their science and technology plan out to 2020 and defined indigenous innovation as enhancing original innovation, integrated innovation, and re-innovation based on assimilation and absorption of imported technology in order improve national innovation capability. The Chinese seek to internalize and understand technological developments from around the world so that they can copy the equipment and use it as a point to build off in their own research. This is a step beyond merely copying and reverse engineering a piece of technology. The PRC sees this process of absorbing foreign technology coupled with indigenous innovation as a way of leapfrogging forward in development to gain the upper hand over the West. The PRC’s official statement on energy policy lists nuclear power as one of their target fields. When viewed within this context, the full range of implications from China’s development of nuclear technology becomes evident. The PRC is now competing with the United States in the areas of innovation and high-technology, two fields that have driven American power since World War Two**.** China’s economic appeal is no longer merely the fact that it has cheap labor, but is expanding its economic power in a purposeful way that directly challenges America’s position in the world.¶ The CPC uses the market to their advantage to attract nuclear technology and intellectual capital to China. The PRC has incentivized the processand encouraged new domestic nuclear power plant construction with the goal of having 20 nuclear power plants operational by 2020. The Chinese Ministry of Electrical Power has described PRC policy to reach this goal as encouraging joint investment between State Owned Corporations and foreign companies. 13 reactors are already operating in China, 25 more are under construction and even more reactors are in the planning stages. ¶ In line with this economic policy, China has bought nuclear reactors from Westinghouse and Areva and is cooperating with a Russian company to build nuclear power plants in Taiwan. By stipulating that Chinese companies and personnel be involved in the construction process, China is building up its own domestic capabilities and expects to become self-sufficient. China’s State Nuclear Power Technology Corporation has partnered with Westinghouse to build a new and larger reactor based on the existing Westinghouse AP 1000 reactor. This will give the PRC a reactor design of its own to then export. If the CPC is able to combine their control over raw materials, growing technical know-how, and manufacturing base, China will not only be a powerful economy, but be able to leverage this power to service its foreign policy goals as well.¶ Even though the PRC is still working to master third generation technology, their scientists are already working on what they think will be the nuclear reactor of the future. China is developing Fourth Generation Fast Neutron Reactors and wants to have one operational by 2030. Additionally, a Chinese nuclear development company has announced its intentions to build the “world’s first high-temperature, gas-cooled reactor” in Shandong province which offers to possibility of a reactor that is nearly meltdown proof. A design, which if proved successful, could potentially redefine the commercial nuclear energy trade. ¶ The risk to America¶ The international trade of nuclear material is hazardous in that every sale and transfer increases the chances for an accident or for willful misuse of the material. Nuclear commerce must be kept safe inorder for the benefits of nuclear power generation to be realized**.** Yet, China has a record of sharing dangerous weapons and nuclear material with unfit countries**.** It is a riskfor Americato allow China to become a nuclear exporting country with a competitive technical and scientific edge**.** In order to limit Chinese influence and the relative attractiveness of what they can offer, America mustensure its continuing and substantive lead in reactor technology.¶ The PRC’s record of exporting risky items is well documented. It is known that during the 1980s the Chinese shared nuclear weapon designs with Pakistan and continues to proliferate WMD-related material. According to the Office of the Director of National Intelligence to Congress, China sells technologies and components in the Middle East and South Asia that are dual use and could support WMD and missile programs. Jane’s Intelligence Review reported in 2006 that China, ¶ Despite a 1997 promise to Washington to halt its nuclear technology sales to Iran, such assistance is likely to continue. In 2005, Iranian resistance groups accused China of selling Iran beryllium, which is useful for making nuclear triggers and maraging steel (twice as hard as stainless steel), which is critical for fabricating centrifuges needed to reprocess uranium into bomb-grade material. ¶China sells dangerous materials in order to secure its geopolitical objectives, regardless if those actions harm world stability. There is little reason to believe China will treat the sale of nuclear reactors any differently. Even if the PRC provides public assurances that it will behave differently in the future, the CPC has not been truthful for decades about its nuclear material and weapons sales and hence lacks credibility. For example, in 1983 Chinese Vice Premier Li Peng said that China does not encourage or support nuclear proliferation. In fact, it was that same year that China contracted with Algeria, then a non-NPT [Non-Proliferation Treaty] state, to construct a large, unsafeguarded plutonium production reactor. In 1991 a Chinese Embassy official wrote in a letter to the The Washington Post that 'China has struck no nuclear deal with Iran.' In reality, China had provided Iran with a research reactor capable of producing plutonium and a calutron, a technology that can be used to enrich uranium to weapons-grade. It has been reported that even after United Nation sanctions were put on Iran, Chinese companies were discovered selling “high-quality carbon fiber” and “pressure gauges” to Iran for use in improving their centrifuges.¶ In 2004 the PRC joined the Nuclear Suppliers Groups (NSG), gaining international recognition of their growing power in the nuclear field. In spite of this opportunity for China to demonstrate its responsibility with nuclear energy, it has not fulfilled it NSG obligations. ¶ The PRC has kept the terms of its nuclear reactor sale to Pakistan secret and used a questionable legal technicality to justify forgoing obtaining a NSG waiver for the deal. Additionally, China chose to forgo incorporating new safety measures into the reactors in order to avoid possible complications**¶** A further consequence of China exporting reactors is that these countries may wish to control the fuel cycle which provides the uranium to power their new reactors. The spread of fuel cycle technology comes with two risks: enrichment and reprocessing. Uranium can be enriched to between 3% and 5% for reactor use, but the process can be modified to produce 90% enriched uranium which is weapons-grade. Even if a country only produces low enriched uranium they could easily begin enriching at a higher level if they so choose. Every new country that nuclear technology or information is spread to exponentially increases the risk of material being stolen, given to a third party or being used as the launching point for a weapons program. China’s history of proliferation and willingness to engage economically with very unsavory governments seems likely to increase the risks involving nuclear material**. ¶** Strategy and policy**¶** In the context of US – PRC relations, nuclear energy ismore than a matter of generating electrical power; it isa critical issue of national and global security**.** The direct consequences ofChina’s proliferation of commercial nuclear technology are accompanied by even larger issues which require new responses from the United States**.** China’s ability to connectand integrateeconomic and energy policy with their grand strategy isas impressive as it ismenacing. The PRC leadership has established a coherent policy of economic diplomacy to leverage their economic and technological advancements in a way currently unmatched by the US government. ¶ The US in contrast has not matched its strategy with actions. The US National Security Strategy (NSS), released in 2010, recognizes that economiccompetitiveness is the “wellspring of American power**.”** The strategy cites American’s enduring need for a “strong, innovative, and growing”economy, yet these words are hard to reconcile with the current state of the US nuclearand relatedindustries**.** The NSS goes further and explicitly spells out that:¶ The United States has awindow of opportunity tolead in the development of clean energy technology… If [the United States does] not develop the policies that encourage the private sector to seize the opportunity, the Unites States will fall behind and increasingly become an importer of these new energy technologies.¶ Yet, this recognition from the highest levels of the US government has not done enough to substantially alter the situation or effect the bureaucratic operations of government. A Government Accountability Office report released after the NSS was written found that the US government still lacked a well defined strategy to support and promote US nuclear exports, and the domestic nuclear industry is being stifled by an "outdated and unclear… authorization process" from the Department of Energy.¶ It appears that over the past two decades the US government has grown to accept America’s economic soft power as a permanent condition and hence has not felt compelled to promote or actively defend America’s position. The PRC is now showing that America’s economic strength can be mitigated and co-opted. To adequately counter Chinese activities the US will have to make greater efforts to clearly identify the situation and ensure that policy conforms to strategy in order for the US to advance its position. Prudent actions for US government include:¶ • Build a permanent storage facility, either at Yucca Mountain or elsewhere, to dispose of nuclear waste material. The lack of a permanent storage area is a limiting factor on any expansion of domestic nuclear power plants. ¶ • Streamline the licensing and authorization process for new reactors. Some recent progress has been made in this area, but more can be done to improve efficiencies. ¶ • Continue to build on the incentives for the construction of nuclear power plants that were put in place by the Energy Policy Act of 2005.¶ • Re-write US export controls to guard against PRC industrial espionage, improve US counterintelligence in places of nuclear research, and confront problems associated with deemed-export at US research institutions. ¶ • Invest in nuclear energy research, specifically in safer more efficient reactors that reduce the upfront costs that often hamper nuclear power plant construction. Small reactors or modular construction representtwo areas withgood potential**.** ¶ • Create a whole of government strategy for the construction and export of nuclar reactors and related equipment. ¶ **•** These previous steps will allow the US to engage the PRC from a **position of strength** and begin a more serious dialogue that links economic cooperation on reactor construction to safer proliferation practices.America cannot stop the PRC fromdeveloping andexporting reactors**,** but the US can present more attractive, more technically sophisticated options and use diplomatic and economic pressure to influence China to act responsibly when exporting nuclear technology. ¶ • Perhaps most importantly, consistent andstrong leadership from the executive branch will be critical for implementing these policy changes and for framing the issue of nuclear commerce with regards to China in terms of security and international influence, not only in commercial terms. ¶ The United States today still holds many advantages, both potential and actual, over the PRC. The innovative culture inherent in America is still pushing forward research. America has the means and tools at its disposal to remain competitive and successful in a world where China is a global power. The question is what America will decide it wants its place in the nuclear world to be. Nuclear energy commerce is important for US energy security with proliferation implications, but it is even more important because it is indicative of larger efforts on both sides of the Pacific to shape the 21st century**.**

**Chinese tech sales are uniquely destabilizing.**

**Tu 12** (Kevin, Senior associate in the Carnegie Energy and Climate Program, He leads Carnegie’s work on China’s energy and climate policies, He is also a nonresident research fellow at the Canadian Industrial Energy End-use Data and Analysis Centre, Previously senior energy and environmental consultant from 2004 to 2011 for M.K. Jaccard and Associates – a premier energy and climate consulting firm in Vancouver, *Senior China’s Nuclear Crossroads*, carnegieendowment.org/2012/03/11/china-s-nuclear-crossroads)

It’s first important to acknowledge that the safety oversight mechanism is one of the weakest links of the Chinese nuclear industry. Currently, the National Development and Reform Commission, which overseas nuclear development, is the most politically powerful ministry. In comparison, China’s civil nuclear watchdog is supervised by a much weaker Ministry of Environmental Protection (MEP). Such an unbalanced bureaucratic hierarchical arrangement and internal power struggle among different stakeholders has prevented a timely overhaul of China’s nuclear oversight mechanism. ¶ Right after the Fukushima disaster, the MEP publically expressed support for the further expansion of the Chinese nuclear industry. Since the MEP supervises China’s civil nuclear safety watchdog, such a gesture has unnecessarily blurred the administrative boundary between the nuclear safety regulator and industry development administration. This again underlines the urgent need for China to fundamentally reform its nuclear safety oversight mechanism in order to avoid the cozy bureaucratic collusion between government and industry that has befallen the Japanese nuclear industry. ¶ A lack of transparency in the industry also remains an issue. Immediately after the disaster in Japan, there was a panicked buying spree of iodized salt across China. Even after both the Chinese government and experts publically clarified that this was entirely unnecessary, it still took quite a while for the general public to calm down. This event not only indicates Chinese society’s lack of fundamental understanding on nuclear issues, due largely to the prolonged secretive operations of the Chinese nuclear industry, but also clearly illustrates the absence of basic trust between the Chinese government and civil society. ¶ Since then, the lack of transparency hasn’t fundamentally changed. On January 11, when a new Global Nuclear Materials Security Index was launched, China ranked 29th among a group of 32 nuclear nations in terms of nuclear security and materials transparency.¶ The country’s ability to **safely** export nuclear technology and equipment to overseas markets is yet another challenge that needs to be addressed. Thus far, China has exported its second generation reactors to Pakistan, which are less sophisticated than the imported third generation reactors under construction in China. But the country lacks both sufficient domestic capacity and faces numerous patent-related constraints before it can develop its own export-ready advanced nuclear reactors. While the second generation nuclear technology exported to Pakistan has already been phased out domestically due to safety concerns, it’s still possible for China to be lured by economic and geopolitical considerations into additional nuclear export deals with other developing countries in the future.¶ Last year, both Germany and Switzerland decided to gradually phase out nuclear power. Furthermore, any nuclear project in the United States has become much more difficult to finance and license. Even France, the most nuclear reliant major economy, has already expressed its intention to increase the share of renewables in its electricity mixture. Such dim prospects for nuclear power in developed countries may lead international nuclear companies to look to developing countries – especially China – for business opportunities.¶ Related, if more nuclear power plants are built in developing countries with little experience of operating a reactor, or bordering a region where terrorism is a concern, or without sufficient financial resources to import state of the art technology, then the chance of a **major nuclear accident** hitting the developing world will loom large in the coming decades. Not surprisingly, the ability of the Chinese government to resist short-term geopolitical and economic temptation and stop exporting outdated nuclear reactors to other developing countries will have profound safety implications in a post-Fukushima world.¶ Nuclear emergency planning, meanwhile, is important in ensuring the safety of nuclear power plants. Yet due to concerns about cost escalation and the unwillingness to scare the general public, both national governments and nuclear power companies often ignore the worst-case scenarios of nuclear accidents when facility-specific emergency plans are prepared and exercised. For instance, although 25 years have passed since the Chernobyl disaster, the Fukushima nuclear crisis still caught both the Japanese government and the plant operator entirely unprepared. ¶ When China’s first national nuclear emergency drill was held at Tianwan Nuclear Power Plant in November 2009, authorities simply assumed that an effective emergency response would be sufficient to contain the hypothetic accident. However, after Three Mile Island in 1979, Chernobyl in 1986 and Fukushima Daiichi in 2011, it becomes increasingly difficult for the Chinese government and state-owned nuclear power companies to continue to not prepare emergency plans for worst-case nuclear accidents that have already befallen major nuclear economies in the past. ¶ Given the devastating impacts of major nuclear accidents, and the tarred safety record of global nuclear industry, the Chinese government should prioritize its nuclear safety agenda by fundamentally reforming its nuclear oversight mechanism and continuously improving transparency of its nuclear industry. Instead of actively advocating an overly ambitious nuclear target by 2020, Chinese nuclear power companies should build and indigenize imported third generation nuclear reactors step by step. Finally, the Chinese government needs to continue to suspend the approval of new nuclear power plants until China gains sufficient experience to operate and improve advanced reactors that are still under construction. Otherwise, deficiencies in the insufficiently tested prototype reactors could be easily built into a hastily ordered nuclear generation fleet, which is a fatal mistake that energy-thirsty China can’t afford to make.

**Each sale increases the risk of nuclear war.**

**Kroenig 12** (Matthew, Assistant Professor of Government, Georgetown University and Stanton Nuclear Security Fellow, Council on Foreign Relations, “The History of Proliferation Optimism: Does It Have A Future?” Prepared for the Nonproliferation Policy Education Center, May 26, 2012, <http://www.npolicy.org/article.php?aid=1182&tid=30>)

Nuclear War. The greatest threat posed by the spread of nuclear weapons is nuclear war. The more states in possession of nuclear weapons, the greater the probability that somewhere, someday, there is a catastrophic nuclear war. A nuclear exchange between the two superpowers during the Cold War could have arguably resulted in human extinction and a nuclear exchange between states with smaller nuclear arsenals, such as India and Pakistan, could still result in millions of deaths and casualties, billions of dollars of economic devastation, environmental degradation, and a parade of other horrors.¶ To date, nuclear weapons have only been used in warfare once. In 1945, the United States used one nuclear weapon each on Hiroshima and Nagasaki, bringing World War II to a close. Many analysts point to sixty-five-plus-year tradition of nuclear non-use as evidence that nuclear weapons are unusable, but it would be naïve to think that nuclear weapons will never be used again. After all, analysts in the 1990s argued that worldwide economic downturns like the great depression were a thing of the past, only to be surprised by the dot-com bubble bursting in the later 1990s and the Great Recession of the late Naughts.[53] This author, for one, would be surprised if nuclear weapons are not used in my lifetime.¶ Before reaching a state of MAD**,** new nuclear states go through a transition period in which they lack a secure-second strike capability. In this context, one or both states might believe that it has an incentive to use nuclear weapons first. For example, if Iran acquires nuclear weapons neither Iran, nor its nuclear-armed rival, Israel, will have a secure, second-strike capability. Even though it is believed to have a large arsenal, given its small size and lack of strategic depth, Israel might not be confident that it could absorb a nuclear strike and respond with a devastating counterstrike. Similarly, Iran might eventually be able to build a large and survivable nuclear arsenal, but, when it first crosses the nuclear threshold, Tehran will have a small and vulnerable nuclear force.¶ In these pre-MAD situations, there are at least three ways that nuclear war could occur. First, the state with the nuclear advantage might believe it has a splendid first strike capability. In a crisis, Israel might, therefore, decide to launch a preemptive nuclear strike to disarm Iran’s nuclear capabilities and eliminate the threat of nuclear war against Israel. Indeed, this incentive might be further increased by Israel’s aggressive strategic culture that emphasizes preemptive action. Second, the state with a small and vulnerable nuclear arsenal, in this case Iran, might feel use ‘em or loose ‘em pressures. That is, if Tehran believes that Israel might launch a preemptive strike, Iran might decide to strike first rather than risk having its entire nuclear arsenal destroyed. Third, as Thomas Schelling has argued, nuclear war could result due to the reciprocal fear of surprise attack.[54] If there are advantages to striking first, one state might start a nuclear war in the belief that war is inevitable and that it would be better to go first than to go second. In a future Israeli-Iranian crisis, for example, Israel and Iran might both prefer to avoid a nuclear war, but decide to strike first rather than suffer a devastating first attack from an opponent. ¶ Even in a world of MAD, there is a risk of nuclear war. Rational deterrence theory assumes nuclear-armed states are governed by rational leaders that would not intentionally launch a suicidal nuclear war. This assumption appears to have applied to past and current nuclear powers, but there is no guarantee that it will continue to hold in the future. For example, Iran’s theocratic government, despite its inflammatory rhetoric, has followed a fairly pragmatic foreign policy since 1979, but it contains leaders who genuinely hold millenarian religious worldviews who could one day ascend to power and have their finger on the nuclear trigger. We cannot rule out the possibility that, as nuclear weapons continue to spread, one leader will choose to launch a nuclear war, knowing full well that it could result in self-destruction.**¶** One does not need to resort to irrationality, however, to imagine a nuclearwar under MAD. Nuclear weapons may deter leaders from intentionally launching full-scale wars, but they do not mean the end of international politics. As was discussed above, nuclear-armed states still have conflicts of interest and leaders still seek to coerce nuclear-armed adversaries. This leads to the credibility problem that is at the heart of modern deterrence theory: how can you threaten to launch a suicidal nuclear war? Deterrence theorists have devised at least two answers to this question. First, as stated above, leaders can choose to launch a limited nuclear war.[55] This strategy might be especially attractive to states in a position of conventional military inferiority that might have an incentive to escalate a crisis quickly. During the Cold War, the United States was willing to use nuclear weapons first to stop a Soviet invasion of Western Europe given NATO’s conventional inferiority in continental Europe. As Russia’s conventional military power has deteriorated since the end of the Cold War, Moscow has come to rely more heavily on nuclear use in its strategic doctrine. Indeed, Russian strategy calls for the use of nuclear weapons early in a conflict (something that most Western strategists would consider to be escalatory) as a way to de-escalate a crisis. Similarly, Pakistan’s military plans for nuclear use in the event of an invasion from conventionally stronger India. And finally, Chinese generals openly talk about the possibility of nuclear use against a U.S. superpower in a possible East Asia contingency.¶ Second, as was also discussed above leaders can make a “threat that leaves something to chance.”[56] They can initiate a nuclear crisis.By playing these risky games of nuclear brinkmanship, states can increases the risk of nuclear war in an attempt to force a less resolved adversary to back down. Historical crises have not resulted in nuclear war, but many of them, including the1962 Cuban Missile Crisis**,** have come close**.** And scholars have documented historical incidents when accidents could have led to war.[57] When we think about future nuclear crisis dyads, such as India and Pakistan and Iran and Israel, there are fewer sources of stability that existed during the Cold War,meaning that there is a very real risk that a future Middle East crisis could result in a devastating nuclear exchange.

**Independently causes Asia proliferation.**

**Ferguson 10** President of the Federation of American Scientists. Adjunct Professor in the Security Studies Program at Georgetown University and an Adjunct Lecturer in the National Security Studies Program at the Johns Hopkins University. (Charles, Nuclear Energy and Nonproliferation: The Implications of Expanded Nuclear Energy in Asia, in *Asia’s Rising Power and America’s Continued Purpose*, Ed Tellis, Marble and Tanner, 167-9)

Further nuclear power use in Asia will undoubtedly occur. This should not alarm Washington, however, as long as the United States remains engaged in ensuring the highest international standards of nuclear safety and security, maintaining access to all components of the fuel cycle, upholding adequate controls on enrichment and reprocessing components of this cycle, shoring up security alliances, and working to bring pariah states into the international system. Rather than an alarming prospect, more nuclear power plants in Asia would offer environmental and energy security benefits. Nuclear power plants do not emit greenhouse gases when operating, and the fuel cycle as a whole emits a proportionally small amount of these gases compared to other energy sources. If nuclear power plants further displace coal and other fossil fuel plants, air quality will tend to improve. Regarding energy security, more nuclear power use will reduce the demand for foreign sources of fossil fuels for electricity generation. The United States should welcome these developments.¶ Balancing these benefits are the risks of accidents at and attacks on nuclear facilities, the erosion of U.S. economic competitiveness, and the threat of proliferation. To effectively engage in reducing the likelihood of accidents, the United States has led and should continue to lead by example. In particular, states that possess or want to possess nuclear power plants look to the U.S. Nuclear Regulatory Commission as the gold standard because of its independence, authority to order the shutdown of unsafe plants without too much pressure from industry, and technical capacity. Similarly, it is important for the United States to support financially and technically the capability of the IAEA to provide safety and regulatory assistance, especially to nuclear power entrant states. The IAEA also has been offering security advice to nuclear facility operators. The United States and all other states using nuclear power have a vital interest in preventing major accidents and attacks because such events could put the brakes on a potential global nuclear energy revival.¶ The rise of Asian nuclear energy competitors should not overly alarm the United States, but neither should it call for complacency. For instance, although China's deals to secure uranium supplies may appear threatening, the fact is that uranium is an abundant element, and reserves estimates forecast that the world will have many decades worth of uranium based on current demand for nuclear power and the current price range of ura|nium. A large increase in demand would tend to increase the price, but this will create an incentive for more uranium prospecting and mining. The price of uranium fuel is a relatively small fraction of the total cost of nuclearpower. If underground uranium resources run low, uranium in seawater is estimated to supply more than one thousand years of nuclear power. The price of seawater extraction of uranium, however, is prohibitive with current technologies.¶ The United States presently does not have the ability to manufacture a complete large nuclear power plant. However, the corporate alliances formed between U.S. and Japanese nuclear companies—Westinghouse with Toshiba and GE Nuclear with Hitachi—have given the United States a more significant role in the global marketplace. Like Japan, South Korea also has benefited from U.S. technology transfer, but unlike Japan, South Korea is venturing largely on its own in marketing its nuclear wares. For example, South Korea beat out French-based Areva and the Japan-U.S. corporate alliances to secure the major reactor deal with the UAE in December 2009. South Korea was able to win this deal because it was the lowest bidder and was able to convince the UAE that it could build the reactors faster than competitors. The lesson learned is that the Japan-U.S. alliance will need to become more competitive and provide added value such as greater safety features to plants.

