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### Adv 1 – DOD

**Advantage One---The DoD**

**Cyber-attack’s coming---actors are probing US grid weaknesses.**

**Reed 10/11** (John, Reports on the frontiers of cyber war and the latest in military technology for Killer Apps at Foreign Policy, "U.S. energy companies victims of potentially destructive cyber intrusions", 2012)

Foreign actors are probing the networks of key American companies in an attempt to gain control of industrial facilities and transportation systems, Defense Secretary Leon Panetta revealed tonight.¶ "We know that foreign cyber actors are probing America's critical infrastructure networks," said Panetta, disclosing previously classified information during a speech in New York laying out the Pentagon's role in protecting the U.S. from cyber attacks. "They are targeting the computer control systems that operate chemical, electricity and water plants, and those that guide transportation thorough the country."¶ He went on to say that the U.S. government knows of "specific instances where intruders have gained access" to these systems -- frequently known as Supervisory Control and Data Acquisition (or SCADA) systems -- and that "they are seeking to create advanced tools to attack these systems and cause panic, destruction and even the loss of life," according to an advance copy of his prepared remarks.¶ The secretary said that a coordinated attack on enough critical infrastructure could be a "**cyber Pearl Harbor**" that would "cause physical destruction and loss of life, paralyze and shock the nation, and create a profound new sense of vulnerability."¶ While there have been reports of criminals using 'spear phishing' email attacks aimed at stealing information about American utilties, Panetta's remarks seemed to suggest more sophisticated, nation-state backed attempts to actually gain control of and damage power-generating equipment. ¶ Panetta's comments regarding the penetration of American utilities echo those of a private sector cyber security expert Killer Apps spoke with last week who said that the networks of American electric companies were penetrated, perhaps in preparation for a **Stuxnet-style attack**.¶ Stuxnet is the famous cyber weapon that infected Iran's uranium-enrichment centrifuges in 2009 and 2010. Stuxnet is believed to have caused some of the machines to spin erratically, thereby destroying them.¶ "There is hard evidence that there has been penetration of our power companies, and given Stuxnet, that is a staging step before destruction" of electricity-generating equipment, the expert told Killer Apps. Because uranium centrifuges and power turbines are both spinning machines, "the attack is identical -- the one to take out the centrifuges and the one to take out our power systems is the same attack."¶ "If a centrifuge running at the wrong speed can blow apart" so can a power generator, said the expert. "If you do, in fact, spin them at the wrong speeds, you can blow up any rotating device."¶ Cyber security expert Eugene Kaspersky said two weeks ago that one of his greatest fears is someone reverse-engineering a sophisticated cyber weapon like Stuxnet -- a relatively easy task -- and he noted that Stuxnet itself passed through power plants on its way to Iran. "Stuxnet infected thousands of computer systems all around the globe, I know there were power plants infected by Stuxnet very far away from Iran," Kaspersky said.

**Risk of attacks is exceptionally high.**

**Habiger 10** (Eugene, Commander in Chief – United States Strategic Command, Served as Director of Security and Emergency Operations – U.S. Department of Energy, Previously Deputy chief of staff for personnel – Headquarters U.S. Air Force, Vice commander – Headquarters Air Education and Training Command, Deputy Director, Later director, Programs and Evaluation, Office of the Deputy Chief of Staff, Programs and Resources, Headquarters U.S. Air Force, He was also the chairman of the Program Review Committee and the Air Force Board, *CYBERWARFARE AND CYBERTERRORISM: THE NEED FOR A NEW U.S. STRATEGIC APPROACH*, The Cyber Security Institute, http://www.army-technology.com/downloads/whitepapers/vehicle-protection/file1552/)