**That goes nuclear.**

**Cimbala 10** Professor of Political Science @ Penn State, (Stephen, Nuclear Weapons and Cooperative Security in the 21st Century, p. 117-8)

A five-sided nuclear competition in the Pacific would be linked, in geopolitical deterrence and proliferation space, to the existing nuclear deterrents in India and Pakistan, and to the emerging nuclear weapons status of Iran. An arc of nuclear instability from Tehran to Tokyo could place U.S. proliferation strategies into the ash heap of history and call for more drastic military options, not excluding preemptive war, defenses, and counter-deterrent special operations. In addition, an eight-sided nuclear arms race in Asia would increase the likelihood of accidental or inadvertent nuclear war. It would do so because: (1) some of these states already have histories of protracted conflict; (2) states may have politically unreliable or immature command and control systems, especially during a crisis involving a decision for nuclear first strike or retaliation; unreliable or immature systems might permit a technical malfunction that caused an unintended launch, or a deliberate but unauthorized launch by rogue commanders; (3) faulty intelligence and warning systems might cause one side to misinterpret the other’s defensive moves to forestall attack as offensive preparations for attack, thus triggering a mistaken preemption.

**A strong SMR industry is key to US leadership, market share, and cradle to grave.**

**Mandel 9** (Jenny – Scientific American, Environment & Energy Publishing, LLC, “Less Is More for Designers of "Right-Sized" Nuclear Reactors” September 9, 2009, http://www.scientificamerican.com/article.cfm?id=small-nuclear-power-plant-station-mini-reactor)

Tom Sanders, president of the American Nuclear Society and manager of Sandia National Laboratories' Global Nuclear Futures Initiative, has been stumping for small rectors for more than a decade. American-made small reactors, Sanders insists, can play a central role in global nonproliferation efforts. "Our role at Sandia is the national security-driven notion that it's in the interests of the U.S. to be one of the dominant nuclear suppliers," Sanders said. While U.S. companies have been exiting the industry over the past decades as government and popular support for new construction has waned, Sanders maintains that strong U.S. participation in the nuclear energy marketplace would give diplomats a new tool to use with would-be nuclear powers. "It's hard to tell Iran what to do if you don't have anything Iran wants," he explained. Sanders said mini-reactors are **ideal** to sell to developing countries that want to boost their manufacturing might and that would otherwise look to other countries for nuclear technologies. If the United States is not participating in that market, he said, it becomes hard to steer buyers away from technologies that pose greater proliferation risks. Sanders been promoting this view since the 1990s, he said, when he realized "we were no longer selling nuclear goods and services, so we could no longer write the rules." The domestic nuclear industry had basically shut down, with no new construction in decades and a flight of talent and ideas overseas. There is a silver lining in that brain drain, though, he believes, in that U.S. companies getting back into the game now are less tied to the traditional, giant plants and are freer to innovate. A feature that several of the new product designs share is that the power plants could be mass-produced in a factory to minimize cost, using robots to ensure consistency. Also, with less design work for each installation, the time to complete an order would be shortened and some of the capital and other costs associated with long lead times avoided, Sanders said. Another feature he favors is building the plants with a lifetime supply of fuel sealed inside. Shipped loaded with fuel, such reactors could power a small city for 20 years without the host country ever handling it. Once depleted, the entire plant would be packed back up and shipped back to the United States, he said, with the sensitive spent fuel still sealed away inside. Sanders is working on a reactor design hatched by the lab with an undisclosed private partner. He believes it is feasible to build a prototype modular reactor -- including demonstration factory components and a mockup of the reactor itself -- as early as 2014, for less than a billion dollars. A mini-reactor could ring up at less than $200 million, he said, or at $300 million to $400 million with 20 years of fuel. At $3,000 to $4,000 per kilowatt, he said, that would amount to significant savings over estimates of $4,000 to $6,000 per kilowatt for construction alone with traditional plant designs. To get a design ready to build, Sanders is urging a partnership between the government and the private sector. "If it's totally a government research program, labs can take 20 to 30 years" to finish such projects, he said. "If it becomes a research science project, it could go on forever." New approach, old debates So far, there is no sign that the government's nuclear gatekeeper, NRC, is wowed by the small-reactor designs. NRC's Office of New Reactors warned Babcock & Wilcox in June that the agency "will need to limit interactions with the designers of small power reactors to occasional meetings or other nonresource-intensive activities" over the next two years because of a crowded schedule of work on other proposals. Meanwhile, opponents of nuclear technologies are not convinced that small reactors are an improvement over traditional designs. Arjun Makhijani, who heads the Institute for Energy and Environmental Research, a think tank that advocates against nuclear power, sees disseminating the technology as incompatible with controlling it. "A lot of the proliferation issue is not linked to having or not having plutonium or highly enriched uranium, but who has the expertise to have or make bombs," Makhijani said. "In order to spread nuclear technologies, you have to have the people who have the expertise in nuclear engineering, who know about nuclear materials and chain reactions and things like that -- the same expertise for nuclear bombs. That doesn't suffice for you to make a bomb, but then if you clandestinely acquire the materials, then you can make a bomb." Peter Wilk, acting program director for safe energy with Physicians for Social Responsibility, an anti-nuclear group, argues that expanding nuclear power use runs counter to the goal of nonproliferation. "The whole proposition presupposes an ... international economy in which more and more fuel is produced and more and more waste must be dealt with, which only makes those problems that are still unsolved larger," he said. "It may or may not do a better job of preventing the host country from literally getting their hands on it, but it doesn't reduce the amount of fuel in the world or the amount of waste in the world," Wilk added. And then there is the issue of public opinion. "Imagine that Americans would agree to take the waste that is generated in other countries and deal with it here," Makhijani said. "At the present moment, it should be confined to the level of the fantastic, or even the surreal. If [the technology's backers] could come up with a plan for the waste, then we could talk about export." Makhijani pointed to a widely touted French process for recycling nuclear waste as a red herring (ClimateWire, May 18). "It's a mythology that it ameliorates the waste problem," he said. According to Makhijani's calculations, the French recycling process generates far more radioactive waste than it cleans up. One category of highly radioactive material, which ends up stored in glass "logs" for burial, is reduced, he said. But in processing the waste, about six times the original volume of waste is produced, he said. Much of that must be buried deep underground, and the discharge of contaminated wastewater used in recycling has angered neighboring countries, he said. Operational risk, of course, is another major concern. "One has reduced the amount of unnecessary risk," Wilke said, "but it's still unnecessary risk." He added, "I get the theory that smaller, newer, ought to be safer. The question is: Why pursue this when there are so many better alternatives?" To Sandia's Sanders, Wilke is asking the wrong question. With the governments of major economies like China, Russia and Japan putting support and cash into nuclear technologies, the power plants are here to stay, he believes. "There's going to be a thousand reactors built over the next 50 years," he said. "The question is: Are we building them, or are we just importing them?**"**

**Cradle to grave independently solves.**

**McGoldrick 11** Fred McGoldrick, CSIS, spent 30 years at the U.S. State and Energy Departments and at the U.S. mission to the IAEA, negotiated peaceful nuclear cooperation agreements with a number of countries and helped shape the policy of the United States to prevent the spread of nuclear weapons, May 2011, Limiting Transfers of Enrichment and Reprocessing Technology: Issues, Constraints, Options, http://belfercenter.ksg.harvard.edu/files/MTA-NSG-report-color.pdf

The U.S. has been exploring the possibilities of developing offers by one or more suppliers to lease or sell power reactor fuel to consumer states, with the understanding that the resultant spent fuel would be returned to one of the supplier countries or to suitable alternative locations, such as a regional or international used fuel storage facility or waste repository, (if a host state can be found), where it would be treated, recycled or where wastes could be ultimately disposed of. 4.3.1 Offering a Broad-based Cradle-to-Grave Fuel Cycle Service. This option would involve a major diplomatic initiative to explore the possibility that one or more supplier states could offer cradle-to-grave services to all states without E&R plants as an incentive for states to forgo the development of such capabilities. Advantages If one or more suppliers could offer a “cradle-to-grave” fuel supply program, it could prove to be far more effective than some other techniques in discouraging the spread of reprocessing facilities. Because the commercial market already provides strong assurance of fresh fuel supply, while management of spent fuel is unresolved, such a service offer could create stronger incentives for countries to rely on international fuel supply than steps such as fuel banks would. Russia has already implemented such a program on a limited scale. Moscow has concluded an agreement to provide fresh nuclear fuel for the Bushehr nuclear power plant in Iran and to take back the used nuclear fuel to Russia. The Russians have also taken back some spent pow- er reactor fuel from East European countries and have indicated that they might be willing to consider taking back spent fuel of Russian-origin in the future—they have recently offered such deals to Vietnam and Turkey—but do not seem ready to accept spent fuel produced from fuel from non-Russian suppliers. If Russia were to offer a broad-based a cradle-to-grave program, **it may put pressure on its competitors in the reactor and enrichment markets to** try to **follow suit**. If a country agreed to accept spent fuel from other countries on a commercial basis, the supplier of the fresh fuel and the country to which the spent fuel was sent would not have to be the same for a cradle-to-grave service to work.

### DoD

**Advantage Two---The DoD**

**Domestic DoD bases are vulnerable due to connectivity to the civilian grid.**

**Robitaille 12** (George, Department of Army Civilian & US Army War College, *Small Modular Reactors: The Army’s Secure Source of Energy?*, March, Strategy Research Project)

In recent years, the U.S Department of Defense (DoD) has identified a security issue at our installations related to the dependence on the civilian electrical grid. 1 The DoD depends on a steady source of electricity at military facilities to perform the functions that secure our nation. The flow of electricity into military facilities is controlled by a public grid system that is susceptible to being compromised because of the age of the infrastructure, damage from **natural disasters** and the potential for **cyber attacks**. Although most major functions at military installations employ diesel powered generators as temporary backup, the public grid may not be available to provide electricity when it is needed the most. The United States electrical infrastructure system is prone to failures and susceptible to **terrorist attacks**. 2 It is critical that the source of electricity for our installations is reliable and secure. In order to ensure that our military facilities possess a secure source of electricity, either the public system of electric generation and distribution is upgraded to increase its reliability as well as reducing its susceptibility to cyber attack or another source of electricity should be pursued. Although significant investments are being made to upgrade the electric grid, the current **investment levels** are not keeping up with the aging system. Small modular reactors (SMRs) are nuclear reactors that are about an order of magnitude smaller than traditional commercial reactor used in the United States. SMRs are capable of generating electricity and at the same time, they are not a significant contributor to global warming because of green house gas emissions. The DoD needs to look at small modular nuclear reactors (SMRs) to determine if they can provide a safe and secure source of electricity. Electrical Grid Susceptibility to Disruptions According to a recent report by the Defense Science Board, the DoD gets ninety nine percent of their electrical requirements from the civilian electric grid. 3 The electric grid, as it is currently configured and envisioned to operate for the foreseeable future, may not be reliable enough to ensure an uninterrupted flow of electricity for our critical military facilities given the influences of the aging infrastructure, its susceptibility to severe weather events, and the potential for cyber attacks. The DoD dependency on the grid is reflected in the $4.01 Billion spent on facilities energy in fiscal year 2010, the latest year which data was available. 4 The electricity used by military installations amounts to $3.76 billion. 5 As stated earlier, the DoD relies on the commercial grid to provide a secure source of energy to support the operations that ensure the security of our nation and it may not be available when we need it. The system could be taken down for extended periods of time by failure of aging components, acts of nature, or intentionally by cyber attacks. Aging Infrastructure. The U.S electric power grid is made up of independently owned power plants and transmission lines. The political and environmental resistance to building new electric generating power plants combined with the rise in consumption and aging infrastructure increases the potential for grid failure in the future. There are **components** in the U.S. electric grid that are over one hundred years old and some of the recent outages such as the 2006 New York blackout can be directly attributed to this out of date, aging infrastructure. 6 Many of the components of this system are at or exceeding their operational life and the general trend of the utility companies is to not replace power lines and other equipment until they fail. 7 The government led deregulation of the electric utility industry that started in the mid 1970s has contributed to a three decade long deterioration of the electric grid and an increased state of instability. Although significant investments are being made to upgrade the electric grid, the many years of prior neglect will require a considerable amount of time and funding to bring the aging infrastructure up to date. Furthermore, the current investment levels to upgrade the grid are not keeping up with the aging system. 8 In addition, **upgrades** to the digital infrastructure which were done to increase the systems efficiency and reliability, have actually made the system more susceptible to cyber attacks. 9 Because of the aging infrastructure and the impacts related to weather, the extent, as well as frequency of failures is expected to increase in the future. Adverse Weather. According to a 2008 grid reliability report by the Edison Electric Institute, sixty seven per cent of all power outages are related to **weather**. Specifically, lightning contributed six percent, while adverse weather provided thirty one percent and vegetation thirty percent (which was predominantly attributed to wind blowing vegetation into contact with utility lines) of the power outages. 10 In 1998 a falling tree limb damaged a transformer near the Bonneville Dam in Oregon, causing a cascade of related black-outs across eight western states. 11 In August of 2003 the lights went out in the biggest blackout in North America, plunging over fifty million people into darkness over eight states and two Canadian provinces. Most areas did not have power restored four or five days. In addition, drinking water had to be distributed by the National Guard when water pumping stations and/or purification processes failed. The estimated economic losses associated with this incident were about five billion dollars. Furthermore, this incident also affected the operations of twenty two nuclear plants in the United States and Canada. 12 In 2008, Hurricane Ike caused approximately seven and a half million customers to lose power in the United States from Texas to New York. 13 The electric grid suffered numerous power outages every year throughout the United States and the number of outages is expected to increase as the infrastructure ages without sufficient upgrades and weather-related impacts continue to become more frequent. Cyber Attacks. The civilian grid is made up of three unique electric networks which cover the East, West and Texas with approximately one hundred eighty seven thousand miles of power lines. There are several weaknesses in the electrical distribution infrastructure system that could compromise the flow of electricity to military facilities. The flow of energy in the network lines as well as the main distribution hubs has become totally dependent on **computers** and internet-based communications. Although the digital infrastructure makes the grid more efficient, it also makes it more susceptible to cyber attacks. Admiral Mr. Dennis C. Blair (ret.), the former Director of National Intelligence, testified before Congress that “the growing connectivity between information systems, the Internet, and other infrastructures creates opportunities for attackers to disrupt telecommunications, electrical power, energy pipelines, refineries, financial networks, and other critical infrastructures. 14 ” The Intelligence Community assesses that a number of nations already have the technical capability to conduct such attacks. 15 In the 2009 report, Annual Threat Assessment of the Intelligence Community for the Senate Armed Services Committee, Adm. Blair stated that “Threats to cyberspace pose one of the most serious economic and national security challenges of the 21st Century for the United States and our allies.”16 In addition, the report highlights a growing array of state and non-state actors that are targeting the U.S. critical infrastructure for the purpose of creating chaos that will subsequently produce detrimental effects on citizens, commerce, and government operations. These actors have the ability to compromise, steal, change, or completely destroy information through their detrimental activities on the internet. 17 In January 2008, US Central Intelligence Agency senior analyst Tom Donahue told a gathering of three hundred international security managers from electric, water, oil & gas, and other critical industry, that data was available from multiple regions outside the United States, which documents cyber intrusions into utilities. In at least one case (outside the U.S.), the disruption caused a power outage affecting multiple cities. Mr. Donahue did not specify who executed these attacks or why, but did state that all the intrusions were conducted via the Internet. 18 During the past twenty years, advances in computer technologies have permeated and advanced all aspects of our lives. Although the digital infrastructure is being increasingly merged with the power grid to make it more efficient and reliable, it also makes it more vulnerable to cyber attack. In October 2006, a foreign hacker invaded the Harrisburg, PA., water filtration system and planted malware. 19 In June 2008, the Hatch nuclear power plant in Georgia shut down for two days after an engineer loaded a software update for a business network that also rebooted the plant's power control system. In April 2009, The Wall Street Journal reported that cyber spies had infiltrated the U.S. electric grid and left behind software that could be used to disrupt the system. The hackers came from China, Russia and other nations and were on a “fishing expedition” to map out the system. 20 According to the secretary of Homeland Security, Janet Napolitano at an event on 28 October 2011, cyber–attacks have come close to compromising the country’s critical infrastructure on multiple occasions. 21 Furthermore, during FY11, the United States Computer Emergency Readiness Team took action on more than one hundred thousand incident reports by releasing more than five thousand actionable cyber security alerts and information products. 22 The interdependence of modern infrastructures and digital based systems makes any cyber attacks on the U.S. electric grid potentially significant. The December 2008 report by the Commission on Cyber Security for the forty fourth Presidency states the challenge plainly: “America’s failure to protect cyberspace is one of the most urgent national security problems facing the new administration”. 23 The susceptibility of the grid to being compromised has resulted in a significant amount of resources being allocated to ensuring the systems security. Although a substantial amount of resources are dedicated to protecting the nation’s infrastructure, it may not be enough to ensure the continuous flow of electricity to our critical military facilities. SMRs as they are currently envisioned may be able to provide a secure and independent alternative source of electricity in the event that the public grid is compromised. SMRs may also provide additional DoD benefit by supporting the recent government initiatives related to energy consumption and by circumventing the adverse ramifications associated with building coal or natural gas fired power plants on the environment.

**SMR’s solve --- they address weaknesses which otherwise leads to nuclear retaliation.**

**Andres 11** (\*Richard B. – Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University, \*\*Hanna L. Breetz – Doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, *Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications*, Strategic Forum, National Defense University, Institute for National Strategic Studies, February 2011, http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

Small reactors and energy Security The DOD interest in small reactors derives largely from problems with base and logistics vulnerability. Over the last few years, the Services have begun to reexamine virtually every aspect of how they generate and use en- ergy with an eye toward cutting costs, decreasing carbon emissions, and reducing energy-related vulnerabilities. These actions have resulted in programs that have signif- icantly reduced DOD energy consumption and green- house gas emissions at domestic bases. Despite strong efforts, however, two critical security issues have thus far proven resistant to existing solutions: bases’ vulnerability to civilian power outages, and the need to transport large quantities of fuel via convoys through hostile territory to forward locations. Each of these is explored below. Grid Vulnerability. DOD is unable to provide its bases with electricity when the civilian electrical grid is offline for an extended period of time. Currently, domestic military installations receive **99 percent** of their electricity from the civilian power grid. As explained in a recent study from the Defense Science Board: DOD’s key problem with electricity is that critical missions, such as national strategic awareness and national command authorities, are almost entirely dependent on the national transmission grid . . . [which] is fragile, vulnerable, near its capacity limit, and outside of DOD control. In most cases, neither the grid nor on-base backup power provides sufficient reliability to ensure continuity of critical national priority functions and oversight of strategic missions in the face of a long term (several months) outage.7 The grid’s fragility was demonstrated during the 2003 Northeast blackout in which 50 million people in the United States and Canada lost power, some for up to a week, when one Ohio utility failed to properly trim trees. The blackout created cascading disruptions in sewage systems, gas station pumping, cellular communications, border check systems, and so forth, and demonstrated the interdependence of modern infrastructural systems.8 More recently, awareness has been growing that the grid is also vulnerable to purposive attacks. A re- port sponsored by the Department of Homeland Secu- rity suggests that a coordinated cyber attack on the grid could result in a third of the country losing power for a period of weeks or months.9 Cyberattacks on critical infrastructure are not well understood. It is not clear, for instance, whether existing **terrorist groups** might be able to develop the capability to conduct this type of attack. It is likely, however, that some **nation-states** either have or are working on developing the ability to take down the U.S. grid. In the event of a war with one of these states, it is possible, if not likely, that parts of the civilian grid would cease to function, taking with them military bases located in affected regions. Government and private organizations are currently working to secure the grid against attacks; however, it is not clear that they will be successful. Most military bases currently have backup power that allows them to func- tion for a period of hours or, at most, a few days on their own. If power were not restored after this amount of time, the results could be disastrous. First, military assets taken offline by the crisis would not be available to help with disaster relief. Second, during an extended blackout, global military operations could be seriously compromised; this disruption would be particularly serious if the blackout was induced during major combat operations. During the Cold War, this type of event was far less likely because the United States and Soviet Union shared the common understanding that blinding an opponent with a grid black- out could **escalate to nuclear war**. America’s current opponents, however, may not share this fear or be deterred by this possibility. In 2008, the Defense Science Board stressed that DOD should mitigate the electrical grid’s vulnerabilities by turning military installations into “islands” of energy self-sufficiency.10 The department has made ef- forts to do so by promoting efficiency programs that lower power consumption on bases and by constructing renewable power generation facilities on selected bases. Unfortunately, these programs will not come close to reaching the goal of islanding the vast majority of bases. Even with massive investment in efficiency and renew- ables, most bases would not be able to function for more than a few days after the civilian grid went offline. Unlike other alternative sources of energy, small reactors have the potential to **solve** DOD’s vulnerability to grid outages. Most bases have relatively light power de- mands when compared to civilian towns or cities. Small reactors could easily support bases’ power demands separate from the civilian grid during crises. In some cases, the reactors could be designed to produce enough power not only to supply the base, but also to provide critical services in surrounding towns during long-term outages. Strategically, islanding bases with small reactors has another benefit. One of the main reasons an enemy might be willing to risk reprisals by taking down the U.S. grid during a period of military hostilities would be to affect ongoing military operations. Without the lifeline of intelligence, communication, and logistics provided by U.S. domestic bases, American military operations would be compromised in almost any conceivable contingency. Making bases more resilient to civilian power outages would **reduce the incentive** for an opponent to attack the grid. An opponent might still attempt to take down the grid for the sake of disrupting civilian systems, but the powerful incentive to do so in order to win an ongoing battle or war would be greatly reduced.

**That causes nuclear world war three.**

**Lawson 9** (Sean, Assistant professor in the Department of Communication at the University of Utah, *Cross-Domain Response to Cyber Attacks and the Threat of Conflict Escalation*, May 13th 2009, http://www.seanlawson.net/?p=477)

Introduction At a time when it seems impossible to avoid the seemingly growing hysteria over the threat of cyber war,[1] network security expert Marcus Ranum delivered a refreshing talk recently, “The Problem with Cyber War,” that took a critical look at a number of the assumptions underlying contemporary cybersecurity discourse in the United States. He addressed one issue in partiuclar that I would like to riff on here, the issue of conflict escalation–i.e. the possibility that offensive use of cyber attacks could escalate to the use of physical force. As I will show, his concerns are entirely legitimate as current U.S. military cyber doctrine assumes the possibility of what I call “**cross-domain responses**” to cyberattacks. Backing Your Adversary (Mentally) into a Corner Based on the premise that completely blinding a potential adversary is a good indicator to that adversary that an attack is iminent, Ranum has argued that “The best thing that you could possibly do if you want to start **World War III** is launch a cyber attack. [...] When people talk about cyber war like it’s a practical thing, what they’re really doing is messing with the OK button for starting World War III. We need to get them to sit the f-k down and shut the f-k up.” [2] He is making a point similar to one that I have made in the past: Taking away an adversary’s ability to make rational decisions could backfire. [3] For example, Gregory Witol cautions that “attacking the decision makerÃ¢â‚¬â„¢s ability to perform rational calculations may cause more problems than it hopes to resolveÃ¢â‚¬Â¦ Removing the capacity for rational action may result in completely unforeseen consequences, including longer and bloodier battles than may otherwise have been.” [4] Ã¯Â»Â¿Cross-Domain Response So, from a theoretical standpoint, I think his concerns are well founded. But the current state of U.S. policy may be cause for even greater concern. It’s not just worrisome that a hypothetical blinding attack via cyberspace could send a signal of imminent attack and therefore trigger an irrational response from the adversary. What is also cause for concern is that current U.S. policy indicates that “kinetic attacks” (i.e. physical use of force) are seen as potentially legitimate responses to cyber attacks. Most worrisome is that current U.S. policy implies that a **nuclear response** is possible, something that policy makers have not denied in recent press reports. The reason, in part, is that the U.S. defense community has increasingly come to see cyberspace as a “domain of warfare” equivalent to air, land, sea, and space. The definition of cyberspace as its own domain of warfare helps in its own right to blur the online/offline, physical-space/cyberspace boundary. But thinking logically about the potential consequences of this framing leads to some disconcerting conclusions. If cyberspace is a domain of warfare, then it becomes possible to define “cyber attacks” (whatever those may be said to entail) as acts of war. But what happens if the U.S. is attacked in any of the other domains? It retaliates. But it usually does not respond only within the domain in which it was attacked. Rather, responses are typically “cross-domain responses”–i.e. a massive bombing on U.S. soil or vital U.S. interests abroad (e.g. think 9/11 or Pearl Harbor) might lead to air strikes against the attacker. Even more likely given a U.S. military “way of warfare” that emphasizes multidimensional, “joint” operations is a massive conventional (i.e. non-nuclear) response against the attacker in all domains (air, land, sea, space), simultaneously. The possibility of “kinetic action” in response to cyber attack, or as part of offensive U.S. cyber operations, is part of the current (2006) National Military Strategy for Cyberspace Operations [5]: Of course, the possibility that a cyber attack on the U.S. could lead to a U.S. nuclear reply constitutes possibly the ultimate in “cross-domain response.” And while this may seem far fetched, it has not been ruled out by U.S. defense policy makers and is, in fact, implied in current U.S. **defense policy documents**. From the National Military Strategy of the United States (2004): “The term WMD/E relates to a broad range of adversary capabilities that pose potentially devastating impacts. WMD/E includes chemical, biological, radiological, nuclear, and enhanced high explosive weapons as well as other, more asymmetrical ‘weapons’. They may rely more on disruptive impact than destructive kinetic effects. For example, cyber attacks on US commercial information systems or attacks against transportation networks may have a greater economic or psychological effect than a relatively small release of a lethal agent.” [6] The authors of a 2009 National Academies of Science report on cyberwarfare respond to this by saying, “Coupled with the declaratory policy on nuclear weapons described earlier, this statement implies that the United States will regard certain kinds of cyberattacks against the United States as being in the same category as nuclear, biological, and chemical weapons, and thus that a nuclear response to certain kinds of cyberattacks (namely, cyberattacks with devastating impacts) may be possible. It also sets a relevant scale–a cyberattack that has an impact larger than that associated with a relatively small release of a lethal agent is regarded with the same or greater seriousness.” [7] Asked by the New York Times to comment on this, U.S. defense officials would not deny that nuclear retaliation remains an option for response to a massive cyberattack: “Pentagon and military officials confirmed that the United States reserved the option to respond in any way it chooses to punish an adversary responsible for a catastrophic cyberattack. While the options could include the use of nuclear weapons, officials said, such an extreme counterattack was hardly the most likely response.” [8] The rationale for this policy: “Thus, the United States never declared that it would be bound to respond to a Soviet and Warsaw Pact conventional invasion with only American and NATO conventional forces. The fear of escalating to a nuclear conflict was viewed as a pillar of stability and is credited with helping deter the larger Soviet-led conventional force throughout the cold war. Introducing the possibility of a nuclear response to a catastrophic cyberattack would be expected to serve the same purpose.” [9] Non-unique, Dangerous, and In-credible? There are a couple of interesting things to note in response. First is the development of a new acronym, WMD/E (weapons of mass destruction or effect). Again, this acronym indicates a weakening of the requirement of physical impacts. In this new definition, mass effects that are not necessarily physical, nor necessarily destructive, but possibly only disruptive economically or even psychologically (think “shock and awe”) are seen as equivalent to WMD. This new emphasis on effects, disruption, and psychology reflects both contemporary, but also long-held beliefs within the U.S. defense community. It reflects current thinking in U.S. military theory, in which it is said that U.S. forces should be able to “mass fires” and “mass effects” without having to physically “mass forces.” There is a sliding scale in which the physical (often referred to as the “kinetic”) gradually retreats–i.e. massed forces are most physical; massed fire is less physical (for the U.S. anyway); and massed effects are the least physical, having as the ultimate goal Sun Tzu’s “pinnacle of excellence,” winning without fighting. But the emphasis on disruption and psychology in WMD/E has also been a key component of much of 20th century military thought in the West. Industrial theories of warfare in the early 20th century posited that industrial societies were increasingly interdependent and reliant upon mass production, transportation, and consumption of material goods. Both industrial societies and the material links that held them together, as well as industrial people and their own internal linkages (i.e. nerves), were seen as increasingly fragile and prone to disruption via attack with the latest industrial weapons: airplanes and tanks. Once interdependent and fragile industrial societies were hopelessly disrupted via attack by the very weapons they themselves created, the nerves of modern, industrial men and women would be shattered, leading to moral and mental defeat and a loss of will to fight. Current thinking about the possible dangers of cyber attack upon the U.S. are based on the same basic premises: technologically dependent and therefore fragile societies populated by masses of people sensitive to any disruption in expected standards of living are easy targets. Ultimately, however, a number of researchers have pointed out the pseudo-psychological, pseudo-sociological, and a-historical (not to mention non-unique) nature of these assumptions. [10] Others have pointed out that these assumptions did not turn out to be true during WWII strategic bombing campaigns, that modern, industrial societies and populations were far more resilient than military theorists had assumed. [11] Finally, even some military theorists have questioned the assumptions behind cyber war, especially when assumptions about our own technology dependence-induced societal fragility (dubious on their own) are applied to other societies, especially non-Western societies (even more dubious). [12] Finally, where deterrence is concerned, it is important to remember that a deterrent has to be credible to be effective. True, the U.S. retained nuclear weapons as a deterrent during the Cold War. But, from the 1950s through the 1980s, there was increasing doubt among U.S. planners regarding the credibility of U.S. nuclear deterrence via the threat of “massive retaliation.” As early as the 1950s it was becoming clear that the U.S. would be reluctant at best to actually follow through on its threat of massive retaliation. Unfortunately, most money during that period had gone into building up the nuclear arsenal; conventional weapons had been marginalized. Thus, the U.S. had built a force it was likely never to use. So, the 1960s, 1970s, and 1980s saw the development of concepts like “flexible response” and more emphasis on building up conventional forces. This was the big story of the 1980s and the “Reagan build-up” (not “Star Wars”). Realizing that, after a decade of distraction in Vietnam, it was back in a position vis-a-viz the Soviets in Europe in which it would have to rely on nuclear weapons to offset its own weakness in conventional forces, a position that could lead only to blackmail or holocaust, the U.S. moved to create stronger conventional forces. [13] Thus, the question where cyber war is concerned: If it was in-credible that the U.S. would actually follow through with massive retaliation after a Soviet attack on the U.S. or Western Europe, is it really credible to say that the U.S. would respond with nuclear weapons to a cyber attack, no matter how disruptive or destructive? Beyond credibility, deterrence makes many other assumptions that are problematic in the cyber war context. It assumes an adversary capable of being deterred. Can most of those who would perpetrate a cyber attack be deterred? Will al-Qa’ida be deterred? How about a band of nationalistic or even just thrill-seeker, bandwagon hackers for hire? Second, it assumes clear lines of **command and control**. Sure, some hacker groups might be funded and assisted to a great degree by states. But ultimately, even cyber war theorists will admit that it is doubtful that states have complete control over their armies of hacker mercenaries. How will deterrence play out in this kind of scenario?

**And attacks collapse military war fighting capability.**

**Loudermilk 11** (Micah, Research Associate for the Energy & Environmental Security Policy program with the Institute for National Strategic Studies at National Defense University*, Small Nuclear Reactors: Enabling Energy Security for Warfighters*, Small Wars Journal, March 27th 2011, http://smallwarsjournal.com/blog/small-nuclear-reactors-enabling-energy-security-for-warfighters)

Last month, the Institute for National Strategic Studies at National Defense University released a report entitled Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications. Authored by Dr. Richard Andres of the National War College and Hanna Breetz from Harvard University, the paper analyzes the potential for the Department of Defense to incorporate small reactor technology on its domestic military bases and in forward operating locations. According to Andres and Breetz, the reactors have the ability to solve two critical vulnerabilities in the military's mission: the dependence of domestic bases on the civilian electrical grid and the challenge of supplying ample fuel to troops in the field. Though considerable obstacles would accompany such a move -- which the authors openly admit -- the benefits are significant enough to make the idea merit serious consideration. At its heart, a discussion about military uses of small nuclear reactors is really a conversation about securing the nation's war fighting capabilities. Although the point that energy security **is** national security has become almost redundant -- quoted endlessly in government reports, think tank papers, and the like -- it is repeated for good reason. Especially on the domestic front, the need for energy security on military bases is often overlooked. There is no hostile territory in the United States, no need for fuel convoys to constantly supply bases with fuel, and no enemy combatants. However, while bases and energy supplies are not directly vulnerable, the civilian electrical grid on which they depend for 99% of their energy use is -- and that makes domestic installations highly insecure. The U.S. grid, though a technological marvel, is extremely old, brittle, and susceptible to a wide variety of problems that can result in power outages -- the 2003 blackout throughout the Northeast United States is a prime example of this. In the past, these issues were largely limited to accidents including natural disasters or malfunctions, however today, intentional threats such as cyber attacks represent a very real and growing threat to the grid. Advances in U.S. military technology have further increased the risk that a grid blackout poses to the nation's military assets. As pointed out by the Defense Science Board, **critical missions** including national strategic awareness and national command authorities depend on the national transmission grid. Additionally, capabilities vital to troops in the field -- including drones and satellite intelligence/reconnaissance -- are lodged at bases within the United States and their loss due to a blackout would **impair the ability** of troops to operate in forward operating areas. Recognition of these facts led the Defense Science Board to recommend "islanding" U.S. military installations to mitigate the electrical grid's vulnerabilities. Although DOD has undertaken a wide array of energy efficiency programs and sought to construct renewable energy facilities on bases, these endeavors will fall far short of the desired goals and still leave bases unable to function in the event of long-term outages. As the NDU report argues though, small nuclear reactors have the potential to alleviate domestic base grid vulnerabilities. With a capacity of anywhere between 25 and 300 megawatts, small reactors possess sufficient generation capabilities to power any military installation, and most likely some critical services in the areas surrounding bases, should a blackout occur. Moreover, making bases resilient to civilian power outages would reduce the incentive for an opponent to disrupt the grid in the event of a conflict as military capabilities would be unaffected. Military bases are also secure locations, reducing the associated fears that would surely arise from the distribution of reactors across the country. Furthermore, small nuclear reactors, by design, are significantly safer than prior generations of reactors due to passive safety features, simplified designs, sealed reactor cores, and lower operational requirements.

**Conventional wars are inevitable --- ineffectiveness leads to major power aggression and violent competition.**

**Horowitz 9** (Michael C. Horowitz and Dan A. Shalmon, Professor of Political Science @ University of Pennsylvania & Senior Analyst @ Lincoln Group, LLC. *The Future of War and American Military Strategy*, Orbis, Spring 2009)

It is important to recognize at the outset two key points about United States strategy and the potential costs and benefits for the United States in a changing security environment. First, the United States is very likely to remain fully engaged in global affairs. Advocates of restraint or global withdrawal, while popular in some segments of academia, remain on the **margins** of policy debates in Washington D.C. This could always change, of course. However, at present, **it is a given** that the United States will define its interests globally and pursue a strategy that requires capable military forces able to project power around the world. Because ‘‘indirect’’ counter-strategies are the rational choice for actors facing a strong state’s power projection, irregular/asymmetric threats are inevitable given America’s role in the global order.24 Second, the **worst-case scenario** is a loss of U.S. conventional superiority. Losing military control of the sea and the air, ‘‘the global commons,’’25 would render American global strategy **outmoded in an instant**. The idea that the United States must improve its capacity to fight counterinsurgency operations presumes a need to do so beyond defending the homeland and that the United States will have the capacity to intervene in future conflicts around the world. However, while it seems unlikely at present, what if developments in warfare cut down and then eliminated the conventional military superiority of the United States? The loss of conventional military superiority by the United States would probably make the current strategic environment **look like a picnic**.26 For example, currently a Marine unit deploying to Afghanistan or Iraq focuses most on the post-deployment battlefield tasks. However, imagine a world where commanders and soldiers, like their World War II forbears, must fear being sunk on a transport ship or shot out of the sky on the way over, or being targeted by electronic, nanotechnological, or directed energy or precision guided munitions when preparing to search a village for insurgents.27 In such a strategic environment, overseas deployments to win hearts and minds in a low intensity war or wipe out radical jihadi groups would likely—and logically— take a backseat to more ‘‘traditional’’ concerns: convoys, tank battles, air and coastal defenses, and crash programs to build a new generation of naval and air weapons to take back the seas and skies. Meanwhile, in the interim, the United States homeland would be more at risk than at any point since the World War II—arguably more threatened than in its entire history. What John Mearsheimer has called the ‘‘stopping power of water’’ previously functioned to shield the United States, with its oceanic buffers to the east and west, from existential threats. However, in the information age and if the United States no longer controls the waterways of the world, water may not be enough. A world without American conventional military superiority would also **encourage aggression** by regional actors eager to settle scores and take advantage of the fact that the United States could no longer destroy their military forces at a low cost, to say nothing of the global dangers inherent in the **competition among major powers** that could result. The latter scenario is the worst case and it bears mentioning only because it should inform the framework in which any debate about defense strategy occurs. Pg. 307-308

**That competition goes nuclear.**

**Kagan 7** (Frederick Kagan and Michael O’Hanlon 7, Fred’s a resident scholar at AEI, Michael is a senior fellow in foreign policy at Brookings, “The Case for Larger Ground Forces”, April, <http://www.aei.org/files/2007/04/24/20070424_Kagan20070424.pdf>)

We live at a time when wars not only rage in nearly **every region** but threaten to erupt in many places where the current relative calm is tenuous. To view this as a strategic military challenge for the United States is not to espouse a specific theory of America’s role in the world or a certain political philosophy. Such an assessment flows directly from the basic bipartisan view of American foreign policy makers since World War II that overseas threats must be countered before they can directly threaten this country’s shores, that the basic stability of the international system is essential to American peace and prosperity, and that no country besides the United States is in a position to lead the way in countering major challenges to the global order. Let us highlight the threats and their consequences with a few concrete examples, emphasizing those that involve key strategic regions of the world such as the Persian **Gulf** and **East Asia**, or key potential threats to American security, such as the spread of nuclear weapons and the strengthening of the global **Al Qaeda**/jihadist movement. The Iranian government has rejected a series of international demands to halt its efforts at enriching uranium and submit to international inspections. What will happen if the US—or Israeli—government becomes convinced that Tehran is on the verge of fielding a nuclear weapon? **North Korea**, of course, has already done so, and the ripple effects are beginning to spread. **Japan**’s recent election to supreme power of a leader who has promised to rewrite that country’s constitution to support increased armed forces—and, possibly, even nuclear weapons— may well alter the delicate balance of fear in Northeast Asia fundamentally and rapidly. Also, in the background, at least for now, **Sino Taiwanese** tensions continue to flare, as do tensions between **India and Pakistan**, **Pakistan and Afghanistan**, **Venezuela** and the United States, and so on. Meanwhile, the world’s nonintervention in Darfur troubles consciences from Europe to America’s Bible Belt to its bastions of liberalism, yet with no serious international forces on offer, the bloodletting will probably, tragically, continue unabated. And as bad as things are in Iraq today, they could get worse. What would happen if the key Shiite figure, Ali al Sistani, were to die? If another major attack on the scale of the Golden Mosque bombing hit either side (or, perhaps, both sides at the same time)? Such deterioration might convince many Americans that the war there truly was lost—but the costs of reaching such a conclusion would be enormous. Afghanistan is somewhat more stable for the moment, although a major Taliban offensive appears to be in the offing. Sound US grand strategy must proceed from the recognition that, over the next few years and decades, the world is going to be a very unsettled and quite dangerous place, with Al Qaeda and its associated groups as a subset of a much larger set of worries. The only serious response to this international environment is to develop armed forces capable of protecting America’s vital interests throughout this dangerous time. Doing so requires a military capable of a wide range of missions—including not only deterrence of great power conflict in dealing with potential hotspots in Korea, the Taiwan Strait, and the Persian Gulf but also associated with a variety of Special Forces activities and stabilization operations. For today’s US military, which already excels at high technology and is increasingly focused on re-learning the lost art of counterinsurgency, this is first and foremost a question of finding the resources to field a large-enough standing Army and Marine Corps to handle personnel intensive missions such as the ones now under way in Iraq and Afghanistan. Let us hope there will be no such large-scale missions for a while. But preparing for the possibility, while doing whatever we can at this late hour to relieve the pressure on our soldiers and Marines in ongoing operations, is prudent. At worst, the only potential downside to a major program to strengthen the military is the possibility of spending a bit too much money. Recent history shows no link between having a larger military and its overuse; indeed, Ronald Reagan’s time in office was characterized by higher defense budgets and yet much less use of the military, an outcome for which we can hope in the coming years, but hardly guarantee. While the authors disagree between ourselves about proper increases in the size and cost of the military (with O’Hanlon preferring to hold defense to roughly 4 percent of GDP and seeing ground forces increase by a total of perhaps 100,000, and Kagan willing to devote at least 5 percent of GDP to defense as in the Reagan years and increase the Army by at least 250,000), we agree on the need to start expanding ground force capabilities by at least 25,000 a year immediately. Such a measure is not only prudent, it is also badly overdue.