However, there are reasons to believe that what is going on now amounts to a fundamental shift as opposed to business as usual. Today’s network exploitation or information operation trespasses possess a number of characteristics that suggest that the line between espionage and conflict has been, or is close to being, crossed. (What that suggests for the proper response is a different matter.) First, the **number of cyber attacks** we are facing is growing significantly. Andrew Palowitch, a former CIA official now consulting with the US Strategic Command (STRATCOM), which oversees the Defense Department’s Joint Task Force‐Global Network Operations, recently told a meeting of experts that the Defense Department has experienced almost **80,000 computer attacks**, and some number of these assaults have actually “reduced” the military’s “operational capabilities.”20 Second, the nature of these attacks is starting to shift from penetration attempts aimed at gathering intelligence (cyber spying) to offensive efforts aimed at taking down systems (cyberattacks). Palowitch put this in stark terms last November, “We are currently in a cyber war and war is going on today.”21 Third, these recent attacks need to be taken in a broader strategic context. Both Russia and China have stepped up their offensive efforts and taken a much more aggressive cyber warfare posture. The Chinese have developed an openly discussed cyberwar strategy aimed at achieving electronic dominance over the U.S. and its allies by 2050. In 2007 the Department of Defense reported that for the first time China has developed first strike viruses, marking a major shift from prior investments in defensive measures.22 And in the intervening period China has launched a series of offensive cyber operations against U.S. government and private sector networks and infrastructure. In 2007, Gen. James Cartwright, the former head of STRATCOM and now the Vice Chairman of the Joint Chiefs of Staff, told the US‐China Economic and Security Review Commission that China’s ability to launch “denial of service” attacks to overwhelm an IT system is of particular concern. 23 Russia also has already begun to wage offensive cyberwar. At the outset of the recent hostilities with Georgia, Russian assets launched a series of cyberattacks against the Georgian government and its critical infrastructure systems, including media, banking and transportation sites.24 In 2007, cyberattacks that many experts attribute, directly or indirectly, to Russia shut down the Estonia government’s IT systems. Fourth, the current geopolitical context must also be factored into any effort to gauge the degree of threat of cyberwar. The start of the new Obama Administration has begun to help reduce tensions between the United States and other nations. And, the new administration has taken initial steps to improve bilateral relations specifically with both China and Russia. However, it must be said that over the last few years the posture of both the Chinese and Russian governments toward America has clearly become more assertive, and at times even aggressive. Some commentators have talked about the prospects of a cyber Pearl Harbor, and the pattern of Chinese and Russian behavior to date gives reason for concern along these lines: both nations have offensive cyberwarfare strategies in place; both nations have taken the cyber equivalent of building up their forces; both nations now regularly probe our cyber defenses looking for gaps to be exploited; both nations have begun taking actions that cross the line from cyberespionage to cyberaggression; and, our bilateral relations with both nations are increasingly fractious and complicated by areas of marked, direct competition. Clearly, there a sharp differences between current U.S. relations with these two nations and relations between the US and Japan just prior to World War II. However, from a strategic defense perspective, there are enough warning signs to warrant preparation. In addition to the threat of cyberwar, the limited resources required to carry out even a large scale cyberattack also makes likely the potential for a significant cyber terror attack against the United States. However, the lack of a long list of specific incidences of cyberterrorism should provide no comfort. There is **strong evidence** to suggest that al Qaeda has the ability to conduct cyberterror attacks against the United States and its allies. Al Qaeda and other terrorist organizations are extremely active in cyberspace, using these technologies to communicate among themselves and others, carry out logistics, recruit members, and wage information warfare. For example, al Qaeda leaders used email to communicate with the 9‐11 terrorists and the 9‐11 terrorists used the Internet to make travel plans and book flights. Osama bin Laden and other al Qaeda members routinely post videos and other messages to online sites to communicate. Moreover, there is evidence of efforts that al Qaeda and other terrorist organizations are actively developing cyberterrorism capabilities and seeking to carry out cyberterrorist attacks. For example, the Washington Post has reported that “U.S. investigators have found evidence in the logs that mark a browser's path through the Internet that al Qaeda operators spent time on sites that offer software and programming instructions for the digital switches that run power, water, transport and communications grids. In some interrogations . . . al Qaeda prisoners have described intentions, in general terms, to use those tools.”25 Similarly, a 2002 CIA report on the cyberterror threat to a member of the Senate stated that al Qaeda and Hezbollah have become "more adept at using the internet and computer technologies.”26 The FBI has issued bulletins stating that, “U. S. law enforcement and intelligence agencies have received indications that Al Qaeda members have sought information on Supervisory Control And Data Acquisition (SCADA) systems available on multiple SCADA‐related web sites.”27 In addition a number of jihadist websites, such as 7hj.7hj.com, teach computer attack and hacking skills in the service of Islam.28 While al Qaeda may lack the cyber‐attack capability of nations like Russia and China, there is every reason to believe its operatives, and those of its ilk, are as capable as the cyber criminals and hackers who routinely effect great harm on the world’s digital infrastructure generally and American assets specifically. In fact, perhaps, the most troubling indication of the level of the cyberterrorist threat is the countless, serious non‐terrorist cyberattacks routinely carried out by criminals, hackers, disgruntled insiders, crime syndicates and the like. If run‐of‐the‐mill criminals and hackers can **threaten power grids**, hack vital military networks, steal vast sums of money, take down a city’s of traffic lights, compromise the Federal Aviation Administration’s air traffic control systems, among other attacks, it is **overwhelmingly likely** that terrorists can carry out similar, if not more malicious attacks. Moreover, even if the world’s terrorists are unable to breed these skills, they can certainly buy them. There are untold numbers of cyber mercenaries around the world—sophisticated hackers with advanced training who would be willing to offer their services for the right price. Finally, given the nature of our understanding of cyber threats, there is always the possibility that we have already been the victim or a cyberterrorist attack, or such an attack has already been set but not yet effectuated, and we don’t know it yet. Instead, a well‐designed cyberattack has the capacity to cause widespread chaos, sow societal unrest, undermine national governments, spread paralyzing fear and anxiety, and create a state of utter turmoil, all without taking a single life. A sophisticated cyberattack could throw a nation’s banking and finance system into chaos causing markets to crash, prompting runs on banks, degrading confidence in markets, perhaps even putting the nation’s currency in play and making the government look helpless and hapless. In today’s difficult economy, imagine how Americans would react if vast sums of money were taken from their accounts and their supporting financial records were destroyed. A truly nefarious cyberattacker could carry out an attack in such a way (akin to Robin Hood) as to engender populist support and deepen rifts within our society, thereby making efforts to restore the system all the more difficult. A modestly advanced enemy could use a cyberattack to shut down (if not physically damage) one or more regional power grids. An entire region could be cast into total darkness, power‐dependent systems could be shutdown. An attack on one or more regional power grids could also cause cascading effects that could jeopardize our entire national grid. When word leaks that the blackout was caused by a cyberattack, the specter of a foreign enemy capable of sending the entire nation into darkness would only increase the fear, turmoil and unrest. While the finance and energy sectors are considered prime targets for a cyberattack, an attack on any of the 17 delineated critical infrastructure sectors could have a major impact on the United States. For example, our healthcare system is already technologically driven and the Obama Administration’s e‐health efforts will only increase that dependency. A cyberattack on the U.S. e‐health infrastructure could send our healthcare system into chaos and put countless of lives at risk. Imagine if emergency room physicians and surgeons were suddenly no longer able to access vital patient information. A cyberattack on our nation’s water systems could likewise cause widespread disruption. An attack on the control systems for one or more dams could put entire communities at risk of being inundated,and could create ripple effects across the water, agriculture, and energy sectors. Similar water control system attacks could be used to at least temporarily deny water to otherwise arid regions, impacting everything from the quality of life in these areas to agriculture. In 2007, the U.S. Cyber Consequences Unit determined that the destruction from a single wave of cyberattacks on critical infrastructures could exceed $700 billion, which would be the rough equivalent of 50 Katrina‐esque hurricanes hitting the United States all at the same time.29 Similarly, one IT security source has estimated that the impact of a single day cyberwar attack that focused on and disrupted U.S. credit and debit card transactions would be approximately $35 billion.30 Another way to gauge the potential for harm is in comparison to other similar noncyberattack infrastructure failures. For example, the August 2003 regional power grid blackout is estimated to have cost the U.S. economy up to $10 billion, or roughly .1 percent of the nation’s GDP. 31 That said, a cyberattack of the exact same magnitude would most certainly have a much larger impact. The origin of the 2003 blackout was almost immediately disclosed as an atypical system failure having nothing to do with terrorism. This made the event both less threatening and likely a single time occurrence. Had it been disclosed that the event was the result of an attack that could readily be repeated the impacts would likely have grown substantially, if not exponentially. Additionally, a cyberattack could also be used to disrupt our nation’s defenses or distract our national leaders in advance of a more traditional conventional or strategic attack. Many military leaders actually believe that such a disruptive cyber pre‐offensive is the most effective use of offensive cyber capabilities. This is, in fact, the way Russia utilized cyberattackers—whether government assets, governmentdirected/ coordinated assets, or allied cyber irregulars—in advance of the invasion of Georgia. Widespread distributed denial of service (DDOS) attacks were launched on the Georgian governments IT systems. Roughly a day later Russian armor rolled into Georgian territory. The cyberattacks were used to prepare the battlefield; they denied the Georgian government a critical communications tool isolating it from its citizens and degrading its command and control capabilities precisely at the time of attack. In this way, these attacks were the functional equivalent of conventional air and/or missile strikes on a nation’s communications infrastructure.32 One interesting element of the Georgian cyberattacks has been generally overlooked: On July 20th, weeks before the August cyberattack, the website of Georgian President Mikheil Saakashvili was overwhelmed by a more narrowly focused, but technologically similar DDOS attack.33 This should be particularly chilling to American national security experts as our systems undergo the same sorts of focused, probing attacks on a constant basis. The ability of an enemy to use a cyber attack to counter our offensive capabilities or soften our defenses for a wider offensive against the United States is much more than mere speculation. In fact, in Iraq it is already happening. Iraq insurgents are now using off‐the‐shelf software (costing just $26) to hack U.S. drones (costing $4.5 million each), allowing them to intercept the video feed from these drones.34 By hacking these drones the insurgents have succeeded in greatly reducing one of our most valuable sources of real‐time intelligence and situational awareness. If our enemies in Iraq are capable of such an effective cyberattack against one of our more sophisticated systems, consider what a more technologically advanced enemy could do. At the strategic level, in 2008, as the United States Central Command was leading wars in both Iraq and Afghanistan, a cyber intruder compromised the security of the Command and sat within its IT systems, monitoring everything the Command was doing. 35 This time the attacker simply gathered vast amounts of intelligence. However, it is clear that the attacker could have used this access to wage cyberwar—altering information, disrupting the flow of information, destroying information, taking down systems—against the United States forces already at war. Similarly, during 2003 as the United States prepared for and began the War in Iraq, the IT networks of the Department of Defense were hacked 294 times.36 By August of 2004, with America at war, these ongoing attacks compelled then‐Deputy Secretary of Defense Paul Wolfowitz to write in a memo that, "Recent exploits have reduced operational capabilities on our networks."37 This wasn’t the first time that our national security IT infrastructure was penetrated immediately in advance of a U.S. military option.38 In February of 1998 the Solar Sunrise attacks systematically compromised a series of Department of Defense networks. What is often overlooked is that these attacks occurred during the ramp up period ahead of potential military action against Iraq. The attackers were able to obtain vast amounts of sensitive information—information that would have certainly been of value to an enemy’s military leaders. There is no way to prove that these actions were purposefully launched with the specific intent to distract American military assets or degrade our capabilities. However, such ambiguities—the inability to specifically attribute actions and motives to actors—are the very nature of cyberspace. Perhaps, these repeated patterns of behavior were mere coincidence, or perhaps they weren’t. The potential that an enemy might use a cyberattack to soften physical defenses, increase the gravity of harms from kinetic attacks, or both, significantly increases the potential harms from a cyberattack. Consider the gravity of the threat and risk if an enemy, rightly or wrongly, believed that it could use a cyberattack to degrade our strategic weapons capabilities. Such an enemy might be convinced that it could win a war—conventional or even nuclear—against the United States. The effect of this would be to undermine our **deterrence**‐based defenses, making us significantly more at risk of a **major war.**

**These attacks jeopardize critical DoD military operations.**

**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.

**The plan solves grid collapse---SMR’s make bases resilient and deter attacks---they prevent 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.

**Nuclear war.**

**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?

**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.

**Academic theory confirms a strong US military prevents extinction.**

**Barnett 11** (Thomas P.M., Former Senior Strategic Researcher and Professor in the Warfare Analysis & Research Department, Center for Naval Warfare Studies, U.S. Naval War College American military geostrategist and Chief Analyst at Wikistrat., worked as the Assistant for Strategic Futures in the Office of Force Transformation in the Department of Defense, “The New Rules: Leadership Fatigue Puts U.S., and Globalization, at Crossroads,” March 7 <http://www.worldpoliticsreview.com/articles/8099/the-new-rules-leadership-fatigue-puts-u-s-and-globalization-at-crossroads>)

Events in Libya are a further reminder for Americans that we stand at a crossroads in our continuing evolution as the world's sole full-service superpower. Unfortunately, we are increasingly seeking change without cost, and shirking from risk because we are tired of the responsibility. We don't know who we are anymore, and our president is a big part of that problem. Instead of leading us, he explains to us. Barack Obama would have us believe that he is practicing strategic patience. But many experts and ordinary citizens alike have concluded that he is actually beset by strategic incoherence -- in effect, a man overmatched by the job. It is worth first examining the larger picture: We live in a time of arguably the greatest structural change in the global order yet endured, with this historical moment's most amazing feature being its relative and absolute lack of mass violence. That is something to consider when Americans contemplate military intervention in Libya, because if we do take the step to prevent larger-scale killing by engaging in some killing of our own, we will not be adding to some fantastically imagined global death count stemming from the ongoing "megalomania" and "evil" of American "empire." We'll be engaging in the same sort of system-administering activity that has marked our stunningly successful stewardship of global order since World War II. Let me be more blunt: As the guardian of globalization, the U.S. military has been the greatest force for peace the world has ever known. Had America been removed from the global dynamics that governed the 20th century, the mass murder never would have ended. Indeed, it's entirely conceivable there would now be no identifiable human civilization left, once nuclear weapons entered the killing equation. But the world did not keep sliding down that path of perpetual war. Instead, America stepped up and changed everything by ushering in our now-perpetual great-power peace. We introduced the international liberal trade order known as globalization and played loyal Leviathan over its spread. What resulted was the collapse of empires, an explosion of democracy, the persistent spread of human rights, the liberation of women, the doubling of life expectancy, a roughly 10-fold increase in adjusted global GDP and a profound and persistent reduction in battle deaths from state-based conflicts. That is what American "hubris" actually delivered. Please remember that the next time some TV pundit sells you the image of "unbridled" American military power as the cause of global disorder instead of its cure. With self-deprecation bordering on self-loathing, we now imagine a post-American world that is anything but. Just watch who scatters and who steps up as the Facebook revolutions erupt across the Arab world. While we might imagine ourselves the status quo power, we remain the world's most vigorously revisionist force. As for the sheer "evil" that is our military-industrial complex, again, let's examine what the world looked like before that establishment reared its ugly head. The last great period of global structural change was the first half of the 20th century, a period that saw a death toll of about 100 million across two world wars. That comes to an average of 2 million deaths a year in a world of approximately 2 billion souls. Today, with far more comprehensive worldwide reporting, researchers report an average of less than 100,000 battle deaths annually in a world fast approaching 7 billion people. Though admittedly crude, these calculations suggest a 90 percent absolute drop and a 99 percent relative drop in deaths due to war. We are clearly headed for a world order characterized by multipolarity, something the American-birthed system was designed to both encourage and accommodate. But given how things turned out the last time we collectively faced such a fluid structure, we would do well to keep U.S. power, in all of its forms, deeply embedded in the geometry to come. To continue the historical survey, after salvaging Western Europe from its half-century of civil war, the U.S. emerged as the progenitor of a new, far more just form of globalization -- one based on actual free trade rather than colonialism. America then successfully replicated globalization further in East Asia over the second half of the 20th century, setting the stage for the Pacific Century now unfolding.

### Adv 2 – Water

**Advantage Two – Desalination**

**Water scarcity coming now --- it's a threat multiplier that enflames hotspots globally. Their defense is not predictive.**

**Dinar et al 10/18**/12 SHLOMI DINAR is associate professor in the Department of Politics and International Relations and associate director of the School of International and Public Affairs at Florida International University. LUCIA DE STEFANO is associate professor at Complutense University of Madrid and researcher at the Water Observatory of the Botín Foundation. JAMES DUNCAN is consultant on natural resource governance and geography with the World Bank. KERSTIN STAHL is senior scientist at the Institute of Hydrology in the University of Freiburg. KENNETH M. STRZEPEK is research scientist with the Massachusetts Institute of Technology Joint Program on the Science and Policy of Global Change. AARON T. WOLF is a professor of geography in the College of Earth, Ocean, and Atmospheric Sciences at Oregon State University, Foreign Affairs, October 18, 2012, "No Wars for Water", http://www.foreignaffairs.com/articles/138208/shlomi-dinar-lucia-de-stefano-james-duncan-kerstin-stahl-kenneth/no-wars-for-water?page=show