### Warming

**Advantage 3---Warming**

**Warming is real, anthropogenic, and reversible if we start mitigation now.**

**Nuccitelli 11** (Dana, An environmental scientist at a private environmental consulting firm in the Sacramento, California area. He has a Bachelor's Degree in astrophysics from the University of California at Berkeley, and a Master's Degree in physics from the University of California at Davis. He has been researching climate science, economics, and solutions as a hobby since 2006, and has contributed to Skeptical Science since September, 2010., Updated 2011, Originally Posted 9/24/2010, *The Big Picture*, http://www.skepticalscience.com/big-picture.html)

The Earth is Warming We know the planet is warming from surface temperature stations and satellites measuring the temperature of the Earth's surface and lower atmosphere. We also have various tools which have measured the warming of the Earth's oceans. Satellites have measured an energy imbalance at the top of the Earth's atmosphere. Glaciers, sea ice, and ice sheets are all receding. Sea levels are rising. Spring is arriving sooner each year. There's simply no doubt - the planet is warming (Figure 1). Global Warming Continues And yes, the warming is continuing. The 2000s were hotter than the 1990s, which were hotter than the 1980s, which were hotter than the 1970s. 2010 tied for the hottest year on record. The 12-month running average global temperature broke the record three times in 2010, according to NASA Goddard Institute for Space Studies (GISS) data. Sea levels are still rising, ice is still receding, spring is still coming earlier, there's still a planetary energy imbalance, etc. etc. Contrary to what some would like us to believe, the planet has not magically stopped warming. Those who argue otherwise are confusing short-term noise with long-term global warming (Figure 2). Foster and Rahmstorf (2011) showed that when we filter out the short-term effects of the sun, volcanoes, and El Niño cycles, the underlying man-made global warming trend becomes even more clear (Figure 3). For as much as atmospheric temperatures are rising, the amount of energy being absorbed by the planet is even more striking when one looks into the deep oceans and the change in the global heat content (Figure 4). Humans are Increasing Atmospheric Greenhouse Gases The amount of greenhouse gases in the atmosphere - particularly carbon dioxide (CO2) - has been rising steadily over the past 150 years. There are a number of lines of evidence which clearly demonstrate that this increase is due to human activities, primarily burning fossil fuels. The most direct of evidence involves simple accounting. Humans are currently emitting approximately 30 billion tons of CO2 per year, and the amount in the atmosphere is increasing by about 15 billion tons per year. Our emissions have to go somewhere - half goes into the atmosphere, while the other half is absorbed by the oceans (which is causing another major problem - ocean acidification). We also know the atmospheric increase is from burning fossil fuels because of the isotopic signature of the carbon in the atmosphere. Carbon comes in three different isotopes, and plants have a preference for the lighter isotopes. So if the fraction of lighter carbon isotopes in the atmosphere is increasing, we know the increase is due to burning plants and fossil fuels, and that is what scientists observe. The fact that humans are responsible for the increase in atmospheric CO2 is settled science. The evidence is clear-cut. Human Greenhouse Gases are Causing Global Warming There is overwhelming evidence that humans are the dominant cause of the recent global warming, mainly due to our greenhouse gas emissions. Based on fundamental physics and math, we can quantify the amount of warming human activity is causing, and verify that we're responsible for essentially all of the global warming over the past 3 decades. The aforementioned Foster and Rahmstorf (2011) found a 0.16°C per decade warming trend since 1979 after filtering out the short-term noise. In fact we expect human greenhouse gas emissions to cause more warming than we've thus far seen, due to the thermal inertia of the oceans (the time it takes to heat them). Human aerosol emissions are also offsetting a significant amount of the warming by causing global dimming. Huber and Knutti (2011) found that human greenhouse gas emissions have caused 66% more global warming than has been observed since the 1950s, because the cooling effect of human aerosol emissions have offset about 44% of that warming. They found that overall, human effects are responsible for approximately 100% of the observed global warming over the past 60 years (Figure 5). There are also numerous 'fingerprints' which we would expect to see from an increased greenhouse effect (i.e. more warming at night, at higher latitudes, upper atmosphere cooling) that we have indeed observed (Figure 6). Climate models have projected the ensuing global warming to a high level of accuracy, verifying that we have a good understanding of the fundamental physics behind climate change. Sometimes people ask "what would it take to falsify the man-made global warming theory?". Well, basically it would require that our fundamental understanding of physics be wrong, because that's what the theory is based on. This fundamental physics has been scrutinized through scientific experiments for decades to centuries. The Warming will Continue We also know that if we continue to emit large amounts of greenhouse gases, the planet will continue to warm. We know that the climate sensitivity to a doubling of atmospheric CO2 from the pre-industrial level of 280 parts per million by volume (ppmv) to 560 ppmv (we're currently at 390 ppmv) will cause 2–4.5°C of warming. And we're headed for 560 ppmv in the mid-to-late 21st century if we continue business-as-usual emissions. The precise sensitivity of the climate to increasing CO2 is still fairly uncertain: 2–4.5°C is a fairly wide range of likely values. However, even if we're lucky and the climate sensitivity is just 2°C for doubled atmospheric CO2, if we continue on our current emissions path, we will commit ourselves to that amount of warming (2°C above pre-industrial levels) within the next 75 years. The Net Result will be Bad There will be some positive results of this continued warming. For example, an open Northwest Passage, enhanced growth for some plants and improved agriculture at high latitudes (though this will require use of more fertilizers), etc. However, the negatives will almost certainly outweigh the positives, by a long shot. We're talking decreased biodiversity, water shortages, increasing heat waves (both in frequency and intensity), decreased crop yields due to these impacts, damage to infrastructure, displacement of millions of people, etc. Arguments to the contrary are superficial One thing I've found in reading skeptic criticisms of climate science is that they're consistently superficial. For example, the criticisms of James Hansen's 1988 global warming projections never go beyond "he was wrong," when in reality it's important to evaluate what caused the discrepancy between his projections and actual climate changes, and what we can learn from this. And those who argue that "it's the Sun" fail to comprehend that we understand the major mechanisms by which the Sun influences the global climate, and that they cannot explain the current global warming trend. And those who argue "it's just a natural cycle" can never seem to identify exactly which natural cycle can explain the current warming, nor can they explain how our understanding of the fundamental climate physics is wrong. There are legitimate unresolved questions Much ado is made out of the expression "the science is settled." The science is settled in terms of knowing that the planet is warming rapidly, and that humans are the dominant cause. There are certainly unresolved issues. As noted above, there's a big difference between a 2°C and a 4.5°C warming for a doubling of atmospheric CO2, and it's an important question to resolve, because we need to know how fast the planet will warm in order to know how fast we need to reduce our greenhouse gas emissions. There are significant uncertainties in some feedbacks which play into this question. For example, will clouds act as a net positive feedback (by trapping more heat, causing more warming) or negative feedback (by reflecting more sunlight, causing a cooling effect) as the planet continues to warm? And exactly how much global warming is being offset by human aerosol emissions? These are the sorts of questions we should be debating, and the issues that most climate scientists are investigating. Unfortunately there is a there is a very vocal contingent of people determined to continue arguing the resolved questions for which the science has already been settled. And when climate scientists are forced to respond to the constant propagation of misinformation on these settled issues, it just detracts from our investigation of the legitimate, unresolved, important questions. Smart Risk Management Means Taking Action People are usually very conservative when it comes to risk management. Some of us buy fire insurance for our homes when the risk of a house fire is less than 1%, for example. When it comes to important objects like cars and homes, we would rather be safe than sorry. But there is arguably no more important object than the global climate. We rely on the climate for our basic requirements, like having enough accessible food and water. Prudent risk management in this case is clear. The scientific evidence discussed above shows indisputably that there is a risk that we are headed towards very harmful climate change. There are uncertainties as to how harmful the consequences will be, but uncertainty is not a valid reason for inaction. There's very high uncertainty whether I'll ever be in a car accident, but it would be foolish of me not to prepare for that possibility by purchasing auto insurance. Moreover, uncertainty cuts both ways, and it's just as likely that the consequences will be worse than we expect as it is that the consequences won't be very bad. We Can Solve the Problem The good news is that we have the tools we need to mitigate the risk posed by climate change. A number of plans have been put forth to achieve the necessary greenhouse gas emissions cuts (i.e. here and here and here). We already have all the technology we need. Opponents often argue that mitigating global warming will hurt the economy, but the opposite is true. Those who argue that reducing emissions will be too expensive ignore the costs of climate change - economic studies have consistently shown that mitigation is several times less costly than trying to adapt to climate change (Figure 7). This is why there is a consensus among economists with expertise in climate that we should put a price on carbon emissions (Figure 8). should US reduce emissions The Big Picture The big picture is that we know the planet is warming, humans are causing it, there is a substantial risk to continuing on our current path, but we don't know exactly how large the risk is. However, uncertainty regarding the magnitude of the risk is not an excuse to ignore it. We also know that if we continue on a business-as-usual path, the risk of catastrophic consequences is very high. In fact, the larger the uncertainty, the greater the potential for the exceptionally high risk scenario to become reality. We need to continue to decrease the uncertainty, but it's also critical to acknowledge what we know and what questions have been resolved, and that taking no action is not an option. The good news is that we know how to solve the problem, and that doing so will minimize the impact not only on the climate, but also on the economy. The bottom line is that from every perspective - scientific, risk management, economic, etc. - there is no reason not to immeditately take serious action to mitigate climate change, and failing to do so would be exceptionally foolish.

**SMRs are the only solution that adresses the magnitude of warming before its too late.**

**Nordhaus 12** (Michael Shellenberger, Jessica Lovering, Founder of the Breakthrough Institute, graduate of Earlham College and holds a masters degree in cultural anthropology from the University of California, Santa Cruz, "New Nukes: Why We Need Radical Innovation to Make New Nuclear Energy Cheap", September 11, http://thebreakthrough.org/index.php/programs/energy-and-climate/new-nukes/)

Arguably, the biggest impact of Fukushima on the nuclear debate, ironically, has been to force a growing number of pro-nuclear environmentalists out of the closet, including us. The reaction to the accident by anti-nuclear campaigners and many Western publics put a fine point on the gross misperception of risk that informs so much anti-nuclear fear. Nuclear remains the only proven technology capable of reliably generating zero-carbon energy at a scale that can have any impact on global warming. Climate change -- and, for that matter, the enormous present-day health risks associated with burning coal, oil, and gas -- simply dwarf any legitimate risk associated with the operation of nuclear power plants. About 100,000 people die every year due to exposure to air pollutants from the burning of coal. By contrast, about 4,000 people have died from nuclear energy -- ever -- almost entirely due to Chernobyl. But rather than simply lecturing our fellow environmentalists about their misplaced priorities, and how profoundly inadequate present-day renewables are as substitutes for fossil energy, we would do better to take seriously the real obstacles standing in the way of a serious nuclear renaissance. Many of these obstacles have nothing to do with the fear-mongering of the anti-nuclear movement or, for that matter, the regulatory hurdles imposed by the U.S. Nuclear Regulatory Commission and similar agencies around the world. As long as nuclear technology is characterized by enormous upfront capital costs, it is likely to remain just a hedge against overdependence on lower-cost coal and gas, not the wholesale replacement it needs to be to make a serious dent in climate change. Developing countries need large plants capable of bringing large amounts of new power to their fast-growing economies. But they also need power to be cheap. So long as coal remains the cheapest source of electricity in the developing world, it is likely to remain king. The most worrying threat to the future of nuclear isn't the political fallout from Fukushima -- it's economic reality. Even as new nuclear plants are built in the developing world, old plants are being retired in the developed world. For example, Germany's plan to phase-out nuclear simply relies on allowing existing plants to be shut down when they reach the ends of their lifetime. Given the size and cost of new conventional plants today, those plants are unlikely to be replaced with new ones. As such, the combined political and economic constraints associated with current nuclear energy technologies mean that nuclear energy's share of global energy generation is unlikely to grow in the coming decades, as global energy demand is likely to increase faster than new plants can be deployed. To move the needle on nuclear energy to the point that it might actually be capable of displacing fossil fuels, we'll need new nuclear technologies that are cheaper and smaller. Today, there are a range of nascent, smaller nuclear power plant designs, some of them modifications of the current light-water reactor technologies used on submarines, and others, like thorium fuel and fast breeder reactors, which are based on entirely different nuclear fission technologies. Smaller, modular reactors can be built much faster and cheaper than traditional large-scale nuclear power plants. Next-generation nuclear reactors are designed to be incapable of melting down, produce drastically less radioactive waste, make it very difficult or impossible to produce weapons grade material, use less water, and require less maintenance. Most of these designs still face substantial technical hurdles before they will be ready for commercial demonstration. That means a great deal of research and innovation will be necessary to make these next generation plants viable and capable of displacing coal and gas. The United States could be a leader on developing these technologies, but unfortunately U.S. nuclear policy remains mostly stuck in the past. Rather than creating new solutions, efforts to restart the U.S. nuclear industry have mostly focused on encouraging utilities to build the next generation of large, light-water reactors with loan guarantees and various other subsidies and regulatory fixes. With a few exceptions, this is largely true elsewhere around the world as well. Nuclear has enjoyed bipartisan support in Congress for more than 60 years, but the enthusiasm is running out. The Obama administration deserves credit for authorizing funding for two small modular reactors, which will be built at the Savannah River site in South Carolina. But a much more sweeping reform of U.S. nuclear energy policy is required. At present, the Nuclear Regulatory Commission has little institutional knowledge of anything other than light-water reactors and virtually no capability to review or regulate alternative designs. This affects nuclear innovation in other countries as well, since the NRC remains, despite its many critics, the global gold standard for thorough regulation of nuclear energy. Most other countries follow the NRC's lead when it comes to establishing new technical and operational standards for the design, construction, and operation of nuclear plants. What's needed now is a new national commitment to the development, testing, demonstration, and early stage commercialization of a broad range of new nuclear technologies -- from much smaller light-water reactors to next generation ones -- in search of a few designs that can be mass produced and deployed at a significantly lower cost than current designs. This will require both greater public support for nuclear innovation and an entirely different regulatory framework to review and approve new commercial designs. In the meantime, developing countries will continue to build traditional, large nuclear power plants. But time is of the essence. With the lion's share of future carbon emissions coming from those emerging economic powerhouses, the need to develop smaller and cheaper designs that can scale faster is all the more important. A true nuclear renaissance can't happen overnight. And it won't happen so long as large and expensive light-water reactors remain our only option. But in the end, **there is no credible path to mitigating climate change without a massive global expansion of nuclear energy**. If you care about climate change, nothing is more important than developing the nuclear technologies we will need to get that job done.

**The impact of warming is greater than all others. No humans will survive.**

**Brandenberg 99** (John & Monica Paxson, Visiting Prof. Researcher @ Florida Space Institute, Physicist Ph.D., Science Writer, Dead Mars Dying Earth, Pg 232-233)

The ozone hole expands, driven by a monstrous synergy with global warming that puts more catalytic ice crystals into the stratosphere, but this affects the far north and south and not the major nations’ heartlands. The seas rise, the tropics roast but the media networks no longer cover it. The Amazon rainforest becomes the Amazon desert. Oxygen levels fall, but profits rise for those who can provide it in bottles. An equatorial high-pressure zone forms, forcing drought in central Africa and Brazil, the Nile dries up and the monsoons fail. Then inevitably, at some unlucky point in time, a major unexpected event occurs—a major volcanic eruption, a sudden and dramatic shift in ocean circulation or a large asteroid impact (those who think freakish accidents do not occur have paid little attention to life or Mars), or a nuclear war that starts between Pakistan and India and escalates to involve China and Russia . . . Suddenly the gradual climb in global temperatures goes on a mad excursion as the oceans warm and release large amounts of dissolved carbon dioxide from their lower depths into the atmosphere. Oxygen levels go down precipitously as oxygen replaces lost oceanic carbon dioxide. Asthma cases double and then double again. Now a third of the world fears breathing. As the oceans dump carbon dioxide, the greenhouse effect increases, which further warms the oceans, causing them to dump even more carbon. Because of the heat, plants die and burn in enormous fires, which release more carbon dioxide, and the oceans evaporate, adding more water vapor to the greenhouse. Soon, we are in what is termed a runaway greenhouse effect, as happened to Venus eons ago. The last two surviving scientists inevitably argue, one telling the other, “See! I told you the missing sink was in the ocean!” Earth, as we know it, dies. After this Venusian excursion in temperatures, the oxygen disappears into the soil, the oceans evaporate and are lost and the dead Earth loses its ozone layer completely. Earth is too far from the Sun for it to be the second Venus for long. Its atmosphere is slowly lost—as is its water—because of ultraviolet bombardment breaking up all the molecules apart from carbon dioxide. As the atmosphere becomes thin, the Earth becomes colder. For a short while temperatures are nearly normal, but the ultraviolet sears any life that tries to make a comeback. The carbon dioxide thins out to form a thin veneer with a few wispy clouds and dust devils. Earth becomes the second Mars—red, desolate, with perhaps a few hardy microbes surviving.

**The plan results in global SMR exports – massively reduces emissions.**

**Rosner 11** (Robert – Past Director of the Argonne National Laboratory, The William E. Wrather Distinguished Service Professor @ the Departments of Astronomy and Astrophysics and Physics, Enrico Fermi Institute, and the College, Senior Fellow @ the Computation Institute (CI), Stephen Goldberg – Special assistant to the director at Argonne National Laboratory, *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, Technical Paper, November 2011)

As stated earlier, SMRs have the potential to achieve significant greenhouse gas emission reductions. They could provide alternative baseload power generation to facilitate the retirement of older, smaller, and less efficient coal generation plants that would, otherwise, not be good candidates for retrofitting carbon capture and storage technology. They could be deployed in regions of the U.S. and the world that have less potential for other forms of carbon-free electricity, such as solar or wind energy. There may be technical or market constraints, such as projected electricity demand growth and transmission capacity, which would support SMR deployment but not GW-scale LWRs. From the on-shore manufacturing perspective, a key point is that the manufacturing base needed for SMRs can be developed domestically. Thus, while the large commercial LWR industry is seeking to transplant portions of its supply chain from current foreign sources to the U.S., the SMR industry offers the potential to establish a large domestic manufacturing base building upon already existing U.S. manufacturing infrastructure and capability, including the Naval shipbuilding and underutilized domestic nuclear component and equipment plants. The study team learned that a number of sustainable domestic jobs could be created – that is, the full panoply of design, manufacturing, supplier, and construction activities – if the U.S. can establish itself as a credible and substantial designer and manufacturer of SMRs. While many SMR technologies are being studied around the world, a strong U.S. commercialization program can enable U.S. industry to be first to market SMRs, thereby serving as a fulcrum for export growth as well as a lever in influencing international decisions on deploying both nuclear reactor and nuclear fuel cycle technology. A viable U.S.-centric SMR industry would enable the U.S. to recapture technological leadership in commercial nuclear technology, which has been lost to suppliers in France, Japan, Korea, Russia, and, now rapidly emerging, China.

### Solvency

**Plan --- The United States federal government should obtain, through alternate financing, electricity from small modular reactors for military instillations in the United States and reduce its relevant licensing restrictions on small modular reactors.**

**Military action is necessary---it shapes technology development and overcomes market failures---that's key to commercialization.**

**Andres 11** (\*Richard B. – Professor of National Security Strategy at the National War College and a Senior Fellow and Energy and Environmental Security and Policy Chair in the Center for Strategic Research, Institute for National Strategic Studies, at the National Defense University, \*\*Hanna L. Breetz – Doctoral candidate in the Department of Political Science at The Massachusetts Institute of Technology, *Small Nuclear Reactors for Military Installations: Capabilities, Costs, and Technological Implications*, Strategic Forum, National Defense University, Institute for National Strategic Studies, February 2011, http://www.ndu.edu/press/lib/pdf/StrForum/SF-262.pdf)

DoD as first Mover Thus far, this paper has reviewed two of DOD’s most pressing energy vulnerabilities—grid insecurity and fuel convoys—and explored how they could be addressed by small reactors. We acknowledge that there are many un- certainties and risks associated with these reactors. On the other hand, failing to pursue these technologies raises its own set of risks for DOD, which we review in this section: first, small reactors may fail to be commercialized in the United States; second, the designs that get locked in by the private market may not be optimal for DOD’s needs; and third, expertise on small reactors may become concentrated in foreign countries. By taking an early “first mover” role in the small reactor market, DOD could mitigate these risks and secure the long-term availability and appropriateness of these technologies for U.S. military applications. The “Valley of Death.” Given the promise that small reactors hold for military installations and mo- bility, DOD has a compelling interest in ensuring that they make the leap from paper to production. How- ever, if DOD does not provide an initial demonstration and market, there is a chance that the U.S. small reactor industry may never get off the ground. The leap from the laboratory to the marketplace is so difficult to bridge that it is widely referred to as the “Valley of Death.” Many promising technologies are never commercialized due to a **variety of market failures**— including technical and financial uncertainties, information asymmetries, capital market imperfections, transaction costs, and environmental and security externalities—that impede financing and early adoption and can lock innovative technologies **out of the marketplace**.28 In such cases, the Government can help a worthy technology to bridge the Valley of Death by accepting the first mover costs and demonstrating the technology’s scientific and economic viability.29 Historically, nuclear power has been “the **most clear-cut example** . . . of an important general-purpose technology that in the absence of military and defense-related procurement would not have been developed at all.”30 Government involvement is likely to be **crucial** for innovative, next-generation nuclear technology as well. Despite the widespread revival of interest in nu- clear energy, Daniel Ingersoll has argued that radically innovative designs face an uphill battle, as “the high capital cost of nuclear plants and the painful lessons learned during the first nuclear era have created a prevailing fear of first-of-a-kind designs.”31 In addition, **M**assachusetts **I**nstitute of **T**echnology reports on the Future of Nuclear Power called for the Government to provide modest “first mover” assistance to the private sector due to several barriers that have hindered the nu- clear renaissance, such as securing high up-front costs of site-banking, gaining NRC certification for new technologies, and demonstrating technical viability.32 It is possible, of course, that small reactors will achieve commercialization without DOD assistance. As discussed above, they have garnered increasing attention in the energy community. Several analysts have even ar- gued that small reactors could play a key role in the sec- ond nuclear era, given that they may be the only reactors within the means of many U.S. utilities and developing countries.33 However, given the tremendous regulatory hurdles and technical and financial uncertainties, it appears far from certain that the U.S. small reactor industry will take off. If DOD wants to ensure that small reactors are available in the future, then it should **pursue a leadership** role now. Technological Lock-in. A second risk is that if small reactors do reach the market without DOD assistance, the designs that succeed may not be optimal for DOD’s applications. Due to a variety of positive feedback and increasing returns to adoption (including dem- onstration effects, technological interdependence, net- work and learning effects, and economies of scale), the designs that are initially developed can become “locked in.”34 Competing designs—even if they are superior in some respects or better for certain market segments— can face barriers to entry that lock them out of the mar- ket. If DOD wants to ensure that its preferred designs are **not locked out**, then it should take a first mover role on small reactors. It is far too early to gauge whether the private market and DOD have aligned interests in reactor de- signs. On one hand, Matthew Bunn and Martin Ma- lin argue that what the world needs is cheaper, safer, more secure, and more proliferation-resistant nuclear reactors; presumably, many of the same broad qualities would be favored by DOD.35 There are many varied market niches that could be filled by small reactors, because there are many different applications and set- tings in which they can be used, and it is quite pos- sible that some of those niches will be compatible with DOD’s interests.36 On the other hand, DOD may have specific needs (transportability, for instance) that would not be a high priority for any other market segment. Moreover, while DOD has unique technical and **organizational capabilities** that could enable it to pursue more radically innovative reactor lines, DOE has indicated that it will focus its initial small reactor deployment efforts on LWR designs.37 If DOD wants to ensure that its preferred reactors are developed and available in the future, it should take a leadership role now. Taking a first mover role does not necessarily mean that DOD would be “**picking a winner**” among small reactors, as the market will probably pursue multiple types of small reactors. Nevertheless, DOD leadership would likely have a profound effect on the industry’s timeline and trajectory.