In short, predictions of a Water World War are overwrought. However, tensions over water usage can still exacerbate other existing regional conflicts. Climate change is expected to intensify droughts, floods, and other extreme weather conditions that jeopardize freshwater quantity and quality and therefore act as a threat-multiplier, making shaky regions shakier. So what river basins constitute the biggest risks today? In a World Bank report we published in 2010 (as well as a subsequent article in a special issue of the Journal of Peace Research) we analyzed the physical effects of climate change on international rivers. We modeled the variability in river annual runoff in the past and for future climate scenarios. We also considered the existence and nature of the institutional capacity around river basins, in the form of international water treaties, to potentially deal with the effects of climate change. According to our research, 24 of the world's 276 international river basins are already experiencing increased water variability. These 24 basins, which collectively serve about 332 million people, are at high risk of water related political tensions. The majority of the basins are located in northern and sub-Saharan Africa. A few others are located in the Middle East, south-central Asia, and South America. They include the Tafna (Algeria and Morocco), the Dasht (Iran and Pakistan), the Congo (Central Africa), Lake Chad (Central Africa), the Niger (Western Africa), the Nile (Northeastern Africa), and the Chira (Ecuador and Peru). There are no strong treaties governing the use of these water reserves in tense territories. Should conflicts break out, there are no good mechanisms in place for dealing with them. By 2050, an additional 37 river basins, serving 83 million people, will be at high risk for feeding into political tensions. As is the case currently, a large portion of these are in Africa. But, unlike today, river basins within Central Asia, Eastern Europe, Central Europe, and Central America will also be at high risk within 40 years. Some of these include the Kura-Araks (Iran, Turkey, and the Caucasus), the Neman (Eastern Europe) Asi-Orontes (Lebanon, Syria, Turkey), and the Catatumbo Basins (Colombia and Venezuela). CROSSING THE NILE Among the larger African basins, the Nile has the greatest implications for regional and global security. Tensions over access to the river already pit Ethiopia and Egypt, two important Western allies, against one another. Egypt has been a major player in the Middle East Peace Process and Ethiopia is an important regional force in the Horn of Africa, currently aiding other African forces to battle Al-Shabbab in Somalia. Over the years, a number of international water treaties have made rules for the basin, but they are largely limited to small stretches of it. In particular, only Egypt and Sudan are party to the 1959 Nile River Agreement, the principal treaty regarding the river. Egypt, which is the furthest downstream yet is one of the most powerful countries in the region, has been able to heavily influence the water-sharing regime. Upstream countries, such as Ethiopia and Burundi, have been left out, hard-pressed to harness the Nile for their own needs. In 1999, with increasingly vitriolic rhetoric between Egypt and Ethiopia sidetracking regional development, the World Bank stepped up its involvement in the basin. It helped create a network of professional water managers as well as a set of investments in a number of sub-basins. Still, the drafting of a new agreement stalled: upstream countries would not compromise on their right to develop water infrastructure while downstream countries would not compromise on protecting their shares. In 2010, Ethiopia signed an agreement with a number of the other upstream countries hoping to balance against Egypt and Sudan. More recently, the country has also announced plans to construct a number of large upstream dams, which could affect the stability of the region. By 2050, the environmental state of the Nile Basin will be even worse. That is why it is important to create a robust and equitable water treaty now. Such a treaty would focus on ways to harness the river's hydropower potential to satiate the energy needs of all the riparian states while maintaining ecosystem health. The construction of dams and reservoirs further upstream could likewise help even out water flows and facilitate agricultural growth. Projects such as these, mitigating damage to ecosystem health and local populations, would benefit all parties concerned and thus facilitate further basin-wide cooperation. UP IN THE ARAL Another water basin of concern is the Aral Sea, which is shared by Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. The basin consists of two major rivers, the Syr Darya and Amu Darya. During the Soviet era, these two rivers were managed relatively effectively. The break-up of the Soviet Union, however, ended that. The major dispute now is between upstream Kyrgyzstan and downstream Uzbekistan over the Syr Darya. During the winter, Kyrgyzstan needs flowing water to produce hydroelectricity whereas Uzbekistan needs to store water to later irrigate cotton fields. The countries have made several attempts to resolve the dispute. In particular, downstream Uzbekistan, which is rich in fuel and gas, has provided energy to Kyrgyzstan to compensate for keeping water in its large reservoirs until the cotton-growing season. Such barter agreements, however, have had limited success because they are easily manipulated. Downstream states might deliver less fuel during a rainy year, claiming they need less water from upstream reservoirs, and upstream states might deliver less water in retaliation. Kyrgyzstan, frustrated and desperate for energy in winter months, plans to build mega hydro-electric plants in its territory. And another upstream state, Tajikistan, is likewise considering hydro-electricity to satiate its own energy needs. Meanwhile, Uzbekistan is building large reservoirs. Although these plans might make sense in the very near term, they are inefficient in the medium and long term because they don't solve the real needs of downstream states for large storage capacity to protect against water variability across time. In fact, both Kyrgyzstan and Uzbekistan, along with Kazakhstan, will see substantial increases in water variability between now and 2050. And so, the need to share the benefits of existing large-capacity upstream reservoirs and coordinate water uses through strong and more efficient inter-state agreements is unavoidable. A stabilized Aral Sea basin would also benefit the United States. With its withdrawal from Afghanistan, Washington has been courting Uzbekistan as a potential alternative ally and provider of stability in the region. The Uzbek government seems willing to host U.S. military bases and work as a counter-weight to Russia. Kyrgyzstan is also an important regional player. The Manas Air Base, the U.S. military installation near Bishkek, is an important transit point. The country is also working with the United States to battle drug trafficking and infiltration of criminal and insurgent groups. Regional instability could disrupt any of these strategic relationships. If the past is any indication, the world probably does not need to worry about impending water wars. But they must recognize how tensions over water can easily fuel larger conflicts and distract states from other important geopolitical and domestic priorities. Since formal inter-state institutions are key to alleviating tensions over shared resources, it would be wise, then, for the involved governments as well as the international community to negotiate sufficiently robust agreements to deal with impending environmental change. Otherwise, freshwater will only further frustrate stability efforts in the world's volatile regions.

**Ignore impact defense that does not account for current tensions.**

**Bhalla 12** (Nita, Staff Writer @ Reuters, *Thirsty South Asia's river rifts threaten "water wars"*, July 23rd, Lexis)

As the silver waters of the Kishanganga rush through this north Kashmir valley, Indian laborers are hard at work on a hydropower project that will dam the river just before it flows across one of the world's most heavily militarized borders into Pakistan.

The hum of excavators echoes through the pine-covered valley, clearing masses of soil and boulders, while army trucks crawl through the steep Himalayan mountain passes.

The 330-MW dam is a symbol of India's growing focus on hydropower but also highlights how water is a growing source of tension with downstream Pakistan, which depends on the snow-fed Himalayan rivers for everything from drinking water to agriculture.

Islamabad has complained to an international court that the dam in the Gurez valley, one of dozens planned by India, will affect river flows and is illegal. The court has halted any permanent work on the river for the moment, although India can still continue tunneling and other associated projects.

In the years since their partition from British India in 1947, land disputes have led the two nuclear-armed neighbors to two of their three wars. Water could well be the **next flashpoint**.

"There is definitely potential for conflict based on water, particularly if we are looking to the year 2050, when there could be considerable water scarcity in India and Pakistan," says Michael Kugelman, South Asia Associate at the Woodrow Wilson International Center for Scholars in Washington.

"Populations will continue to grow. There will be more pressure on supply. Factor in climate change and faster glacial melt ... That means much more will be at stake. So you could have a **perfect storm** which conceivably could be some sort of trigger.

It's not just South Asia -- water disputes are a global phenomenon, sparked by growing populations, rapid urbanization, increased irrigation and a rising demand for alternative power such as hydroelectricity.

**Turkey**, **Syria**, **Iran** and **Iraq** quarrel over the waters of the Tigris and Euphrates. The Jordan river divides **Israel**, **Jordan**, **Lebanon** and the **West Bank**. **Ten African countries** begrudgingly share the Nile.

In Southeast Asia, **China** and **Laos** are building dams over the mighty Mekong, raising tensions with downstream nations.

A U.S. intelligence report in February warned fresh water supplies are unlikely to keep up with global demand by 2040, increasing political instability, hobbling economic growth and endangering world food markets.

A "water war" is unlikely in the next decade, it said, but beyond that rising demand and scarcities due to climate change and poor management will increase the risk of conflict.

MAJOR THREAT

That threat is possibly nowhere more apparent than in South Asia, home to a fifth of humanity and rife with historical tensions, mistrust and regional rivalries.

The region's three major river systems - the Indus, the Ganges and the Brahmaputra - sustain **India** and **Pakistan's** breadbasket states and many of their major cities including New Delhi and Islamabad, as well as Bangladesh.

"South Asia is symbolic of what we are seeing in terms of water stress and tensions across the world," says B.G. Verghese, author and analyst at New Delhi's Centre for Policy Research.

The region is one of the world's most water-stressed, yet the population is adding an extra 25 million people a year - South Asia's per capita water availability has dropped by 70 percent since 1950, says the Asian Development Bank.

The effect of climate change on glaciers and rainfall patterns may be crucial.

"Most of the water that is used in Pakistan comes from glacial melt or the monsoon," says Rafay Alam, an environmental lawyer and coordinator of the water program at Lahore University of Management Sciences.

The dry months of June-July offer a snapshot of the extreme water crisis in the region.

Hospitals in New Delhi this year cancelled surgeries because they had no water to sterilize instruments, clean operating theatres or even wash hands. Swanky malls selling luxury brands were forced to switch off air conditioners and shut toilets.

In Pakistan, the port town of Gwadar ran out of water entirely, forcing the government to send two naval water tankers. Some government flats in the garrison city of Rawalpindi have not had water for weeks, said the local press.

India, as both an upper and lower riparian nation, finds itself at the centre of water disputes with its eastern and western downstream neighbors -- **Bangladesh** and Pakistan -- which accuse New Delhi of monopolizing water flows.

To the north and northeast, India fears the same of upstream China, with which it fought a brief border war in 1962. Beijing plans a series of dams over the Tsangpo river, called the Brahmaputra as it flows into eastern India.

**Capability asymmetry and desperation results in nuclear escalation.**

**Zahoor 12** (Musharaf, Researcher at Department of Nuclear Politics – National Defense University, *Water Crisis can Trigger Nuclear War in South Asia*, http://www.siasat.pk)

Water is an ambient source, which unlike human beings does not respect boundaries. Water has been a permanent source of conflict between the tribes since biblical times and now between the states. The conflicts are much more likely among those states, which are mainly dependent on shared water sources. The likelihood of turning these conflicts into wars is increased when these countries or states are mainly arid or receive low precipitations. In this situation, the upper riparian states (situated on upper parts of a river basin) often try to maximize water utility by neglecting the needs of the lower riparian states (situated on low lying areas of a river basin). However, international law on distribution of trans-boundary river water and mutually agreed treaties by the states have helped to some extent in overcoming these conflicts. In the recent times, the climate change has also affected the water availability. The absence of water management and conservation mechanisms in some regions particularly in the third world countries have exacerbated the water crisis. These states have become prone to **wars in future**. South Asia is among one of those regions where water needs are growing disproportionately to its availability. The high increase in population besides large-scale cultivation has turned South Asia into a water scarce region. The two **nuclear neighbors** Pakistan and India share the waters of Indus Basin. All the major rivers stem from the Himalyan region and pass through Kashmir down to the planes of Punjab and Sindh empty into Arabic ocean. It is pertinent that the strategic importance of Kashmir, a source of all major rivers, for Pakistan and symbolic importance of Kashmir for India are maximum list positions. Both the countries have fought two major wars in 1948, 1965 and a limited war in Kargil specifically on the Kashmir dispute. Among other issues, the newly born states fell into water sharing dispute right after their partition. Initially under an agreed formula, Pakistan paid for the river waters to India, which is an upper riparian state. After a decade long negotiations, both the states signed Indus Water Treaty in 1960. Under the treaty, India was given an exclusive right of three eastern rivers Sutlej, Bias and Ravi while Pakistan was given the right of three Western Rivers, Indus, Chenab and Jhelum. The tributaries of these rivers are also considered their part under the treaty. It was assumed that the treaty had permanently resolved the water issue, which proved a nightmare in the latter course. India by exploiting the provisions of IWT started wanton construction of dams on Pakistani rivers thus scaling down the water availability to Pakistan (a lower riparian state). The treaty only allows run of the river hydropower projects and does not permit to construct such water reservoirs on Pakistani rivers, which may affect the water flow to the low lying areas. According to the statistics of Hydel power Development Corporation of Indian Occupied Kashmir, India has a plan to construct 310 small, medium and large dams in the territory. India has already started work on 62 dams in the first phase. The cumulative dead and live storage of these dams will be so great that India can easily **manipulate** the water of Pakistani rivers. India has set up a department called the Chenab Valley Power Projects to construct power plants on the Chenab River in occupied Kashmir. India is also constructing three major hydro-power projects on Indus River which include Nimoo Bazgo power project, Dumkhar project and Chutak project. On the other hand, it has started Kishan \*\*\*\*\* hydropower project by diverting the waters of Neelum River, a tributary of the Jhelum, in sheer violation of the IWT. The gratuitous construction of dams by India has created serious water shortages in Pakistan. The construction of Kishan \*\*\*\*\* dam will turn the Neelum valley, which is located in Azad Kashmir into a barren land. The water shortage will not only affect the cultivation but it has serious social, political and economic ramifications for Pakistan. The farmer associations have already started protests in Southern Punjab and Sindh against the non-availability of water. These protests are so far limited and under control. The reports of international organizations suggest that the water availability in Pakistan will reduce further in the coming years. If the situation remains unchanged, the violent mobs of villagers across the country will be a major law and order challenge for the government. The water shortage has also created mistrust among the federative units, which is evident from the fact that the President and the Prime Minister had to intervene for convincing Sindh and Punjab provinces on water sharing formula. The Indus River System Authority (IRSA) is responsible for distribution of water among the provinces but in the current situation it has also lost its credibility. The provinces often accuse each other of water theft. In the given circumstances, Pakistan desperately wants to talk on water issue with India. The meetings between Indus Water Commissioners of Pakistan and India have so far yielded no tangible results. The recent meeting in Lahore has also ended without concrete results. India is continuously using delaying tactics to under pressure Pakistan. The Indus Water Commissioners are supposed to resolve the issues bilaterally through talks. The success of their meetings can be measured from the fact that Pakistan has to knock at international court of arbitration for the settlement of Kishan \*\*\*\*\* hydropower project. The recently held foreign minister level talks between both the countries ended inconclusively in Islamabad, which only resulted in heightening the mistrust and suspicions. The water stress in Pakistan is increasing day by day. The construction of dams will not only cause damage to the agriculture sector but India can manipulate the river water to create inundations in Pakistan. The rivers in Pakistan are also vital for defense during wartime. The control over the water will provide an edge to India during war with Pakistan. The failure of diplomacy, manipulation of IWT provisions by India and growing water scarcity in Pakistan and its social, political and economic repercussions for the country can lead both the countries toward a war. The existent asymmetry between the conventional forces of both the countries will compel the weaker side to **use nuclear weapons** to prevent the opponent from taking any advantage of the situation. Pakistan's nuclear programme is aimed at to create minimum credible deterrence. India has a declared nuclear doctrine which intends to retaliate massively in case of first strike by its' enemy. In 2003, India expanded the operational parameters for its nuclear doctrine. Under the new parameters, it will not only use nuclear weapons against a nuclear strike but will also use nuclear weapons against a nuclear strike on Indian forces anywhere. Pakistan has a draft nuclear doctrine, which consists on the statements of high ups. Describing the nuclear thresh-hold in January 2002, General Khalid Kidwai, the head of Pakistan's Strategic Plans Division, in an interview to Landau Network, said that Pakistan will use nuclear weapons in case India occupies large parts of its territory, economic strangling by India, political disruption and if India destroys Pakistan's forces. The analysis of the ambitious nuclear doctrines of both the countries clearly points out that any military confrontation in the region can result in a **nuclear catastrophe**. The rivers flowing from Kashmir are Pakistan's lifeline, which are essential for the livelihood of 170 million people of the country and the cohesion of federative units. The failure of dialogue will leave no option but to achieve the ends through military means. The only way to discard the lurking fear of a nuclear cataclysm is to settle all the outstanding disputes amicably through dialogue. The international community has a special role in this regard. It should impress upon India to initiate meaningful talks to resolve the lingering Kashmir dispute with Pakistan and implement the water treaty in its letter and spirit. The Indian leadership should drive out its policy towards Pakistan from terrorism mantra to a solution-oriented dialogue process. Both the countries should adopt a joint mechanism to maximize the utility of river waters by implementing the 1960 treaty, Besides negotiations with India, Pakistan should start massive water conservation and management projects. The modern techniques in agriculture like i.e. drip irrigation, should be adopted. On the other hand, there is a dire need to gradually upgrade the obsolete irrigation system in Pakistan. The politicization of mega hydropower projects/dams is also a problem being faced by Pakistan, which can only be resolved through political will.