**Alternative financing arrangements uniquely reduces costs and spur commercial spillover.**

**Fitzpatrick 11** (Ryan Fitzpatrick, Senior Policy Advisor for Clean Energy at Third Way, Josh Freed, Vice President for Clean Energy at Third Way, and Mieke Eoyan, Director for National Security at Third Way, *Fighting for Innovation: How DoD Can Advance CleanEnergy Technology... And Why It Has To*, June 2011, content.thirdway.org/publications/414/Third\_Way\_Idea\_Brief\_-\_Fighting\_for\_Innovation.pdf)

The DoD has over $400 billion in annual purchasing power, which meansthe Pentagon could provide a sizeable market for new technologies. This can increase a technology’s scale of production, bringing down costs, and making the product more likely to successfully reach commercial markets. Unfortunately, many potentially significant clean energy innovations never get to the marketplace, due to a lack of capital during the development and demonstration stages. As a result, technologies that could help the military meet its clean energy security and cost goals are being abandoned or co-opted by competetors like China before they are commercially viable here in the U.S. By focusing its purchasing power on innovative products that will help meet its energy goals, DoD can provide more secure and cost-effective energy to the military—producing tremendous long-term savings, while also bringing potentially revolutionary technologies to the public. Currently, many of these technologies are passed over during the procurement process because of higher upfront costs—even if these technologies can reduce life-cycle costs to DoD. The Department has only recently begun to consider life-cycle costs and the “fullyburdened cost of fuel” (FBCF) when making acquisition decisions. However, initial reports from within DoD suggest that the methodology for determining the actual FBCF needs to be refined and made more consistent before it can be successfully used in the acquisition process.32 The Department should fast-track this process to better maximize taxpayer dollars. Congressional appropriators— and the Congressional Budget Office—should also recognize the savings that can be achieved by procuring advanced technologies to promote DoD’s energy goals, even if these procurements come with higher upfront costs. Even if the Pentagon makes procurement of emerging clean energy technologies a higher priority, it still faces real roadblocks in developing relationships with the companies that make them. Many clean energy innovations are developed by small businesses or companies that have no previous experience working with military procurement officers. Conversely, many procurement officers do not know the clean energy sector and are not incentivized to develop relationships with emerging clean energy companies. Given the stakes in developing domestic technologies that would help reduce costs and improve mission success, the Pentagon should develop a program to encourage a better flow of information between procurement officers and clean energy companies—especially small businesses. Leverage Savings From Efficiency and Alternative Financing to Pay for Innovation. In an age of government-wide austerity and tight Pentagon budgets, current congressional appropriations are simply not sufficient to fund clean energy innovation. Until Congress decides to direct additional resources for this purpose, the Defense Department must leverage the money and other tools it already has to help develop clean energy. This can take two forms: repurposing money that was saved through energy efficiency programs for innovation and using alternative methods of financing to reduce the cost to the Pentagon of deploying clean energy. For several decades the military has made modest use alternative financing mechanisms to fund clean energy and efficiency projects when appropriated funds were insufficient. In a 2010 report, GAO found that while only 18% of renewable energy projects on DoD lands used alternative financing, these projects account for 86% of all renewable energy produced on the Department’s property.33 This indicates that alternative financing can be particularly helpful to DoD in terms of bringing larger and more expensive projects to fruition. One advanced financing tool available to DoD is the energy savings performance contract (ESPC). These agreements allow DoD to contract a private firm to make upgrades to a building or other facility that result in energy savings, reducing overall energy costs without appropriated funds. The firm finances the cost, maintenance and operation of these upgrades and recovers a profit over the life of the contract. While mobile applications consume 75% of the Department’s energy,34 DoD is only authorized to enter an ESPC for energy improvements done at stationary sites. As such, Congress should allow DoD to conduct pilot programs in which ESPCs are used to enhance mobile components like aircraft and vehicle engines. This could accelerate the needed replacement or updating of aging equipment and a significant reduction of energy with no upfront cost. To maximize the potential benefits of ESPCs, DoD should work with the Department of Energy to develop additional training and best practices to ensure that terms are carefully negotiated and provide benefits for the federal government throughout the term of the contract.35 This effort could possibly be achieved through the existing memorandum of understanding between these two departments.36 The Pentagon should also consider using any long-term savings realized by these contracts for other energy purposes, including the promotion of innovative technologies to further reduce demand or increase general energy security. In addition to ESPCs, the Pentagon also can enter into extended agreements with utilities to use DoD land to generate electricity, or for the long-term purchase of energy. These innovative financing mechanisms, known respectively as enhanced use leases (EULs) and power purchase agreements (PPAs), provide a **valuable degree of certainty** to third party generators. In exchange, the Department can leverage its **existing resources**—either its land or its purchasing power—to negotiate lower electricity rates and dedicated sources of locallyproduced power with its utility partners. DoD has unique authority among federal agencies to enter extended 30-year PPAs, but only for geothermal energy projects and only with direct approval from the Secretary of Defense. Again, limiting incentives for clean energy generation to just geothermal power inhibits the tremendous potential of other clean energy sources to help meet DoD’s energy goals. Congress should consider opening this incentive up to other forms of clean energy generation, including the production of advanced fuels. Also, given procurement officials’ lack of familiarity with these extended agreements and the cumbersome nature of such a high-level approval process, the unique authority to enter into extended 30-year PPAs is very rarely used.37 DoD should provide officials with additional policy guidance for using extended PPAs and Congress should simplify the process by allowing the secretary of each service to approve these contracts. Congress should also investigate options for encouraging regulated utility markets to permit PPA use by DoD. Finally, when entering these agreements, the Department should make every effort to promote the use of innovative and fledgling technologies in the terms of its EULs and PPAs. CON C L U S ION The Defense Department is in a unique position to foster and deploy innovation in clean energy technologies. This has two enormous benefits for our military: it will make our troops and our facilities more secure and it will reduce the amount of money the Pentagon spends on energy, freeing it up for other mission critical needs. If the right steps are taken by Congress and the Pentagon, the military will be able to put its resources to work developing technologies that will lead to a stronger fighting force, a safer nation, and a critical emerging sector of the American economy. The Defense Department has helped give birth to technologies and new economic sectors dozens of times before. For its own sake and the sake of the economy, it should make clean energy innovation its newest priority.

**Regulatory reform is necessary---it sends a signal to investor that overcomes current barriers.**

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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. Why SMRs? Small modular reactors share many of the attractive qualities of large reactors, such as providing abundant emissions-free power, while adding new features that could make them more appropriate for certain applications, such as providing power to rural communities or for dedicated industrial use. SMRs are not yet positioned to take the place of traditional large LWRs, but they represent an important growth area for the commercial nuclear industry. Indeed, should the promise of small modular reactors be realized, the technology could transform the nuclear industry. That is because these attributes would potentially mitigate some of the financial and regulatory problems that nuclear energy has recently faced. SMRs potentially cost less (at least in up-front capital), are more mobile and multifunctional, provide competition, and can largely be produced by existing domestic infrastructure. Lower Costs Up Front. Large reactors are very expensive to license and construct and require massive up-front capital investments to begin a project. Small reactors, while providing far less power than large reactors, can be built in modules and thus be paid for over time. For example, estimates for larger reactors range from $6 billion to $10 billion and must be financed all at once. The Babcock & Wilcox Company’s modular mPower reactors, alternatively, can be purchased in increments of 125 megawatts (MW), which would allow costs to be spread out over time. Though cost estimates are not yet available for the mPower reactor, its designers have stated that they will be competitive. This should not be used as a reason to refrain from building larger, 1,000-plus MW reactors. Each utility will have its own set of variables that it must consider in choosing a reactor technology, but given that one of the primary justifications for government subsidies is that the high costs of large reactors puts unacceptable strain on utility balance sheets, an option that spreads capital outlays over time should be attractive. Safe Installation in Diverse Locations. Some designs are small enough to produce power for as few as 20,000 homes. One such reactor, Hyperion Power’s HPM (Hyperion Power Module) offers 25 MW of electricity for an advertised cost of $50 million per unit. This makes the HPM a potential power solution for isolated communities or small cities.[1] The Alaskan town of Galena, for example, is planning to power its community with a small reactor designed by Toshiba, while Fairbanks is looking into a small plant constructed by Hyperion.[2] In addition, Western Troy Capital Resources has stated that it will form a private corporation to provide electric power from small reactors for remote locations in Canada.[3] Public utility officials in Grays Harbor, Washington, have spoken with the NuScale Power company about powering the community with eight small nuclear plants;[4] and Hyperion Power has reported a high level of interest in small nuclear reactor designs from islands around the world.[5] Using a small nuclear reactor could cut electricity costs in isolated areas since there would be no need for expensive transmission lines to carry power to remote locations.[6] SMRs could also potentially be integrated into existing energy infrastructure. SMRs could be built into old coal plants, for instance. The reactors would replace the coal boilers and be hooked into the existing turbines and distribution lines. According to the Nuclear Regulatory Commission, these modifications could be completed safely since small reactors will likely be easier to control during times of malfunction.[7] Multi-functionality. SMRs can be used in a variety of applications that have substantial power and heat requirements. The chemical and plastics industries and oil refineries all use massive amounts of natural gas to fuel their operations. Similarly, small reactors could produce the heat needed to extract oil from tar sands, which currently requires large amounts of natural gas. While affordable today, natural gas prices vary significantly over time, so the long-term predictable pricing that nuclear provides could be very attractive. SMRs may also provide a practical solution for desalination plants (which require large amounts of electricity) that can bring fresh water to parts of the world where such supplies are depleting.[8] Perhaps most important, is that SMRs have the potential to bring power and electricity to the 1.6 billion people in the world today that have no access to electricity, and to the 2.4 billion that rely on biomass, such as wood, agricultural residue, and dung for cooking and heating.[9] Competition. While competition among large nuclear-reactor technologies currently exists, small reactors will add a new dimension to nuclear-reactor competition. Multiple small technology designs are set to emerge on the market. Not only will competition among small reactors create a robust market, it will also provide an additional incentive for large reactors to improve. If smaller reactors begin to capture a share of the nuclear market and the energy market at large, it will drive innovation and ultimately lower prices for both new and existing technologies. Domestic Production. Although the nuclear industry necessarily shrank to coincide with decreased demand, much of the domestic infrastructure remains in place today and could support the expansion of small-reactor technologies. Although the industrial and intellectual base has declined over the past three decades, forging production, heavy manufacturing, specialized piping, mining, fuel services, and skilled labor could all be found in the United States. Lehigh Heavy Forge Corporation in Bethlehem, Pennsylvania, could build the forges while Babcock & Wilcox could provide the heavy nuclear components, for instance. AREVA/Northrop Grumman Shipbuilding broke ground on a heavy components manufacturing facility last June.[10] Further, a number of companies are expanding manufacturing, engineering, and uranium enrichment capabilities—all in the United States. If SMRs are so great, where is the construction? While some designs are closer to market introduction than others, the fact is that America’s **regulatory** and policy environment is not sufficient to support a robust expansion of existing nuclear technologies, much less new ones. New reactor designs are difficult to license efficiently, and the lack of a sustainable nuclear waste management policy causes significant risk to private investment. Many politicians are attempting to mitigate these market challenges by offering subsidies, such as loan guarantees. While this approach still enjoys broad support in Congress and industry, the reality is that it has not worked. Despite a lavish suite of subsidies offered in the Energy Policy Act of 2005, including loan guarantees, insurance against government delays, and production tax credits, no new reactors have been permitted, much less constructed. These subsidies are in addition to existing technology development cost-sharing programs that have been in place for years and defer significant research and development costs from industry to the taxpayer. The problem with this approach is that it ignores the larger systemic problems that create the unstable marketplace to begin with. These systemic problems generally fall into three categories: Licensing. The Nuclear Regulatory Commission (NRC) is ill prepared to build the regulatory framework for new reactor technologies, and no reactor can be offered commercially without an NRC license. In a September 2009 interview, former NRC chairman Dale E. Klein said that small nuclear reactors pose a dilemma for the NRC because the commission is uneasy with new and unproven technologies and feels more comfortable with large light water reactors, which have been in operation for years and has a long safety record.[11] The result is that enthusiasm for building non-light-water SMRs is generally squashed at the NRC as potential customers realize that there is little chance that the NRC will permit the project within a timeframe that would promote near-term investment. So, regardless of which attributes an SMR might bring to the market, the **regulatory risk** is such that real progress on commercialization is difficult to attain. This then leaves large light water reactors, and to a lesser extent, small ones, as the least risky option, which pushes potential customers toward that technology, which then undermines long-term progress, competition, and innovation. Nuclear Waste Management. The lack of a sustainable nuclear waste management solution is perhaps the greatest obstacle to a broad expansion of U.S. nuclear power. The federal government has failed to meet its obligations under the 1982 Nuclear Waste Policy Act, as amended, to begin collecting nuclear waste for disposal in Yucca Mountain. The Obama Administration’s attempts to shutter the existing program to put waste in Yucca Mountain without having a backup plan has worsened the situation. This outcome was predictable because the current program is based on the flawed premise that the federal government is the appropriate entity to manage nuclear waste. Under the current system, waste producers are able to largely ignore waste management because the federal government is responsible. The key to a sustainable waste management policy is to directly connect financial responsibility for waste management to waste production. This will increase demand for more waste-efficient reactor technologies and drive innovation on waste-management technologies, such as reprocessing. Because SMRs consume fuel and produce waste differently than LWRs, they could contribute greatly to an economically efficient and sustainable nuclear waste management strategy. Government Intervention. 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. How to Fix a Broken System At the Global Nuclear Renaissance Summit on July 24, 2008, then-NRC chairman Dale Klein said that a nuclear renaissance with regard to small reactors will take “decades to unfold.”[12] If Members of Congress and government agencies do not reform their current approach to nuclear energy, this will most certainly be the case. However, a new, market-based approach could lead to a different outcome. Instead of relying on the policies of the past, Congress, the Department of Energy, and the NRC should pursue a new, 21st-century model for small and alternative reactor technologies by doing the following: Reject additional loan guarantees. Loan guarantee proponents argue that high up-front costs of new large reactors make them unaffordable without loan guarantees. Presumably, then, a smaller, less expensive modular option would be very attractive to private investors even without government intervention. But loan guarantees undermine this advantage by subsidizing the capital costs and risk associated with large reactors. A small reactor industry without loan guarantees would also provide competition and downward price pressure on large light water reactors. At a minimum, Congress should limit guarantees to no more than two plants of any reactor design and limit to two-thirds the amount of any expanded loan guarantee program that can support a single technology. Such eligibility limits will prevent support from going only to a single basic technology, such as large light water reactors.[13] Avoid subsidies. Subsidies do not work if the objective is a diverse and economically sustainable nuclear industry. Despite continued attempts to subsidize the nuclear industry into success, the evidence demonstrates that such efforts invariably fail. The nuclear industry’s success stories are rooted in the free market. Two examples include the efficiency and low costs of today’s existing plants, and the emergence of a private uranium enrichment industry. Government intervention is the problem, as illustrated by the government’s inability to meet its nuclear waste disposal obligations. Build expertise at the Nuclear Regulatory Commission. The NRC is built to regulate large light water reactors. It simply does not have the regulatory capability and resources to efficiently regulate other technologies, and building that expertise takes time. Helping the NRC to develop that expertise now would help bring new technologies into the marketplace more smoothly. Congress should direct and resource the NRC to develop additional broad expertise for liquid metal-cooled, fast reactors and high-temperature, gas-cooled reactors. With its existing expertise in light water technology, this additional expertise would position the NRC to effectively regulate an emerging SMR industry. Establish a new licensing pathway. The current licensing pathway relies on reactor customers to drive the regulatory process. But absent an efficient and predictable regulatory pathway, few customers will pursue these reactor technologies. The problem is that the legal, regulatory, and policy apparatus is built to support large light water reactors, effectively discriminating against other technologies. Establishing an alternative **licensing pathway** that takes the unique attributes of small reactors into consideration could help build the necessary regulatory support on which commercialization ultimately depends.[14] Resolve staffing, security, construction criteria, and fee-structure issues by December 31, 2011. The similarity of U.S. reactors has meant that the NRC could establish a common fee structure and many general regulatory guidelines for areas, such as staffing levels, security requirements, and construction criteria. But these regulations are inappropriate for many SMR designs that often have smaller staff requirements, unique control room specifications, diverse security requirements, and that employ off-site construction techniques. Subjecting SMRs to regulations built for large light water reactors would add cost and result in less effective regulation. The NRC has acknowledged the need for this to be resolved and has committed to doing so, including developing the budget requirements to achieve it. It has not committed to a specific timeline.[15] Congress should demand that these issues be resolved by the end of 2011.

**Current restrictions make SMR development impossible – plan’s necessary.**

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Most SMRs are not merely scaled down versions of large-scale reactors, but rather new in design, siting, construction, operation and decommissioning. Appropriately, the legal and regulatory issues these units will generate will not merely be scaled down versions of the issues faced by their much larger brethren. The NRC’s new reactor licensing regulations in 10 C.F.R. Part 52 are designed to provide a more streamlined process for new generation large-scale reactors. Some facets of this new process will be equally advantageous to SMRs, while others will range from awkward to nearly unworkable when applied to the licensing, construction, and operation of SMRs. Creative navigation of the existing regulations by both the NRC and licensees will solve some problems, but others can be solved only by amending the regulations. ¶ For example, the NRC’s annual fee to operate each licensed nuclear reactor is $4.5M under 10 C.F.R. Part 171, which would likely pose problems for the operation of many SMRs. In March 2009, the NRC published an advanced notice of proposed rulemaking that contemplates a variable fee structure based on thermal limits for each power reactor. 74 Fed. Reg. 12,735 (March 25, 2009). This or a similar **change will** **be necessary to make SMR’s financially viable**. Likewise, the size of the decommissioning fund, insurance, and other liability issues could make SMRs uneconomical if not tailored to the smaller units. Moreover, the form of the combined operating and construction license (COL) must take into consideration that certain sites are likely to start out with a single SMR but later add multiple small reactors as needs evolve. Flexibility is one of the SMR’s primary benefits, and the governing regulatory structure must allow (and preferably embrace) that flexibility, while simultaneously ensuring the safety of these reactors. Another issue to consider is that the current Emergency Planning Programs require a 10-mile Emergency Planning Zone (EPZ) for all reactors, based on the size of existing large-scale reactors. Emergency Plans, 10 C.F.R. § 50.47 (2009). This requirement is almost certainly unjustifiable for a SMR. These smaller reactors are much less powerful, and in many cases the actual containment/reactor system will be placed underground.

**SMRs are cost-effective, safe and can come online in 3 years**

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Small Modular Reactors¶ One way of getting around many of these problems is through the development of small modular reactors (SMR). These are reactors capable of generating about 300 megawatts of power or less, which is enough to run 45,000 US homes. Though small, SMRs are proper reactors. They are quite different from the radio-thermal generators (RTG) used in spacecraft and remote lighthouses in Siberia. Nuclear reactors such as SMRs use controlled nuclear fission to generate power while RTGs use natural radioactive decay to power a relatively simple thermoelectric generator that can only produce, at most, about two kilowatts.¶ In terms of power, RTGs are the equivalent of batteries while small nuclear reactors are only "small" when compared to conventional reactors. They are hardly the sort that you would keep in the garage. In reality, SMR power plants would cover the area of a small shopping mall. Still, such an installation is not very large as power plants go and a reactor that only produces 300 megawatts may not seem worth the investment, but the US Department of Energy is offering US$452 million in matching grants to develop SMRs and private investors like the Bill Gates Foundation and the company of Babcock and Wilcox are putting up money for their own modular reactor projects.¶ The 60-year old breakthrough¶ One reason for government and private industry to take an interest in SMRs is that they've been successfully employed for much longer than most people realize. In fact, hundreds have been steaming around the world inside the hulls of nuclear submarines and other warships for sixty years. They've also been used in merchant ships, icebreakers and as research and medical isotope reactors at universities. There was even one installed in the Antarctic at McMurdo Station from 1962 to 1972. Now they're being considered for domestic use.¶ The case for SMRs¶ **SMRs have a number of advantages over conventional reactors**. For one thing, **SMRs are cheaper** to construct and run. This makes them very attractive to poorer, energy-starved countries; small, growing communities that don't require a full-scale plant; and remote locations such as mines or desalination plants. Part of the reason for this is simply that the reactors are smaller. Another is that, not needing to be custom designed in each case, the reactors can be standardized and some types built in factories that are able to employ economies of scale. The factory-built aspect is also important because a factory is more efficient than on-site construction by as much as **eight to one in terms of building time**. Factory construction also allows SMRs to be built, delivered to the site, and then returned to the factory for dismantling at the end of their service lives - eliminating a major problem with old conventional reactors, i.e. how to dispose of them.¶ SMRs also enjoy a good deal of design flexibility. Conventional reactors are usually cooled by water - a great deal of water - which means that the reactors need to be situated near rivers or coastlines**. SMRs, on the other hand, can be cooled by air, gas, low-melting point metals or salt**. This means that SMRs can be placed in remote, inland areas where it isn't possible to site conventional reactors.¶ Safety¶ This cooling system is often passive. In other words, it relies more on the natural circulation of the cooling medium within the reactor's containment flask than on pumps**. This passive cooling is one of the ways that SMRs can improve safety**. Because modular reactors are smaller than conventional ones, they contain less fuel. This means that there's less of a mass to be affected if an accident occurs. If one does happen, there's less radioactive material that can be released into the environment and makes it easier to design emergency systems. Since they are smaller and use less fuel, they are easier to cool effectively, which greatly reduces the likelihood of a catastrophic accident or meltdown in the first place.¶ This also means that accidents proceed much slower in modular reactors than in conventional ones. Where the latter need accident responses in a matter of hours or minutes, SMRs can be responded to in hours or days, **which reduces the chances of an accident resulting in major damage** to the reactor elements.¶ The SMR designs that reject water cooling in favor of gas, metal or salt have their own safety advantages. Unlike water-cooled reactors, these media operate at a lower pressure. One of the hazards of water cooling is that a cracked pipe or a damaged seal can blow radioactive gases out like anti-freeze out of an overheated car radiator. With low-pressure media, there's less force to push gases out and there's less stress placed on the containment vessel. It also eliminates one of the frightening episodes of the Fukushima accident where the water in the vessel broke down into hydrogen and oxygen and then exploded.¶ Another advantage of modular design is that some SMRs are small enough to be installed below ground. That is cheaper, faster to construct and less invasive than building a reinforced concrete containment dome. There is also the point that putting a reactor in the ground makes it **less vulnerable to earthquakes**. Underground installations make modular reactors easier to secure and install in a much smaller footprint. This makes **SMRs particularly attractive to military customers who need to build power plants for bases quickly**. Underground installation also enhances security with fewer sophisticated systems needed, which also helps bring down costs.¶ **SMRs can help with** proliferation, **nuclear waste and fuel supply issues** because, while some modular reactors are based on conventional pressurized water reactors and burn enhanced uranium, others use less conventional fuels. Some, for example, can generate power from what is now regarded as "waste", burning **depleted uranium** and plutonium left over from conventional reactors. Depleted uranium is basically U-238 from which the fissible U-235 has been consumed. It's also much more abundant in nature than U-235, which has the potential of providing the world with energy for thousands of years. Other reactor designs don't even use uranium. Instead, they use thorium. This fuel is also incredibly abundant, is easy to process for use as fuel and has the added bonus of being utterly useless for making weapons, so it can provide power even to areas where security concerns have been raised.¶ But there's still the sticking point that modular reactors are, by definition, small. That may be fine for a submarine or the South Pole, but what about places that need more? Is the alternative conventional nuclear plants? It turns out that the answer is no. Modular reactors don't need to be used singly. They can be set up in batteries of five or six or even more, providing as much power as an area needs. And if one unit needs to be taken off line for repairs or even replacement, it needn't interfere with the operation of the others.

## \*\*\* 2AC

### 2AC—Topicality

**Financial incentives induce production using cash – that includes power purchasing**

**Webb 93** – lecturer in the Faculty of Law at the University of Ottawa (Kernaghan, “Thumbs, Fingers, and Pushing on String: Legal Accountability in the Use of Federal Financial Incentives”, 31 Alta. L. Rev. 501 (1993) Hein Online)

One of the obstacles to intelligent discussion of this topic is the tremendous **potential for confusion** about what is meant by several of the key terms involved. In the hopes of contributing to the development of a consistent and precise vocabulary applying to this important but understudied area of regulatory activity, various terms are defined below.

In this paper, "**financial incentives**" are taken to mean disbursements 18 of public funds or contingent commitments to individuals and organizations, intended to encourage, support or induce certain behaviors in accordance with express public policy objectives. They take the form of grants, contributions, repayable contributions, loans, loan guarantees and insurance, subsidies, **procurement contracts** and tax expenditures.19 Needless to say, the ability of government to achieve desired behavior may vary with the type of incentive in use: up-front disbursements of funds (such as with contributions and procurement contracts) may put government in a better position to dictate the terms upon which assistance is provided than contingent disbursements such as loan guarantees and insurance. In some cases, the incentive aspects of the funding come from the conditions attached to use of the monies.20 In others, the mere existence of a program providing financial assistance for a particular activity (eg. low interest loans for a nuclear power plant, or a pulp mill) may be taken as government approval of that activity, and in that sense, an incentive to encourage that type of activity has been created.21 Given the wide variety of incentive types, it will not be possible in a paper of this length to provide anything more than a cursory discussion of some of the main incentives used.22 And, needless to say, the comments made herein concerning accountability apply to differing degrees depending upon the type of incentive under consideration.

By **limiting the definition** of financial incentives to initiatives where public funds are either disbursed or contingently committed, a large number of regulatory programs with incentive effects which exist, but in which no money is forthcoming, 23 are excluded from direct examination in this paper. Such programs might be referred to as indirect incentives. Through elimination of indirect incentives from the scope of discussion, the definition of the incentive instrument becomes both more **manageable** and more particular. Nevertheless, it is possible that much of the approach taken here may be usefully applied to these types of indirect incentives as well.24 Also excluded from discussion here are social assistance programs such as welfare and ad hoc industry bailout initiatives because such programs are not designed primarily to encourage behaviors in furtherance of specific public policy objectives. In effect, these programs are assistance, but they are not incentives.

**For means in support of**

**Cambridge Dictionary, 2k**

Cambridge University Press p.334

For – prep. Intended to be given to; having to purpose of because of, as a result of (doing something); instead of, to help; considering (something or someone with reference to things or people as the usually are); in support or relation to (someone or something); in support of or agreement with

**Precision – our definition’s from the DoE**

**Waxman 98 –** Solicitor General of the US (Seth, Brief for the United States in Opposition for the US Supreme Court case HARBERT/LUMMUS AGRIFUELS PROJECTS, ET AL., PETITIONERS v. UNITED STATES OF AMERICA, http://www.justice.gov/osg/briefs/1998/0responses/98-0697.resp.opp.pdf)

2 On November 15, 1986, Keefe was delegated “the authority, with respect to actions valued at $50 million or less, to approve, execute, enter into, modify, administer, closeout, terminate and take any other necessary and appropriate action (collectively, ‘Actions’) with respect to Financial Incentive awards.” Pet. App. 68, 111-112. Citing DOE Order No. 5700.5 (Jan. 12, 1981), the delegation defines “Financial Incentives” as the authorized financial incentive programs of DOE, “including direct loans, loan guarantees, purchase agreements, price supports, guaranteed market agreements and any others which may evolve.” The delegation proceeds to state, “[h]owever, a separate prior written approval of any such action must be given by or concurred in by Keefe to accompany the action.” The delegation also states that its exercise “shall be governed by the rules and regulations of [DOE] and policies and procedures prescribed by the Secretary or his delegate(s).” Pet. App. 111-113.

**No limits explosion – we agree to buy power from SMR’s, not the reactors themselves – solves their weapons laundry list**

**We are the topic - money for energy! Arbitrarily excluding one mechanism is unpredictable**

**Aff ground-last year proves weak mechanisms stink and only purchasing can defeat states**

**Reasonability – competing interpretations causes a race to the bottom – over incentivizes going for T.**

**Not extra topical --- gives them more ground.**

**Uq is a crush – 90% of the field is already reading one mechanism for one-energy source.**

### 2AC—Elections DA

**Romney wins- polls, momentum, swing states**

**Stoddard 10-18**

A.B., associate editor of The Hill. “Obama spinning toward a loss”

President **Obama is losing**. So says the latest Gallup poll, and so do those swelling numbers **in key states** like Wisconsin, Florida, Virginia and Ohio. Democrats say wait, he won the second debate. They are holding their breath, hoping polls next week will show that this week's debate brought the herky-jerk of the campaign back full swing, with Obama back to his September lead in the swing states and poised to win. But with two weeks to go, a sudden surge in voter support for a president as unpopular as this one, in an economy this weak, is simply hard to believe. Conservatives like Karl Rove note that this late in October, no candidate with support higher than 50 percent (see Mitt Romney: Gallup) has ever gone on to lose. Perhaps Obama lost the presidency weeks ago, on Oct. 3, when he sleepwalked and scribbled through the first debate and helped make Romney a new candidate overnight. It was Obama's night to finish Romney off; behind in the polls, even Romney likely woke up that morning thinking it was over. But Obama underestimated the task, the challenger and the electorate — all in 90 minutes. So a win this week was critical but perhaps not decisive. There is no obvious reason for Obama's performance to reverse the course of the campaign and blunt Romney now. And though there is one final debate next week, a back-and-forth on national security and foreign policy isn't likely to make the sale for anyone who still cannot make up his or her mind. Romney is arguing Obama has still failed to articulate a reason, plan or purpose for a second term. He is correct. But Obama has indeed, late in the game, come up with a more forceful defense of his first term, and an argument about the economy growing from the middle out instead of the top down. In addition, Democrats finally did their research and came up with some embarrassing changes in policy positions by Romney to debut at the debates and are cutting new flip-flop ads around the clock. Stunned by the loss of female support the Romney debate surge has cost him, Obama is focusing intently on shoring up the votes of suburban women and giving them binders full of reasons not to buy what Romney is selling. Romney too is running new ads about his abortion flexibility, his support for contraception and the job losses among women in the last four years. He has been fortunate that Obama's campaign and the Twitterverse have ignored his giddy prediction of Tuesday night that "We're going to have to have employers in the new economy, in the economy I'm going to bring to play, that are going to be so anxious to get good workers they're going to be anxious to hire women." A clunker, one could argue, even worse than his comment about the "binder full of women" he compiled to locate qualified women for his Cabinet as governor of Massachusetts. Indeed, though President Obama was deemed the debate winner by numerous snap polls this week, the **polls show just how firm Romney's support has grown**. In every poll he beat Obama by a wide margin on who is stronger on the economy. Obama can expect, even if he wins another debate on Oct. 22, that this will remain a tight race or that Romney will begin to **break away** **at the end.** Obama's September surge resulted from an increase in Democratic enthusiasm, which **is waning**. As Romney has **hardened his support** among Republicans, **he is also** **winning over new voters**, leaving Obama with the task of exciting his base of Latinos, women, African-Americans and young voters. Without enough of them he loses. With less than three weeks to go it's hard to see where he finds that excitement.

**Jobs report thumps**

**Satran 10-19**

Richard Satran Political and economist analyst, , CNBC writer, previously worked for Independent, Thomson Reuters, and Fidelity Investments Education BA, Journalism and History at University of Wisconsin-Madison Richard, writer for US News, “How the Last Word of the Election Goes to the Market”

The first Friday in November looms as the biggest day remaining before the presidential election. **With jobs and the economy the most important** **factors** **in deciding votes**, the monthly **employment** **report due** out **November 2** **could eclipse the** presidential **debates** **and campaign appearances** to come. Its result will key the final points the candidates make as campaigning winds to a close. The numbers alone are important, but the reaction of Wall Street also matters. It marks a very big "public vote," just two trading days before the voting booths open. Despite all the bashing of banks and traders, history shows that a healthy Wall Street helps a sitting President enormously. Weaker jobs data seen as likely. **Economists** say they expect October's employment report to yield **unimpressive data** **after a strong report in September** from the Bureau of Labor Statistics lifted stocks and sent anti-Obama conspiracy theorists, led by former General Electric chief Jack Welch, into overdrive saying the administration must have "cooked the books." Economists scoff at the idea. Still, many say September's figures may have **raised expectations too high** for the upcoming report, and could even lead to a reversal in September's gains. Moody's Analytics has predicted **the jobless rate will push back above 8 percent** the months to come. The recent decline in the unemployment rate to 7.8 percent was seen as a coup for Obama, who came to office in the midst of a severe recession that drove unemployment to double digits for the first time since the early 1980s. But few economists see a recovery to prerecession levels (as low as 3.8 percent in 2000) anytime soon. "Whatever you think about the election or crazy conspiracy theories, you have to look at the September data as an outlier and expect that things will return to the normal, slower growth and higher unemployment rate we've been seeing," says Dan Veru, chief investment officer at Palisade Capital Management in Fort Lee, N.J. If that happens, the November report could **be a late-inning setback for Obama's re-election hopes**. Still, a mild market reaction would surely soften the blow. So far, Wall Street's recovery has helped Obama in a big way. The S&P 500 has risen an impressive 70 percent since the day he took office. That's the third-largest percentage return of any four-year presidential term over the last century. (The S&P stood at 850 on Jan. 20, 2009, when he took office, and hit 1457 as of Thursday's close.) Why jobs matter so much. Nothing seems to matter to investors quite as much as jobs—and that's based on more than just television sound bites and debate points in this year's presidential campaign. The Employment Situation, as the report is officially known, is the most significant monthly economic indicator in part because it is the first major data point investors see. It's also a bread-and-butter concern. Obviously, **nothing hits home harder than a job loss, and its impact ripples** through retail sales, home purchases, and overall confidence. Also critical for markets: Jobs have been the main focus of the Federal Reserve in setting monetary policy, which in turn holds sway over interest rates. The Fed's other job, fighting inflation, has not been a factor in recent years of near-zero increases. The link between jobs data and stock prices is decades old—and its impact can be swift. JPMorgan Asset Management's Michael Cembalist in a recent report cited 13 times when the market has risen by 2 percent or more on the day the employment data was released. A Fed study in 2008 concluded that the jobs data was "the most heavily watched" economic figure. Adding to the drama behind jobs data. The data will be picked apart even more this time. Mitt Romney "has been telling people to watch the 'participation rate' [as an indicator of] the 'real rate of unemployment, which is much higher," says Veru. The Romney argument is that the unemployment figure is artificially low because so many people have dropped out of the employment-seeking total. To be sure, if all of the dropouts figured into the data, the unemployment rate would be higher, economists say. From the other side, Obama has been talking about the steady growth of private-sector job creation. That figure has climbed by an average of 150,000 jobs for 24 straight months—a good performance for any period of job growth, and arguably strong today given historic and enduring lows in consumer confidence following the crisis of 2008. The job market exodus, Obama backers argue, reflects natural causes like the rising rate of retirement of aging baby boomers. When **the data** is released **November 2**, the unemployment rate **will be the "snapshot"** most **Americans carry into the** **voting booth**. **Polls taken after last month's drop below 8 percent showed Obama getting a lift.** "Wall Street will look at all of the components, especially job creation—not just the unemployment rate," says Veru. "Unfortunately, Main Street looks only at the rate."

**Zero link --- the plan happens immediately but nuclear plants would not be built till after the election which means no public perception --- AND if their link argument is right Obama would deflect the blame --- PLUS the DOD shields.**

**Davenport 12** (Coral Davenport, energy and environment correspondent for National Journal. Prior to joining National Journal in 2010, Davenport covered energy and environment for Politico, and before that, for Congressional Quarterly. In 2010, she was a fellow with the Metcalf Institute for Marine and Environmental Reporting. From 2001 to 2004, Davenport worked in Athens, Greece, as a correspondent for numerous publications, including the Christian Science Monitor and USA Today, covering politics, economics, international relations and terrorism in southeastern Europe. She also covered the 2004 Olympic Games in Athens, and was a contributing writer to the Fodor’s, Time Out, Eyewitness and Funseekers’ guidebook series. Davenport started her journalism career at the Daily Hampshire Gazette in Northampton, Massachusetts, after graduating from Smith College with a degree in English literature. National Journal, 2/10/12, White House Budget to Expand Clean-Energy Programs Through Pentagon, ProQuest)

The White House believes it has figured out how to get more money for clean-energy programs touted by President Obama without having it become political roadkill in the wake of the Solyndra controversy: Put it in the Pentagon. While details are thin on the ground, lawmakers who work on both energy- and defense-spending policy believe the fiscal 2013 budget request to be delivered to Congress on Monday probably won't include big increases for wind and solar power through the Energy Department, a major target for Republicans since solar-panel maker Solyndra defaulted last year on a $535 million loan guarantee. But they do expect to see increases in spending on alternative energy in the Defense Department, such as programs to replace traditional jet fuel with biofuels, supply troops on the front lines with solar-powered electronic equipment, build hybrid-engine tanks and aircraft carriers, and increase renewable-energy use on military bases. While Republicans will instantly shoot down requests for fresh spending on Energy Department programs that could be likened to the one that funded Solyndra, many support alternative-energy programs for the military. "I do expect to see the spending," said Rep. Jack Kingston, R-Ga., a member of the House Defense Appropriations Subcommittee, when asked about increased investment in alternative-energy programs at the Pentagon. "I think in the past three to five years this has been going on, but that it has grown as a culture and a practice - and it's a good thing." "If Israel attacks Iran, and we have to go to war - and the Straits of Hormuz are closed for a week or a month and the price of fuel is going to be high," Kingston said, "the question is, in the military, what do you replace it with? It's not something you just do for the ozone. It's strategic." Sen. Lindsey Graham, R-S.C., who sits on both the Senate Armed Services Committee and the Defense Appropriations Subcommittee, said, "I don't see what they're doing in DOD as being Solyndra." "We're not talking about putting $500 million into a goofy idea," Graham told National Journal . "We're talking about taking applications of technologies that work and expanding them. I wouldn't be for DOD having a bunch of money to play around with renewable technologies that have no hope. But from what I understand, there are renewables out there that already work." A senior House Democrat noted that this wouldn't be the first time that the Pentagon has been utilized to advance policies that wouldn't otherwise be supported. "They did it in the '90s with medical research," said Rep. Henry Waxman, D-Calif., ranking member of the House Energy and Commerce Committee. In 1993, when funding was frozen for breast-cancer research programs in the National Institutes of Health, Congress boosted the Pentagon's budget for breast-cancer research - to more than double that of the health agency's funding in that area. Politically, the strategy makes sense. Republicans are ready to fire at the first sign of any pet Obama program, and renewable programs at the Energy Department are an exceptionally ripe target. That's because of Solyndra, but also because, in the last two years, the Energy Department received a massive $40 billion infusion in funding for clean-energy programs from the stimulus law, a signature Obama policy. When that money runs out this year, a request for more on top of it would be met with flat-out derision from most congressional Republicans. Increasing renewable-energy initiatives at the Pentagon can also help Obama advance his broader, national goals for transitioning the U.S. economy from fossil fuels to alternative sources. As the largest industrial consumer of energy in the world, the U.S. military can have a significant impact on energy markets - if it demands significant amounts of energy from alternative sources, it could help scale up production and ramp down prices for clean energy on the commercial market. Obama acknowledged those impacts in a speech last month at the Buckley Air Force Base in Colorado. "The Navy is going to purchase enough clean-energy capacity to power a quarter of a million homes a year. And it won't cost taxpayers a dime," Obama said. "What does it mean? It means that the world's largest consumer of energy - the Department of Defense - is making one of the largest commitments to clean energy in history," the president added. "That will grow this market, it will strengthen our energy security." Experts also hope that Pentagon engagement in clean-energy technology could help yield breakthroughs with commercial applications. Kingston acknowledged that the upfront costs for alternative fuels are higher than for conventional oil and gasoline. For example, the Air Force has pursued contracts to purchase biofuels made from algae and camelina, a grass-like plant, but those fuels can cost up to $150 a barrel, compared to oil, which is lately going for around $100 a barrel. Fuel-efficient hybrid tanks can cost $1 million more than conventional tanks - although in the long run they can help lessen the military's oil dependence, Kingston said Republicans recognize that the up-front cost can yield a payoff later. "It wouldn't be dead on arrival. But we'd need to see a two- to three-year payoff on the investment," Kingston said. Military officials - particularly Navy Secretary Ray Mabus, who has made alternative energy a cornerstone of his tenure - have been telling Congress for years that the military's dependence on fossil fuels puts the troops - and the nation's security - at risk. Mabus has focused on meeting an ambitious mandate from a 2007 law to supply 25 percent of the military's electricity from renewable power sources by 2025. (Obama has tried and failed to pass a similar national mandate.) Last June, the DOD rolled out its first department-wide energy policy to coalesce alternative and energy-efficient initiatives across the military services. In January, the department announced that a study of military installations in the western United States found four California desert bases suitable to produce enough solar energy - 7,000 megawatts - to match seven nuclear power plants. And so far, those moves have met with approval from congressional Republicans. Even so, any request for new Pentagon spending will be met with greater scrutiny this year. The Pentagon's budget is already under a microscope, due to $500 billion in automatic cuts to defense spending slated to take effect in 2013. But even with those challenges, clean-energy spending probably won't stand out as much in the military budget as it would in the Energy Department budget. Despite its name, the Energy Department has traditionally had little to do with energy policy - its chief portfolio is maintaining the nation's nuclear weapons arsenal. Without the stimulus money, last year only $1.9 billion of Energy's $32 billion budget went to clean-energy programs. A spending increase of just $1 billion would make a big difference in the agency's bottom line. But it would probably be easier to tuck another $1 billion or $2 billion on clean-energy spending into the

**No vote switching --- Romney supports nuclear too.**

**CSM 8/31** (Obama vs. Romney 101: 7 ways they differ on energy issues, <http://www.csmonitor.com/USA/DC-Decoder/2012/0831/Obama-vs.-Romney-101-7-ways-they-differ-on-energy-issues/Coal-power>)

4. Nuclear power The Department of Energy under Obama has provided billions of dollars in federal loan guarantees for nuclear-power development, as well as wind and other "clean" energy sources. In February, the Nuclear Regulatory Commission approved two new reactors at the Vogtle Electric Generating Plant in Georgia, the first such construction approvals in three decades. Obama regularly cites nuclear power development as part of his energy plan. On his website, Romney says he would streamline federal oversight from the Nuclear Regulatory Commission to ensure that licensing decisions for reactors that are on or adjacent to approved sites, and that use approved designs, are completed within two years. He would also expand NRC capabilities for approving additional new nuclear reactor designs. Romney supports federal loan guarantees for nuclear power, a subsidy said to be critical to its development.