**There are numerous nuclear flashpoints worldwide.**

**NASCA 6** (National Association for Scientific & Cultural Appreciation, *Water Shortages – Only A Matter Of Time*, http://www.nasca.org.uk/Strange\_relics\_/water/water.html)

Water is one of the prime essentials for life as we know it. The plain fact is - no water, no life! This becomes all the more worrying when we realise that the worlds supply of drinkable water will soon diminish quite rapidly. In fact a recent report commissioned by the United Nations has emphasised that by the year 2025 at least 66% of the worlds population will be without an adequate water supply. As a disaster in the making water shortage ranks in the top category. Without water we are finished, and it is thus imperative that we protect the mechanism through which we derive our supply of this life giving fluid. Unfortunately the exact opposite is the case. We are doing incalculable damage to the planets capacity to generate water and this will have far ranging consequences for the not too distant future. The United Nations has warned that burning of fossil fuels is the prime cause of water shortage. While there may be other reasons such as increased solar activity it is clear that this is a situation over which we can exert a great deal of control. If not then the future will be very bleak indeed! Already the warning signs are there. The last year has seen devastating heatwaves in many parts of the world including the USA where the state of Texas experienced its worst drought on record. Elsewhere in the United States forest fires raged out of control, while other regions of the globe experienced drought conditions that were even more severe. Parts of Iran, Afghanistan, China and other neighboring countries experienced their worst droughts on record. These conditions also extended throughout many parts of Africa and it is clear that if circumstances remain unchanged we are facing a disaster of epic proportions. Moreover it will be one for which there is no easy answer. The specter of a world water shortage evokes a truly frightening scenario. In fact the United Nations warns that disputes over water will become the **prime source** of conflict in the not too distant future. Where these shortages become ever more acute it could forseeably lead to the brink of **nuclear conflict**. On a lesser scale water, and the price of it, will acquire an importance somewhat like the current value placed on oil. The difference of course is that while oil is not vital for life, water most certainly is! It seems clear then that in future years countries rich in water will enjoy an importance that perhaps they do not have today. In these circumstances power shifts are inevitable, and this will undoubtedly create its own strife and tension. In the long term the implications do not look encouraging. It is a two edged sword. First the shortage of water, and then the increased stresses this will impose upon an already stressed world of politics. It means that answers need to be found immediately. Answers that will both ameliorate the damage to the environment, and also find new sources of water for future consumption. If not, and the problem is left unresolved there will eventually come the day when we shall find ourselves with a **nightmare situation** for which there will be no obvious answer.

**SMR’s de-escalate conflicts.**

**Palley 11** (Reese, The London School of Economics, 2011, The Answer: Why Only Inherently Safe, Mini Nuclear Power Plans Can Save Our World, p. 168-71)

The third world has long been rent in recent droughts, by the search for water. In subsistence economies, on marginal land, water is not a convenience but a matter of life and death. As a result small **wars have been fought**, rivers diverted, and wells poisoned in what could be a warning of what is to come as industrialized nations begin to face failing water supplies. Quite aside from the demand for potable water is the dependence of enormous swaths of industry and agriculture on oceans of water used for processing, enabling, and cleaning a thousand processes and products. It is interesting to note that fresh water used in both industry and agriculture is reduced to a nonrenewable resource as agriculture adds salt and industry adds a chemical brew unsuitable for consumption. More than **one billion people** in the world already lack access to clean water, and things are getting worse. Over the next two decades, the average supply of water per person will drop by a third, **condemning millions** of people to waterborne **diseases** and an avoidable premature death.81 So the stage is set for water access wars between the **first and the third worlds**, between **neighbors** downstream of supply, between **big industry** and big agriculture, between **nations**, between **population centers**, and ultimately between you and the people who live next door for an already inadequate world water supply that is not being renewed. As populations inevitably increase, **conflicts will intensify**.82 It is only by virtue of the historical accident of the availability of nuclear energy that humankind now has the ability to remove the salt and other pollutants to supply all our water needs. The problem is that desalination is an intensely local process. Some localities have available sufficient water from renewable sources to take care of their own needs, but not enough to share with their neighbors, and it is here that the scale of nuclear energy production must be defined locally. Large scale 1,000 MWe plants can be used to desalinate water as well as for generating electricity However we cannot build them fast enough to address the problem, and, if built they would face the extremely expensive problem of distributing the water they produce. Better, much better, would be to use small desalinization plants sited locally. Beyond desalination for human use is the need to green some of the increasing desertification of vast areas such as the Sahara. Placing twenty 100 MWe plants a hundred miles apart along the Saharan coast would green the coastal area from the Atlantic Ocean to the Red Sea, a task accomplished more cheaply and quickly than through the use of gigawatt plants.83 This could proceed on multiple tracks wherever deserts are available to be reclaimed. Leonard Orenstein, a researcher in the field of desert reclamation, speculates: If most of the Sahara and Australian outback were planted with fast-growing trees like eucalyptus, the forests could draw down about 8 billion tons of carbon a year—nearly as much as people emit from burning fossil fuels today. As the forests matured, they could continue taking up this much carbon for decades.84 The use of small, easily transported, easily sited, and walk away safe nuclear reactors dedicated to desalination is **the only answer** to the disproportionate distribution of water resources that have distorted human habitation patterns for millennia. Where there existed natural water, such as from rivers, great cities arose and civilizations flourished. Other localities lay barren through the ages. We now have the power, by means of SMRs profiled to local conditions, not only to attend to existing water shortages but also to smooth out **disproportionate water distribution** and create green habitation where historically it has never existed. The **endless wars** that have been fought, first over solid bullion gold and then over oily black gold, can now engulf us in the desperate reach for liquid blue gold. We need **never fight these wars** again as we now have the nuclear power to fulfill the biblical ability to “strike any local rock and have water gush forth.”

**SMRs are uniquely suited to solve scarcity.**

**IAEA 7** (International Atomic Energy Agency, *Economics of Nuclear Desalination: New Developments and Site Specific Studies*, Final Results of a Coordinated Research Project 2002–2006, July 2007, http://www-pub.iaea.org/MTCD/Publications/PDF/te\_1561\_web.pdf)

1.2. DESALINATION AS AN ALTERNATE SOURCE OF FRESH WATER

Seventy percent of the planet is covered with water, but only 2.5% of that is fresh water. Nearly 70% of this fresh water is frozen in the icecaps of Antarctica and Greenland. Most of the rest is in the form of soil moisture or in deep inaccessible aquifers or comes in the form of heavy rains and floods that are difficult to contain and exploit. Consequently, only less than **0.008%** (about 70 000 km3) of the world’s water is readily accessible for direct human use, and even that is very **unevenly distributed**.

Recent statistics show that currently **2.3 billion** people live in water-stressed areas and among them 1.7 billion live in water-scarce areas, where the water availability per person is less than 1000 m3/year.

In fact, the situation is expected to **worsen** further since, by 2025, the number of people suffering from water stress or scarcity could swell to 3.5 billion, out of which 2.4 billion would live in water-scarce regions. Water scarcity is a global issue. Every year new countries are affected by growing water problems.

It is for this reason that the Millennium Declaration by UN General Assembly in 2000 set up a target to halve, by the year 2015, the world population, which is unable to reach, or to afford, safe drinking water. Vision 21: shared vision for Hygiene, Water Supply and Sanitation, has a target to provide water, sanitation and hygiene for all by 2025.

Better water conservation, water management, pollution control and water reclamation are all part of the integrated solution to projected water stresses. So too are new sources of fresh water, including the desalination of seawater.

Desalination technologies have been **well established** since the mid-20th century and widely deployed in the Middle East and North Africa. The contracted capacity of desalination plants has increased steadily since 1965 and is now about 36 million m3/day worldwide, as shown in Figure 1. This capacity could cater to world’s population roughly 6 litres a day per capita of fresh potable water. If this capacity were available to 1.5 billion in the world without direct access to drinking water, it would provide approximately **20 liters per day per capita**.

Large scale commercially available desalination processes can generally be classified into two categories: (a) distillation processes that require mainly heat plus some electricity for ancillary equipment, and (b) membrane processes that require only electricity. In the first category (distillation) there are two major processes: multi-stage flash (MSF) and multi-effect distillation (MED). In both processes, seawater is heated; the steam that evaporates is condensed and collected as freshwater; and the residual brine is discharged.

In the second category (membranes) is the reverse osmosis process (RO), in which pure water passes from the high-pressure seawater side of a semi-permeable membrane to the low-pressure freshwater side. The pressure differential must be high enough to overcome the natural tendency for water to move from the low concentration freshwater side of a membrane to the high concentration seawater side in order to balance osmotic pressures.