**Jobs and gas prices ensure support, nuclear is not an election issue, and Obama supports it now.**

**Johnson 12** (John, Nuclear Energy Insider, April 25, "US Campaign Trail: is nuclear in the equation?", analysis.nuclearenergyinsider.com/new-build/us-campaign-trail-nuclear-equation)

In the next Presidential election, American voters will be voting with their pockets. We look at how the campaign so far has revealed which candidate will support nuclear R&D, nuclear new-build projects and ultimately preserve and create nuclear sector jobs.¶ As the U.S. Presidential election draws closer, Americans are most concerned about job creation and how the candidates plan to boost the U.S. economy.¶ Alternative energy policies have received a fair amount of publicity from the Obama administration, although nuclear power specifically is rarely mentioned on the campaign trial, primarily due to perceived safety questions.¶ Just the same, the Obama Administration is considered a nuclear supporter, having made several moves to help jumpstart America’s nuclear energy industry.¶ Obama plugged nuclear power during his first State Of The Union speech several years ago, and has generally been upbeat about the energy source’s future in the U.S.¶ ¶ The Campaign¶ ¶ Obama, a Democrat, will face Mitt Romney in the November election. Romney is expected to be named the official Republican nominee in August.¶ ¶ While Romney has not taken a stance on nuclear energy during his campaign, the Obama administration has made significant investments in the sector, including a $450m budget request in March intended to advance the development of American-made small modular reactors (SMRs). Congress still needs to approve the authorization for funding.¶ ¶ The SMRs are expected to be ready for commercial use within 10 years, and are intended for small electric grids and for locations that cannot support large reactors, offering utilities the flexibility to scale production as demand changes.¶ ¶ “The Obama Administration and the Energy Department are committed to an all-of-the-above energy strategy that develops every source of American energy, including nuclear power, and strengthens our competitive edge in the global clean energy race,” U.S. Energy Secretary Steven Chu said when the program was announced. ¶ ¶ “Through the funding for small modular nuclear reactors, the Energy Department and private industry are working to position America as the leader in advanced nuclear energy technology and manufacturing.” ¶ ¶ John Keeley, manager of media relations for the Nuclear Energy Institute, said that the Obama administration has done what it can to support the deployment on new build-outs in the United States to build out nuclear, as well as supporting research and development efforts, such as those in the small reactor space. ¶ ¶ Research support¶ ¶ In addition, the U.S. has invested $170 million in research grants at more than 70 universities, supporting research and development into a full spectrum of technologies, from advanced reactor concepts to enhanced safety design.¶ ¶ “The President was explicit in his State Of The Union speech about the virtues of nuclear as a technology and its role in clean air generation,” said Keeley. “And he has been supportive of developing more nuclear plants in this country. Those initiatives have to be identified as significant evidence of support for the nuclear sector.”¶ ¶ There are currently 104 nuclear power reactors operating in the U.S. in 31 states, operated by 30 different utilities. There are four new nuclear reactors being built in the U.S., including two in George at total expected cost of $14bn. ¶ ¶ In another sign of the U.S support for the industry, the federal government provided utility company Southern with an $8.3bn loan guarantee for the Vogtle Units 3 and 4, the first new nuclear plants to be built in the U.S. in the last 30 years. They are expected to be operational in 2016 and 2017.¶ ¶ The U.S. Energy Department has also supported the Vogtle project and the development of the next generation of nuclear reactors by providing more than $200m through a cost-share agreement to support the licensing reviews for the Westinghouse AP1000 reactor design certification. ¶ ¶ In addition to the Vogtle plants, SCANA, a subsidiary of South Carolina Electric & Gas Co. plans to add two reactors to its nuclear power plant near Jenkinsville, S.C., by 2016 and 2019.¶ ¶ “There is certainly political consensus in support of clean generation, and large scale cultural consensus as well,” said Keeley. ¶ ¶ Political benefits of nuclear support¶ ¶ As gas prices in the U.S. continue to soar, it’s possible that the tide will turn more in favor of nuclear and other clean energy sources, especially as electric cars take a stronger foothold. In addition, the job creation benefits from nuclear could work their way into the political landscape as well.¶ ¶ The two new Vogtle nuclear plants are expected.

**Winners win.**

**Creamer 12** (Robert, political organizer and strategist, "Why GOP Collapse on the Payroll Tax Could be a Turning Point Moment", 1/2, [www.huffingtonpost.com/robert-creamer/why-gop-collapse-on-the-p\_b\_1167491.html](http://www.huffingtonpost.com/robert-creamer/why-gop-collapse-on-the-p_b_1167491.html))

Strength and victory are enormous political assets. Going into the New Year, they now belong to the President and the Democrats. One of the reasons why the debt ceiling battle inflicted political damage on President Obama is that it made him appear ineffectual - a powerful figure who had been ensnared and held hostage by the Lilliputian pettiness of hundreds of swarming Tea Party ideological zealots. In the last few months -- as he campaigned for the American Jobs Act -- he has shaken free of those bonds. Now voters have just watched James Bond or Indiana Jones escape and turn the tables on his adversary. Great stories are about a protagonist who meets and overcomes a challenge and is victorious. The capitulation of the House Tea Party Republicans is so important because it feels like the beginning of that kind of heroic narrative. Even today most Americans believe that George Bush and the big Wall Street Banks - not by President Obama -- caused the economic crisis. Swing voters have never lost their fondness for the President and don't doubt his sincerity. But they had begun to doubt his effectiveness. They have had increasing doubts that Obama was up to the challenge of leading them back to economic prosperity. The narrative set in motion by the events of the last several weeks could be a turning point in voter perception. It could well begin to convince skeptical voters that Obama is precisely the kind of leader they thought he was back in 2008 - a guy with the ability to lead them out of adversity - a leader with the strength, patience, skill, will and resoluteness to lead them to victory. That now contrasts with the sheer political incompetence of the House Republican Leadership that allowed themselves to be cornered and now find themselves in political disarray. And it certainly contrasts with the political circus we have been watching in the Republican Presidential primary campaign. 3). This victory will inspire the dispirited Democratic base. Inspiration is the feeling of empowerment - the feeling that you are part of something larger than yourself and can personally play a significant role in achieving that goal. It comes from feeling that together you can overcome challenges and win. Nothing will do more to inspire committed Democrats than the sight of their leader -- President Obama - out maneuvering the House Republicans and forcing them into complete capitulation. The events of the last several weeks will send a jolt of electricity through the Progressive community. The right is counting on Progressives to be demoralized and dispirited in the coming election. The President's victory on the payroll tax and unemployment will make it ever more likely that they will be wrong. 4). When you have them on the run, that's the time to chase them. The most important thing about the outcome of the battle over the payroll tax and unemployment is that it shifts the political momentum at a critical time. Momentum is an independent variable in any competitive activity - including politics. In a football or basketball game you can feel the momentum shift. The tide of battle is all about momentum. The same is true in politics. And in politics it is even more important because the "spectators" are also the players - the voters. People follow - and vote -- for winners. The bandwagon effect is enormously important in political decision-making. Human beings like to travel in packs. They like to be at the center of the mainstream. Momentum shifts affect their perceptions of the mainstream. For the last two years, the right wing has been on the offensive. Its Tea Party shock troops took the battle to Democratic Members of Congress. In the Mid-Terms Democrats were routed in district after district. Now the tide has turned. And when the tide turns -when you have them on the run - that's the time to chase them.

**Conflicts are inevitable and won’t escalate.**

**Weitz 11** (Richard, senior fellow at the Hudson Institute and a World Politics Review senior editor 9/27/2011, “Global Insights: Putin not a Game-Changer for U.S.-Russia Ties,” <http://www.scribd.com/doc/66579517/Global-Insights-Putin-not-a-Game-Changer-for-U-S-Russia-Ties>)

Fifth, there will inevitably be areas of conflict between Russia and the United States regardless of who is in the Kremlin. Putin and his entourage can never be happy with having NATO be Europe's most powerful security institution, since Moscow is not a member and cannot become one. Similarly, the Russians will always object to NATO's missile defense efforts since they can neither match them nor join them in any meaningful way. In the case of Iran, Russian officials genuinely perceive less of a threat from Tehran than do most Americans, and Russia has more to lose from a cessation of economic ties with Iran -- as well as from an Iranian-Western reconciliation. On the other hand, these conflicts can be managed, since they will likely remain limited and compartmentalized. Russia and the West do not have fundamentally conflicting vital interests of the kind countries would go to war over. And as the Cold War demonstrated, nuclear weapons are a great pacifier under such conditions. Another novel development is that Russia is much more integrated into the international economy and global society than the Soviet Union was, and Putin's popularity depends heavily on his economic track record. Beyond that, there are objective criteria, such as the smaller size of the Russian population and economy as well as the difficulty of controlling modern means of social communication, that will constrain whoever is in charge of Russia.

**No nuclear strike.**

**Graham 7** (Thomas Graham, senior advisor on Russia in the US National Security Council staff 2002-2007, 2007, "Russia in Global Affairs” The Dialectics of Strength and Weakness http://eng.globalaffairs.ru/numbers/20/1129.html)

An astute historian of Russia, Martin Malia, wrote several years ago that “Russia has at different times been demonized or divinized by Western opinion less because of her real role in Europe than because of the fears and frustrations, or hopes and aspirations, generated within European society by its own domestic problems.” Such is the case today. To be sure, mounting Western concerns about Russia are a consequence of Russian policies that appear to undermine Western interests, but they are also a reflection of declining confidence in our own abilities and the efficacy of our own policies. Ironically, this growing fear and distrust of Russia come at a time when Russia is arguably less threatening to the West, and the United States in particular, than it has been at any time since the end of the Second World War. Russia does not champion a totalitarian ideology intent on our destruction, its military poses no threat to sweep across Europe, its economic growth depends on constructive commercial relations with Europe, and its strategic arsenal – while still capable of annihilating the United States – is under more reliable control than it has been in the past fifteen years and the threat of a strategic strike approaches zero probability. Political gridlock in key Western countries, however, precludes the creativity, risk-taking, and subtlety needed to advance our interests on issues over which we are at odds with Russia while laying the basis for more constructive long-term relations with Russia.

**Relations are dead without Romney.**

**Botev 9/11** (Gregory, Political Analyst for the Moscow Times, [*Whether Obama or Romney, the Reset Is Dead*, 11 September 2012, http://www.themoscowtimes.com/opinion/article/whether-obama-or-romney-the-reset-is-dead/467947.html](file:///C:\Users\Herndon\AppData\Roaming\Microsoft\Word\Whether%20Obama%20or%20Romney,%20the%20Reset%20Is%20Dead,%2011%20September%202012,%20http:\www.themoscowtimes.com\opinion\article\whether-obama-or-romney-the-reset-is-dead\467947.html))

During every U.S. presidential election campaign, there is a debate in Russia over whether the Republican or Democratic candidate would be more beneficial for the Kremlin. Russian analysts and politicians always fail to understand that Americans have shown little interest in foreign policy since the end of the Cold War. Even when foreign policy is mentioned in the campaign, Russia is far down the list as a priority item.

The volume of U.S-Russian trade remains small. The recent Exxon-Rosneft deal notwithstanding, U.S. interest in Russia's energy projects has fallen, particularly as the Kremlin has increased its role in this sector. To make matters worse, the United States is determined to establish clean energy and energy independence, while Russia's gas exports are feeling the pinch from stiff competition with the U.S. development of shale gas production.

Of course, traditional areas of cooperation remain: the transit of shipments to and from Afghanistan through Russia, Iran's nuclear program and the struggle against international terrorism. But the transit route into Afghanistan cannot, by itself, greatly influence bilateral relations as a whole, and progress on the other two points seems to have reached a plateau beyond which little potential remains for bringing the two countries into closer cooperation.

On the positive side, a new visa agreement came into force this week that will facilitate greater contact between both countries' citizens. But it will be years before that significantly influences overall U.S.-Russian relations. A new agreement regarding child adoptions has also been implemented after a few disturbing adoption stories prompted Russia's media, with the help of government propaganda, to spoil the U.S. image in Russia.

Meanwhile, both U.S. President Barack Obama and Republican candidate Mitt Romney support the U.S. missile defense program in principle, although the exact form and scope of its deployment differ among the candidates. Even though President Vladimir Putin, during his interview with RT state television last week, expressed guarded optimism over the prospect of reaching an agreement on missile defense with Obama, Russia seems to underestimate the degree to which Americans are fixated on missile defense as a central component of their national security. It is highly unlikely that any U.S. administration — Democratic or Republican — will ever agree to major concessions on missile defense.

It even seemed that Kremlin propagandists were happy when in March Romney called Russia the United States' No. 1 foe. They were given another present when Obama, addressing the Democratic National Convention last week, said Romney's comment only proved that he lacked foreign policy experience and was locked in Cold War thinking. For the next two months, however, the two candidates are unlikely to devote much attention to Russia.

Russia's internal politics will also be one of the key factors shaping future U.S.-Russian relations. The two-year jail sentence slapped on three members of Pussy Riot for their anti-Putin prayer in Moscow's main cathedral has already become a subject of discussion between Foreign Minister Sergei Lavrov and U.S. Secretary of State Hillary Clinton. Even the most pragmatic "pro-reset" U.S. administration would criticize to one degree or another Russia's poor record on human rights.

It appears that Russia is moving increasingly toward confrontation rather than rapprochement with the West. The Kremlin now seems fully committed to spreading the myth that the U.S. State Department is the cause behind most of Russia's domestic problems and is bent on undermining its national security by deploying missile defense installations in Europe and by supporting the opposition.

There are other disturbing signals as well. Take, for example, the United Russia bill that would prohibit Russian officials from owning bank accounts and property overseas, with particular attention paid to their holdings in the West. The ideological underpinning of this bill is that assets located in the West are tantamount to betrayal of the motherland. Then there is Russia's opposition to the U.S. Magnitsky Act. The Kremlin interprets this initiative as yet another confirmation of its suspicions that Washington is conspiring against it and that the bill's real U.S. motive is to blackmail Russian officials by threatening to freeze their overseas bank accounts and property.

An increase in these anti-Western attitudes does not bode well for U.S.-Russian relations, **even if Obama is re-elected** in November. Regardless of which candidate wins, the reset is bound to either slowly die a natural death under Obama or be extinguished outright under Romney. As a result, the most we can likely expect from U.S.-Russian relations in the next four years is cooperation on a limited range of mundane issues. Under these conditions, avoiding excessive anti-Russian or anti-U.S. rhetoric from both sides would itself be considered a major achievement in bilateral relations

### 2AC—Cap K

**Util outweighs ethics impact.**

Dan W. **Brock**, Professor of Philosophy and Biomedical Ethics at Brown University, **1987** (“Truth or Consequences: The Role of Philosophers in Policy-Making," *Ethics*, Volume 97, July, Available Online via JSTOR, p. 787)

When philosophers become more or less direct participants in the policy-making process and so are no longer academics just hoping that an occasional policymaker might read their scholarly journal articles, this scholarly virtue of the unconstrained search for the truth—all assumptions open to question and follow the arguments wherever they lead—comes under a variety of related pressures. What arises is an intellectual variant of the political problem of "dirty hands" that those who hold political power often face. I emphasize that I do not conceive of the problem as one of pure, untainted philosophers being corrupted by the dirty business of politics. My point is rather that the different goals of academic scholarship and public policy call in turn for **different virtues and behavior** in their practitioners. Philosophers who steadfastly maintain their academic ways in the public policy setting are not to be admired as islands of integrity in a sea of messy political compromise and corruption. Instead, I believe that if philosophers maintain the academic virtues there they will not only find themselves often **ineffective** but will as well often **fail in their responsibilities** and **act wrongly**. Why is this so? The central point of conflict is that the first concern of those responsible for public policy **is**, **and ought to be**, the **consequences** of their actions for public policy and the persons that those policies affect. This is not to say that they should not be concerned with the moral evaluation of those consequences—they should; nor that they must be moral consequentialists in the evaluation of the policy, and in turn human, consequences of their actions—whether some form of consequentialism is an adequate moral theory is another matter. But it is to say that persons who directly participate in the formation of public policy would be **irresponsible** if they did not focus their concern on how their actions will **affect policy** and how that policy will in turn **affect people**. The virtues of academic research and scholarship that consist in an unconstrained search for truth, whatever the consequences, reflect not only the different goals of scholarly work but also the fact that the effects of the scholarly endeavor on the public are less direct, and are mediated more by other institutions and events, than are those of the public policy process. It is in part the very impotence in terms of major, direct effects on people's lives of most academic scholarship that makes it morally acceptable not to worry much about the social consequences of that scholarship. When philosophers move into the policy domain, they must **shift their primary commitment** from knowledge and truth to the **policy consequences** of what they do. And if they are not prepared to do this, why did they enter the public domain? What are they doing there?

**The alt kills missions and causes global conflict --- we cannot turn of capitalism.**

**Barnhizer 6** — David R. Barnhizer, Emeritus Professor at Cleveland State University’s Cleveland-Marshall College of Law, 2006 (“Waking from Sustainability's "Impossible Dream": The Decisionmaking Realities of Business and Government,” *Georgetown International Environmental Law Review* (18 Geo. Int'l Envtl. L. Rev. 595), Available Online to Subscribing Institutions via Lexis-Nexis)

The scale of social needs, including the need for expanded productive activity, has grown so large that it cannot be shut off at all, and certainly not abruptly. It cannot even be ratcheted down in any significant fashion without producing serious harms to human societies and hundreds of millions of people. Even if it were possible to shift back to systems of local self-sufficiency, the consequences of the transition process would be catastrophic for many people and even deadly to the point of continual conflict, resource wars, increased poverty, and strife. What are needed are concrete, workable, and pragmatic strategies that produce effective and intelligently designed economic activity in specific contexts and, while seeking efficiency and conservation, place economic and social justice high on a list of priorities. n60

The imperative of economic growth applies not only to the needs and expectations of people in economically developed societies but also to people living in nations that are currently economically underdeveloped. Opportunities must be created, jobs must be generated in huge numbers, and economic resources expanded to address the tragedies of poverty and inequality. Unfortunately, natural systems must be exploited to achieve this; we cannot return to Eden. The question is not how to achieve a static state but how to achieve what is needed to advance social justice while avoiding and mitigating the most destructive consequences of our behavior.

**Capitalism is not the root cause of war.**

**Dandeker 92** — Christopher Dandeker, Professor of Military Sociology in the Department of War Studies at King's College London, 1992 (“The Causes of War and the History of Modern Sociological Theory,” *Effects of War on Society*, Edited by Giorgio Ausenda, Published by the Center for Interdisciplinary Research on Social Stress by Boydell & Brewer Ltd, ISBN 0851158684, 1st Edition Published in 1992, 2nd Edition Published in 2002, p. 44-45)

All these arguments presuppose two specious sociological contentions: first that capitalism, as the most historically developed and dynamic form of class exploitation, is the source of modern militarism, and second, that socialism, preferably on a world scale would involve the abolition of war. The deficiencies in these views, and indeed of those associated with the industrial society thesis discussed earlier, can be revealed by drawing on Machiavellian themes which can then be set out more explicitly in the next section.

Despite the fact that industrial capitalism has produced two world wars, as Aron (1954) and more recently Michael Mann (1984) have argued, there is **no 'special relationship'** between capitalism and militarism—or the tendency to war—only one of historical indifference. All the pre-dispositions of 'capitalist states' to use warfare calculatively as a means of resolving their disputes with other states **predate** the formation of capitalism as an economic system. Of course, it could be argued that capitalism merely changes the form of militarism. That is to say, pre-capitalist patterns of militarism were still expressions of class relations and modern capitalism has just increased the destructive power of the industrialised means of war available to the state. But this argument will not do. Socialist societies in their use of industrialised power show that the technological potential for war is **transferable** and can be reproduced under **non-capitalist conditions**. Furthermore, the military activities of socialist states cannot be explained in terms of a [end page 44] defensive war against capitalism or even an aggressive one, as national and geopolitical power motives are arguably just as significant in the determination of state behaviour. Furthermore, imperial expansion not only **predates capitalism** but it is also difficult to reduce the causes of wars then and now to the interests of dominant economic classes (Mann 1984:25-46).

**Growth is necessary for environmental transition—resource access.**

**Ben-Ami 11** — Daniel Ben-Ami, journalist and author, regular contributor to *spiked*, has been published in the *American*, the *Australian*, Economist.com, *Financial Times*, the *Guardian*, the *Independent*, *Novo* (Germany), *Ode* (American and Dutch editions), *Prospect*, *Shanghai Daily*, the *Sunday Telegraph*, the *Sunday Times*, and *Voltaire* (Sweden), 2011 (“Growth is good,” *Ode*, June, Available Online at http://www.odemagazine.com/doc/print/75/growth-is-good, Accessed 08-16-2011)

But is this notion of environmental limits really true? It is certainly the case that, say, building a factory can lead to pollution. However, it is also true that economic growth can generate the resources to clean up the environment and mold it to benefit human beings. That is why, as a general rule, developed countries are less polluted and cleaner than developing ones.

Typically, countries experience an environmental transition as they develop. In the early stages, cities may be grossly unsanitary and factories might billow filthy smoke. But as they become richer, these cities clean things up. In London, my hometown, cholera was widespread in the mid-19th century as raw human waste flowed into the Thames River. Then the authorities built an extensive sewage system, a pioneering civil engineering project at the time, and the problem was solved.

If anything, today’s developing countries potentially have it easier. They do not need to reinvent sewage systems or modern medicine. Instead, they just need to generate the resources to be able to afford the type of infrastructure already available in the West.

**Psychoanalysis can’t explain international politics**

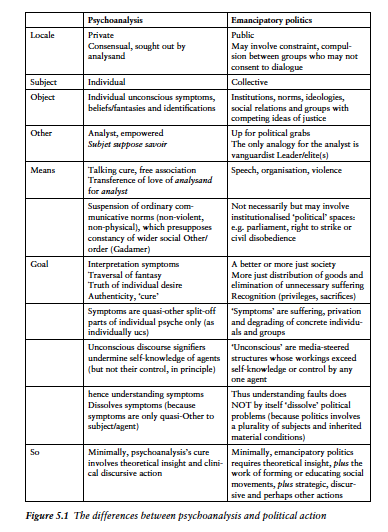
**Sharpe 10** (Matthew and Geoff, lecturer, philosophy and psychoanalytic studies, and Goucher, senior lecturer, literary and psychoanalytic studies – Deakin University, Žižek and Politics: An Introduction, p. 182 – 185, Figure 1.5 included)

Can we bring some order to this host of criticisms? It is remarkable that, for all the criticisms of Žižek’s political Romanticism, no one has argued that the ultra- extremism of Žižek’s political position might reflect his untenable attempt to shape his model for political action on the curative final moment in clinical psychoanalysis. **The differences between these** two **realms**, listed in Figure 5.1, **are** nearly **too many and too great to restate** – which has perhaps caused the **theoretical oversight**. The key thing is this. Lacan’s notion of traversing the fantasy involves the radical transformation of people’s subjective structure: a refounding of their most elementary beliefs about themselves, the world, and sexual difference. This is undertaken in the security of the clinic, on the basis of the analysands’ voluntary desire to overcome their inhibitions, symptoms and anxieties.

As a clinical and existential process, it has its own independent importance and authenticity. The analysands, in transforming their subjective world, change the way they regard the objective, shared social reality outside the clinic. **But they do not transform the world.** The political relevance of the clinic can only be (a) as a supporting moment in ideology critique or (b) as a fully- fl edged model of politics, provided that the political subject and its social object are ultimately identical. Option (*b*), Žižek’s option, rests on the idea, not only of a subject who becomes who he is only through his (mis) recognition of the objective sociopolitical order, but whose ‘traversal of the fantasy’ is immediately identical with his transformation of the socio- political system or Other. Hence, according to Žižek, we can analyse the institutional embodiments of this Other using psychoanalytic categories. In Chapter 4, we saw Žižek’s resulting elision of the distinction between the (subjective) Ego Ideal and the (objective) Symbolic Order. This leads him to analyse our entire culture as a single subject–object, whose perverse (or perhaps even psychotic) structure is expressed in every manifestation of contemporary life. Žižek’s decisive political- theoretic errors, one substantive and the other methodological, are different (see Figure 5.1)

**The *substantive problem* is to equate any political change** worth the name **with** the **total change of the subject–object** that is, today, global capitalism. This is a type of change that can only mean equating politics with violent regime change, and ultimately embracing dictatorial government, as Žižek now frankly avows (*IDLC* 412–19). We have seen that the ultra- political form of Žižek’s criticism of everyone else, the theoretical Left and the wider politics, is that no one is sufficiently radical for him – even, we will discover, Chairman Mao. We now see that this is because Žižek’s model of politics proper is modelled on a pre- critical **analogy with** the total transformation of **a subject’s** entire **subjective structure, at the end of the talking cure.** For what could the concrete consequences of this governing analogy be?

We have seen that Žižek equates the individual fantasy with the collective identity of an entire people. The social fantasy, he says, structures the regime’s ‘inherent transgressions’: at once subjects’ habitual ways of living the letter of the law, and the regime’s myths of origin and of identity. If political action is modelled on the Lacanian cure, it must involve the complete ‘traversal’ – in Hegel’s terms, the abstract versus the determinate negation – of all these lived myths, practices and habits. Politics must involve the periodic founding of



entire new subject–objects. Providing the model for this set of ideas, the fi rst Žižekian political subject was Schelling’s divided God, who gave birth to the entire Symbolic Order before the beginning of time (*IDLC* 153; *OB* 144–8).

But can the political theorist reasonably hope or expect that subjects will simply give up on all their inherited ways, myths and beliefs, all **in one world- creating moment?** And can they be legitimately asked or expected to, on the basis of a set of ideals whose legitimacy they will only retrospectively see, after they have acceded to the Great Leap Forward? And if they do not – for Žižek laments that today subjects are politically disengaged in unprecedented ways – what means can the theorist and his allies use to move them to do so?

**No empirical basis for applying psychology to state action**

**Epstein 10** (Charolotte, senior lecturer in government and IR – University of Sydney,“Who speaks? Discourse, the subject and the study of identity in international politics,” European Journal of International Relations XX(X) 1–24)

One key advantage of the Wendtian move, granted even by his critics (see Flockhart, 2006), is that it simply does away with the level-of-analysis problem altogether. If states really are persons, then we can apply everything we know about people to understand how they behave. The study of individual identity is not only theoretically justified but it is warranted. This cohesive self borrowed from **social psychology** is what allows Wendt to bridge the different levels of analysis and travel between the self of the individual and that of the state, by way of a third term, ‘group self’, which is simply an aggregate of individual selves. Thus for Wendt (1999: 225) ‘the state is simply a “group Self” capable of group level cognition’. Yet that the individual possesses a self does not logically entail that the state possesses one too. It is in this leap, from the individual to the state, that IR’s fallacy of composition surfaces most clearly.

Moving beyond Wendt but maintaining the psychological self as the basis for theorizing the state

Wendt’s bold ontological claim is far from having attracted unanimous support (see nota­bly, Flockhart, 2006; Jackson, 2004; Neumann, 2004; Schiff, 2008; Wight, 2004). One line of critique of the states-as-persons thesis has taken shape around the resort to psy­chological theories, specifically, around the respective merits of Identity Theory (Wendt) and SIT (Flockhart, 2006; Greenhill, 2008; Mercer, 2005) for understanding state behav­iour.9 Importantly for my argument, that the state has a self, and that this self is pre-social, remains unquestioned in this further entrenching of the psychological turn. Instead questions have revolved around how this pre-social self (Wendt’s ‘Ego’) behaves once it encounters the other (Alter): whether, at that point (and not before), it takes on roles prescribed by pre-existing cultures (whether Hobbessian, Lockean or Kantian) or whether instead other, less culturally specific, dynamics rooted in more universally human char­acteristics better explain state interactions. SIT in particular emphasizes the individual’s basic need to belong, and it highlights the dynamics of in-/out-group categorizations as a key determinant of behaviour (Billig, 2004). SIT seems to have attracted increasing interest from IR scholars, interestingly, for both critiquing (Greenhill, 2008; Mercer, 1995) and rescuing constructivism (Flockhart, 2006).

For Trine Flockart (2006: 89–91), SIT can provide constructivism with a different basis for developing a theory of agency that steers clear of the states-as-persons thesis while filling an important gap in the socialization literature, which has tended to focus on norms rather than the actors adopting them. She shows that a state’s adherence to a new norm is best understood as the act of joining a group that shares a set of norms and val­ues, for example the North Atlantic Treaty Organization (NATO). What SIT draws out are the benefits that accrue to the actor from belonging to a group, namely increased self-esteem and a clear cognitive map for categorizing other states as ‘in-’ or ‘out-group’ members and, from there, for orientating states’ self–other relationships.

Whilst coming at it from a stance explicitly critical of constructivism, for Jonathan Mercer (2005: 1995) the use of psychology remains key to correcting the systematic evacuation of the role of emotion and other ‘non-rational’ phenomena in rational choice and behaviourist analyses, which has significantly impaired the understanding of inter­national politics. SIT serves to draw out the emotional component of some of the key drivers of international politics, such as trust, reputation and even choice (Mercer, 2005: 90–95; see also Mercer, 1995). Brian Greenhill (2008) for his part uses SIT amongst a broader array of psychological theories to analyse the phenomenon of self–other recog­nition and, from there, to take issue with the late Wendtian assumption that mutual recognition can provide an adequate basis for the formation of a collective identity amongst states.

The main problem with this psychological turn is the very utilitarian, almost mecha­nistic, approach to non-rational phenomena it proposes, which tends to evacuate the role of meaning. In other words, it further shores up the pre-social dimension of the concept of self///

that is at issue here. Indeed norms (Flockhart, 2006), emotions (Mercer, 2005) and recognition (Greenhill, 2008) are hardly appraised as symbolic phenomena. In fact, in the dynamics of in- versus out-group categorization emphasized by SIT, language counts for very little. Significantly, in the design of the original experiments upon which this approach was founded (Tajfel, 1978), whether two group members communicate at all, let alone share the same language, is non-pertinent. It is enough that two individuals should know (say because they have been told so in their respec­tive languages for the purposes of the experiment) that they belong to the same group for them to favour one another over a third individual. The primary determinant of individual behaviour thus emphasized is a pre-verbal, primordial desire to belong, which seems closer to pack animal behaviour than to anything distinctly human. What the group stands for, what specific set of meanings and values binds it together, is unimportant. What matters primarily is that the group is valued positively, since posi­tive valuation is what returns accrued self-esteem to the individual. In IR Jonathan Mercer’s (2005) account of the relationship between identity, emotion and behaviour reads more like a series of buttons mechanically pushed in a sequence of the sort: posi­tive identification produces emotion (such as trust), which in turn generates specific patterns of in-/out-group discrimination.

Similarly, Trine Flockhart (2006: 96) approaches the socializee’s ‘desire to belong’ in terms of the psychological (and ultimately social) benefits and the feel-good factor that accrues from increased self-esteem. At the far opposite of Lacan, the concept of desire here is reduced to a Benthamite type of pleasure- or utility-maximization where mean­ing is nowhere to be seen. More telling still is the need to downplay the role of the Other in justifying her initial resort to SIT. For Flockhart (2006: 94), in a post-Cold War con­text, ‘identities cannot be constructed purely in relation to the “Other”’. Perhaps so; but not if what ‘the other’ refers to is the generic, dynamic scheme undergirding the very concept of identity. At issue here is the confusion between the reference to a specific other, for which Lacan coined the concept of *le petit autre*, and the reference to *l’Autre*, or Other, which is that symbolic instance that is essential to the making of *all* selves. As such it is not clear what meaning Flockhart’s (2006: 94) capitalization of the ‘Other’ actually holds.

The individual self as a proxy for the state’s self

Another way in which the concept of self has been centrally involved in circumventing the level-of-analysis problem in IR has been to treat the self of the individual as a proxy for the self of the state. The literature on norms in particular has highlighted the role of individuals in orchestrating norm shifts, in both the positions of socializer (norm entre­preneurs) and socializee. It has shown for example how some state leaders are more sus­ceptible than others to concerns about reputation and legitimacy and thus more amenable to being convinced of the need to adopt a new norm, of human rights or democratization, for example (Finnemore and Sikkink, 1998; Keck and Sikkink, 1998; Risse, 2001). It is these specific psychological qualities pertaining to their selves (for example, those of Gorbachev; Risse, 2001) that ultimately enable the norm shift to occur. Once again the individual self ultimately remains the basis for explaining the change in state behaviour.

To summarize the points made so far, whether the state is literally considered as a person by ontological overreach, whether so only by analogy, or whether the person stands as a proxy for the state, the ‘self’ of that person has been consistently taken as the reference point for studying state identities. Both in Wendt’s states-as-persons thesis, and in the broader psychological turn within constructivism and beyond, the debate has con­sistently revolved around the need to evaluate which of the essentialist assumptions about human nature are the most useful for explaining state behaviour. **It has never ques­tioned the validity of starting from these assumptions in the first place.** That is, what is left unexamined is this assumption is that what works for individuals will work for states too. This is IR’s central fallacy of composition, by which it has persistently eschewed rather than resolved the level-of-analysis problem. Indeed, in the absence of a clear dem­onstration of a logical identity (of the type A=A) between states and individuals, the assumption that individual interactions will explain what states do rests on **little more than a leap of faith**, or indeed an analogy.

## \*\*\* 1AR

### AT: IAEA Overstretch

#### IAEA tradeoffs now and the agency fails.

**Findlay 12** Trevor, Senior Fellow at Centre for International Governance Innovation and Director of the Canadian Centre for Treaty Compliance. Professor at the Norman Paterson School of International Affairs, UNLEASHING THE NUCLEAR WATCHDOG: strengthening and reform of the iaea, http://www.cigionline.org/sites/default/files/IAEA\_final\_0.pdf

In spite of this well-deserved reputation and its apparently starry prospects, the Agency remains relatively undernourished, its powers significantly hedged and its technical achievements often overshadowed by political controversy. This evidently prized body has, for instance, been largely unable to break free of the zero real growth (ZRG) budgeting imposed on all UN agencies from the mid-1980s onwards (ZRG means no growth beyond inflation). As a result, the Agency has not been provided with the latest technologies and adequate human resources. Moreover, despite considerable strengthening, its enhanced nuclear safeguards system is only partly mandatory. Notwithstanding the increasing influence of its recommended standards and guides, its safety and security powers remain entirely non-binding. Although the Agency’s long-term response to the Fukushima disaster remains to be seen, its role in nuclear safety and security continues to be hamstrung by states’ sensitivity about sovereignty and secrecy, and by its own lack of capacity. Many states have shown a surprising degree of ambiguity towards supporting the organization both politically and financially. The politicization of its governing bodies has increased alarmingly in recent years, crimping its potential.

Most alarming of all, the Agency has failed, by its own means, to detect serious non-compliance by Iraq, Iran and Libya with their safeguards agreements and, by extension, with the NPT (although it was the first to detect North Korea’s non-compliance). Iran’s non- compliance had gone undetected for over two decades. Most recently, the Agency missed Syria’s attempt to construct a nuclear reactor with North Korean assistance. Despite significant improvements to the nuclear safeguards regime, there is substantial room for improvement, especially in detecting undeclared materials, facilities and activities.6

### AT: Makhijani Ev

#### Their evidence is wrong.

**Barton 10** Charles, frmr PhD Candidate in History, MA in Philsophy, worked on the LFTR concept for about 2/3eds of his ORNL career and recognized by nuclear bloggers most of whom have technical training, and has been mentioned by the Wall Street Journal, “Arjun Makhijani and the Modular Small Reactor null-hypothesis” October 2, 2010, http://nucleargreen.blogspot.com/2010/10/arjun-makhijani-and-modular-small.html)

Arjun Makhijani (with Michele Boyd) has recently published a fact sheet on Small Modular Reactors which in effect advertises itself as the null-hypothesis to the case I an others have been making for some time on the advantages of small reactors. Small Modular ReactorsNo Solution for the Cost, Safety, and Waste Problems of Nuclear Power, Makhijani's title proclaims. But what is the evidence that backs Makhijani's case up. As it turns out Makhijani offers no empirical data to back up his assertion, so as an example of scientific reasoning, Makhijani's fact sheet rates an F.

### CP

#### Picking winners good --- enhances growth.

**Blattman 12** Chris, Assistant Professor of Political Science & International and Public Affairs at Colombia University, "The Case for industrial policy (a paper and a rant)", May 7, chrisblattman.com/2012/05/07/the-case-for-industrial-policy-a-paper-and-a-rant/?utm\_source=feedburner&utm\_medium=feed&utm\_campaign=Feed%3A+chrisblattman+%28Chris+Blattman%29

A new paper, where some very good economists look at data from Chinese medium and large firms:¶ …sectoral policy aimed at **targeting production activities to one particular sector, can enhance growth** and efficiency if it made competition-friendly.¶ …if subsidies are allocated to competitive sectors… and allocated in such a way as to preserve or increase competition, **then the net impacts of subsidies**, tax holidays, and tariffs **on total** factor **productivity** levels **or growth become positive and significant**.¶ “You can’t pick winners” is the knee-jerk retort to the mention of anything that even rhymes with industrial policy**. I would call it the triumph of ideology over evidence**, except that even “ideology” feels like a generous term**. Lazy thinking might be a more accurate description**. Some have given the question a great deal of thought, but most have not.¶ I’m not suggesting that the paper above has the right answer (odds are, like most papers, it does not). I’m also not suggesting that governments can pick winners (probably they can’t). Nor am I forgetting that industrial policy is easily politicized and distorted (as surely it is). So what am I talking about?¶ I’ll make two claims. The first: industrialization is the most important and essential process of development. Everything from lower poverty, reduced inequality, and tax bases to support education and health and welfare systems will (and must) spring from high value-added production**. Anything policymakers can do to hasten the process will have unparalleled benefits**. The problem? We have little to no idea how to do that. And many of the tools in the current policy tool box are deeply flawed.¶ Some take this as evidence economists and researchers should focus on other things. This brings us to the second part of my argument, where I make the opposite claim: there is no more important or promising frontier of knowledge. The fact that we know so little, and the tools are so poor, suggests (to me) that the marginal gains from more research are huge. there is no more important place for scholars to spend their time.¶ As for the worry that industrial policy is too easily politicized or captured, I say: what policy is not? Again, this is simply a yet more promising opportunity for experimentation and learning.

### AT: Relations Solve

#### Relations won’t solve warming

Washington Times 11—a full-service, general interest daily newspaper in the nation's capital, it has a reputation for hard-hitting investigative reporting and thorough coverage of politics and policy [2/7/11, “Global warming a hard sell,” available online at http://www.washingtontimes.com/news/2011/feb/7/global-warming-a-hard-sell/]

Former Vice President Al Gore said on his website recently that the reason for the particularly harsh and snowy winter we’ve been experiencing this season was because of “man-made global warming” (“Snow job,” Comment & Analysis, Jan. 28). According to Mr. Gore, “scientists have been warning for at least two decades that global warming could make snowstorms more severe.” So just to recap, whether there’s a week-long heat wave or the exact opposite - a frigid winter - the cause is always the same: global warming. In 1992, Mr. Gore wrote his comprehensive “the sky is falling” environmental book, “Earth in the Balance,” (Rodale Books, 1992), which catapulted him to the top of Bill Clinton‘s list of potential running mates. The two would run on what was dubbed the “environmental ticket” that same year. With all his encyclopedic knowledge on the pending apocalyptic environmental calamity awaiting mankind, why did he wait so long to do something about it? For eight years, Mr. Gore was at the seat of power in the United States and this controversial environmental crisis didn’t seem to be all that much of an emergency to him then. Even if Mr. Gore were eventually proved right, there’s no political solution to global warming. Does anyone really think that China, India or any other budding industrial powerhouse is ever going to alter its economic policies because of a flimflam argument that even the godfather of the cause didn’t do anything about when he could have?

### Russia

#### Won’t crush relations – Putin admits

NBC NEWS 9 – 6 – 12 Russia's Putin: Romney 'mistaken,' Obama 'honest', <http://worldnews.nbcnews.com/_news/2012/09/06/13705323-russias-putin-romney-mistaken-obama-honest>

President Vladimir Putin said in an interview aired Thursday that Russia can work with Mitt Romney if he's elected U.S. president, even though Romney has called Russia the United States' "No. 1 geopolitical foe."

However, Putin also suggested that a Romney presidency would widen the rift over an anti-missile shield the United States is deploying in Europe.

The Russian leader held out hope for an end to the missile defense dispute if Barack Obama is re-elected in November, telling Russia's RT television he was "an honest person who really wants to change much for the better."

Romney has promised "less flexibility and more backbone" in policy on Russia if he wins the Nov. 6 election.

"As for Mr. Romney's position, we understand that it is in part...campaign rhetoric, but I think it is, of course, without a doubt mistaken," Putin said.

#### Romney’s comment already impacted relations – his winning is irrelevant

ABC NEWS 9 – 11 – 12 Putin Thanks Romney for Calling Russia No. 1 Foe, <http://abcnews.go.com/blogs/politics/2012/09/putin-thanks-romney-for-calling-russia-no-1-foe/>

Russian President Vladimir Putin said today that Mitt Romney’s characterization of Moscow as the United States’ “number one geopolitical foe” has actually helped Russia.

The Russian leader said Romney’s comments strengthened his resolve to oppose NATO’s plan for a missile defense shield in Eastern Europe, a system Russia believes will degrade its nuclear deterrent. The U.S. insists the system is aimed at Iran, not Russia.

“I’m grateful to him (Romney) for formulating his stance so clearly because he has once again proven the correctness of our approach to missile defense problems,” Putin told reporters, according to the Russian news agency RIA Novosti.

“The most important thing for us is that even if he doesn’t win now, he or a person with similar views may come to power in four years. We must take that into consideration while dealing with security issues for a long perspective,” he said, speaking after a meeting with Serbian President Tomislav Nikolic, according to Interfax news agency.

#### Obama isn’t good for relations

RT 9 – 5 – 12 Russia the wildcard in Obama-Romney faceoff, <http://rt.com/politics/russia-obama-romney-election-washington-2012-430/>

The real irony, however, of Romney’s promise to “have less flexibility on **Russia**” is that Obama himself has been less than forthcoming with Moscow. Shortly after winning the presidency in 2008, Obama announced he was “shelving” the European missile defense plans cooked up by the previous Bush administration. Whatever optimism this decision may have produced in **Russia** was short-lived, because the White House merely “shelved” the Bush shield for one that is every bit as threatening to **Russia**’s national security as far as Moscow is concerned.

Meanwhile, Moscow warned that the construction of a missile defense shield in Eastern Europe without **Russia**’s cooperation would be viewed as a threat and responded to accordingly. This warning triggered numerous rounds of discussions between Western and **Russia**n diplomats that eventually led to a dead end.

Washington and NATO seem willing to proceed with the system despite Moscow’s warning that it could lead to “another arms race” in the region.

This intransigence on the part of the Obama administration, which rejected **Russia**’s participation in the project, has added a hefty footnote to the so-called reset. Now, given this stubbornness on the part of the Democrats, it is difficult to imagine exactly what Romney means when he says he will be “less flexible” with Russia if elected.

Although Moscow at this point would much rather see Barack Obama in the White House for another four years, this does not necessarily mean it is satisfied either with him or the so-called reset.

When it comes to a choice between Romney and Obama, Russia is simply prepared to go along with the devil they know, as opposed to the devil they do not. And there is a lot that Russia, as the well as the American people, do not know about Mitt Romney.