The energy for the desalination plants is generally supplied in the form of either steam or electricity. Conventional fossil fuel-powered plants have normally been utilized as the primary sources but their intensive use raises increasing environmental concerns, specifically in relation to greenhouse gas emissions (Section 1.3.3). The depleting sources and the future price uncertainty of the fossil fuels and their better use for other vital industrial applications are also the factors to be considered.

1.3. THE ROLE OF NUCLEAR POWER IN DESALINATION

The world energy requirements are presently met from oil, coal, gas, hydro, nuclear and renewable energies in that order as shown in Table 1.

It is now universally recognized that there will be an increase in the world’s requirement for electricity over the next few decades. The present trend towards meeting this demand includes the building of fossil fuel plants, particularly combined cycle gas fired plants.

However, the spiralling increase in greenhouse gas (GHG) emissions has resulted in setting the emission targets in international meetings held at Toronto, Rio de Janeiro and Kyoto. The IAEA predicts that the GHG emissions would be 36-50% higher by 2010 compared to 1990 levels. Many analysts, therefore, feel that the **only viable alternative** to fossil fuels is nuclear energy to reduce the rate of increase of GHG, particularly, carbon dioxide.

Yet another incentive for nuclear power is to maintain diversity of supply. A national strategy limited to one particular form of energy (fossil fuels) will be vulnerable to increased fuel costs and pressures from exporting countries.

Nuclear power is a **proven technology**, which has provided more than 16% of world electricity supply in over 30 countries. More than ten thousand reactor-years of operating experience have been accumulated over the past 5 decades.

There are many reasons which favour a possible revival of the nuclear power production in the years to come. It is thus expected that this revival would also lead to an increased role of nuclear energy in non-electrical energy services, which, at the moment, are almost entirely dominated by fossil energy sources. Among various utilization of nuclear energy for non-electrical products, using it for the production of freshwater from seawater (nuclear desalination) has been drawing broad interest in the IAEA Member States as a result of acute water shortage issues in many arid and semi-arid zones worldwide. With technical co-ordination or support of the IAEA, several **demonstration programs** of nuclear desalination are also in progress in several Member States to confirm its technical and economical viability under country-specific conditions The desalination of seawater using nuclear energy is a **feasible option** to meet the growing demand for potable water. Over 175 reactor-years of operating experience on nuclear desalination have already been accumulated worldwide.

1.3.1. Nuclear desalination

In the IAEA terminology, nuclear desalination is defined to be the production of potable water from seawater in a facility in which a nuclear reactor is used as the source of energy for the desalination process. Electrical and/or thermal energy may be used in the desalination process on the same site. The facility may be dedicated solely to the production of potable water, or may be used for the generation of electricity and production of potable water, in which case only a portion of the total energy output of the reactor is used for water production.

The design approaches for a nuclear desalination plant are essentially derived from those of the nuclear reactor alone, with some additional aspects to be considered in the design of a desalination plant and its integration with the nuclear system.

All nuclear reactor types can provide the energy required by the various desalination processes. In this regard, it has been shown that Small and Medium Reactors (**SMRs**) offer the largest potential as coupling options to nuclear desalination systems in developing countries. The development of innovative reactor concepts and fuel cycles with enhanced safety features as well as their attractive economics are expected to improve the public acceptance and further the prospects of nuclear desalination.

The coupling with nuclear system is **not difficult** technically but needs some consideration in (a) avoiding cross-contamination by radioactivity, (b) providing backup heat or power sources in case the nuclear system is not in operation (e.g. for refuelling and maintenance), (c) incorporation of certain design features, minimising the impact of the thermal desalination systems’ coupling to the nuclear reactors (Section 1.6).

1.3.2. Why nuclear desalination?

The International Atomic Energy Agency is a specialized organization of the UN system that seeks to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. The institutional basis for the IAEA’s involvement in nuclear desalination is in its Statute and Medium Term Strategy.

Article II of the IAEA Statute provides that: “ The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health

and prosperity throughout the world”.

This refers implicitly to nuclear desalination as an option for the use of nuclear technologies. The same applies to the Article III of the Statute, which authorizes the IAEA:

“ To encourage and assist research on, and development and practical application of, atomic energy for peaceful uses throughout the world....”; (Article III, A.1); and

“To foster the exchange of scientific and technical information on peaceful uses of atomic energy.”

(Article III, A.3).

In addition, Objective A.3 of the Agency’s Medium Term Strategy requires the Agency:

“ To support and facilitate the development of new and emerging applications of nuclear technologies by co-generation and heat applications, including seawater desalination”.

Request of assessing feasibility of using nuclear energy for seawater desalination was first made by the five North African countries to the IAEA in 1989 and the General Conference adopted its resolution to resume the study. These countries are located in semi-arid zones and already suffer from water shortages.

In recent years, interests have been also been indicated by Member States in South and South East Asia for the feasibility, as well as the demonstration, of nuclear desalination projects. The issue has since then been repeatedly stressed at the General Conference (Committee on the Whole) and supported by many Member States including most members of Group-77. The support stems not only from their expectation of its possible contribution to the freshwater issue but has also been motivated by a variety of reasons that include: the economic competitiveness of nuclear desalination in areas lacking cheap hydropower or fossil fuel resources, energy supply diversification, conservation of fossil fuel resources and spin-off effects of nuclear technology for industrial development.

Looking to the future, there are several reasons for focusing now on expanding nuclear power’s contribution to desalination. Apart from the expanding demand for freshwater and the increasing concern about GHG emissions and pollution from fossil fuels, there is a renewed and growing emphasis on small and medium sized nuclear reactors, and this is particularly important for desalination because the countries most in need of new sources of freshwater often have **limited** industrial **infrastructures** and relatively **weaker** electricity **grids**. The size of the grid limits the possibilities for integrating a co-generating nuclear power plant into the grid to supply the electricity market, in addition to meeting the energy requirements of a desalination plant. The largest power unit that can be integrated into an electricity grid must not exceed about 10-20 % of the total grid capacity. Of course, smaller nuclear reactors would be more appropriate for remote areas that are not suitable for connections to the grid.

For nuclear desalination to be attractive in any given country, two conditions have to be satisfied simultaneously: a lack of water and the ability to use nuclear energy for desalination. In most regions, only one of the two is present. Both are present for example in China, the Republic of Korea, India and Pakistan. These regions already account for almost half the world’s population, and thus represent a potential long term market for nuclear desalination. The market will expand further to the extent that regions with high projected water needs, such as the Middle East and North Africa, increase their nuclear expertise and capabilities.

**Only a robust domestic industry ensures exports.**

**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.

### Plan

**Plan --- The United States federal government should obtain electricity from small modular reactors for critical military installations in the United States and exempt the Department of Defense from relevant small modular reactor restrictions.**

### Solvency

**Contention Three – Solvency**

**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.

**Absent military involvement SMRs will not come to market.**

**Cohen 12** (Armond, Executive Director – Clean Air Task Force, *DoD: A Model for Energy Innovation?*, http://energy.nationaljournal.com/2012/05/powering-our-military-whats-th.php#2211477)

Recently, the Clean Air Task Force and our colleagues at The Consortium for Science, Policy and Outcomes at Arizona State University, assessed the opportunities and challenges at the U.S. Department of Defense for accelerating a national and even global transition to advanced and clean energy technologies.

Building on background papers, a workshop, new research, and a previous project that articulated foundational principles for federal energy innovation policies, this report identified the sources of DoD’s success in fostering new technology that can be applied to both civilian energy innovation efforts and future defense-related energy efforts.

Unlike most other agencies, including the Energy Department, the Pentagon is the ultimate customer for the new technology it helps create, spending some $200 billion each year on R&D and procurement. The implications of DoD’s role as customer have not been widely appreciated, as:

· DoD, uniquely in government, supports multi-year, billion-dollar “end to end” innovation efforts that produce technology that is continuously tested, deployed and refined on bases and in the field, providing **real world feedback** that leads to **increases in performance** and **reductions in cost**. By contrast, most of the federal government’s civilian energy innovation efforts involve research loosely connected at best with the few commercialization efforts that it supports.

· DoD and its contractors know how to **bring together multiple innovations** to achieve **system-level advances** leading to **big performance gains** (examples range from nuclear submarines to unmanned aircraft to large-scale information systems). This systems approach is precisely what is needed to advance clean energy technologies.

· Relatively stable, multi-year funding allows the Pentagon to pursue “long cycle” innovation that is necessary for large, capital- intensive technologies and supports a highly capable contractor base that can respond to changing national security demands.

· The Pentagon’s scope and budget has allowed it to **experiment** with new and **creative innovation tools** such as the well-known Defense Advanced Projects Research Agency, which has produced extraordinary technological breakthroughs; and the Environmental Security Technology Certification Program, which develops and demonstrates cost-effective improvements in environmental and energy technologies for military installations and equipment.

· Because of DoD’s size and demands for performance and reliability, it is unique among government and private sector organizations as a **demonstration test-bed**. Smart-grid technologies and advanced energy management systems for buildings are already poised to benefit from this aspect of the Pentagon’s innovation system.

· DoD has collaborated effectively with other federal agencies, including the Department of Energy and its predecessors (for example, to advance nuclear energy technologies). Continuing competition and cooperation between DoD and DOE will spur energy innovation.

DoD’s innovation capabilities can enhance U.S. national security, improve U.S. international competitiveness, and spur global energy restructuring and greenhouse gas emissions reductions.

At the same time, while providing enormous opportunities to develop and test energy efficiency technologies and small scale distributed energy appropriate to forward bases, the Pentagon is unlikely to become an all-purpose hub for advancing all categories of clean-energy technologies, because its energy innovation activities will be sustainable only where they can support the nation’s defense capabilities.

Therefore, many other large-scale technologies that are of great importance to improving the environment, such as carbon-free central station generation or zero carbon transportation, may not as easily fit with DoD’s mission. Possible exceptions might include small modular nuclear reactors that can be used for producing independent, non-grid power at military bases, or, conceivably, zero-carbon liquid fuels other than anything resembling current generation biofuels.

In any case, the challenge for military-led energy innovation is to further define and delineate avenues for improved clean-energy performance that are linked to the national strategic mission. History shows that when such linkages are strong, DoD’s innovation capabilities are **second to none**.

But perhaps the more important lesson from this work is that a serious American program of civilian energy innovation could profitably look to Pentagon history for clues about how to succeed. Stable and significant funding; “end to end” thinking on long innovation cycles; procurement of advanced energy technology at commercial scale as well as research and testing; and institutional experimentation and diversity using multiple institutional channels – these have been important reasons that the United States has the most lethal and effective military arsenal in world history. If we’re serious about maintaining American superiority in the energy technology domain, some of this “defense innovation DNA” needs to be replicated or adapted to meet the challenge.

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

**Szondy 12** (David, freelance writer based in Monroe, Washington. An award-winning playwright, he has contributed to Charged and iQ magazine and is the author of the website Tales of Future Past, February 16, "Feature: Small modular nuclear reactors - the future of energy?", www.gizmag.com/small-modular-nuclear-reactors/20860/)

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.

**SMRs solve all of nuclears downsides.**

**Ringle 10** John, Professor Emeritus of Nuclear Engineering at Oregon State University, "Reintroduction of reactors in US a major win", November 13, robertmayer.wordpress.com/2010/11/21/reintroduction-of-reactors-in-us-a-major-win/

Small nuclear reactors will probably **be the mechanism that ushers in nuclear** power’s renaissance in the U.S.¶ Nuclear plants currently supply about 20 percent of the nation’s electricity and more than 70 percent of our carbon-free energy. But large nuclear plants cost $8 billion to $10 billion and utilities are having second thoughts about how to finance these plants.¶ A small modular reactor (SMR) has several advantages over the conventional 1,000-megawatt plant:¶ 1. It ranges in size from 25 to 140 megawatts, hence only costs about a tenth as much as a large plant.¶ 2. It uses a cookie-cutter standardized design to reduce construction costs and can be built in a factory and shipped to the site by truck, railroad or barge.¶ 3. The major parts can be built in U.S. factories, unlike some parts for the larger reactors that must be fabricated overseas.¶ **4. Because of the factory-line production, the SMR could be built in three years with on**.¶ **At least half a dozen companies are developing SMRs**, including NuScale in Oregon. NuScale is American-owned and its 45-megawatt design has some unique features. **It is inherently safe**. It could be located partially or totally below ground, and with its natural convection cooling system, it does not rely on an elaborate system of pumps and valves to provide safety. **There is no scenario in which a** loss-of-coolant **accident could occur**.**e-third of the workforce of a large plant**.¶ 5. More than one SMR could be clustered together to form a larger power plant complex. This provides versatility in operation, particularly in connection with large wind farms. With the variability of wind, one or more SMRs could be run or shut down to provide a constant base load supply of electricity.¶ 6. A cluster of SMRs should be very reliable. One unit could be taken out of service for maintenance or repair without affecting the operation of the other units. And since they are all of a common design, replacement parts could satisfy all units. France has already proved the reliability of standardized plants

**Funding for SMRs now**

HSNW 9/26—Homeland Security News Wire [September 26, 2012, “DOE promotes small-nuclear reactors (SMRs)” http://www.homelandsecuritynewswire.com/dr20120926-doe-promotes-smallnuclear-reactors-smrs]

South Carolina’s Savannah River Site (SRS) located in Aiken, along with the U.S. Department of Energy (DOE), have announced three partnerships to develop three small modular nuclear reactors (SMRs) at the SRS facility; SMRs produce less energy than a regular reactor, but they produce enough energy to power small cities and remote areas

South Carolina’s Savannah River Site (SRS) located in Aiken, along with the U.S. Department of Energy (DOE), have announced three partnerships to develop three small modular nuclear reactors (SMRs) at the SRS facility.

The DOE released a statement saying the agreement “will help leverage Savannah River’s land assets, energy facilities and nuclear expertise to support potential private sector development, testing and licensing of prototype SMR technologies.”

Helen Belecan, DOE’s deputy assistant manager for infrastructure and environmental stewardship at the SRS facility, told Government Technology the goal of the reactors are “to apply the nuclear knowledge and expertise that we have from over 60 years of supporting the nation in its defense-type operation in nuclear material production and help these companies develop the technology and manufacturing capability in the United States so that the United States can take on a leadership role in the manufacturing of these small modular reactors.”

DOE will focus on the advancing SMRs in the United States. $450 million “will be made available to support first-of its kind engineering, design decertification and licensing for up to two SMR designs over five years, subject to congressional appropriations,” DOE says.

Proposals for funding were received in May and are being reviewed to see which proposal will meet the standards of the Nuclear Regulatory Commission (NRC). The DOE plans to announce the recipients later this year.

A SMR is about one-third the size of a regular nuclear reactor and is built at a fraction of the cost. A traditional single-unit nuclear reactor costs roughly $8 billion dollars to build and that number jumps to $14 billion for twin reactors. SMRs produce less energy than a regular reactor, but they produce enough energy to power small cities and remote areas.

Thomas Sander, an associate laboratory director for the Clean Energy Imitative and the Savannah River National Laboratory, told Government Technology the first SMR will cost almost $1 billion, but the price will drop down the line.

“If you are talking about the 100th, my expectation is that cost is going to be reduced significantly as a result of advance factory manufacturing and just a learning process and the licensing process.”

“If you are going after the old coal replacement market, you are looking at 150 to 200 megawatts on average,” Sander said, “but if you are looking at the Alaskan market for small cities or island market or export market for developing countries, you are talking 45 to 100 megawatts.”

The DOE is beginning to sign off on SMR’s for nuclear energy technology, and the government has began to approve projects around the country. DOE spokeswoman Niketa Kumar told Government Technology these new projects will allow the U.S. to compete with other countries in nuclear energy.

**Nuclear competes with natural gas**

Lamonica 12—Martin Lamonica is a senior writer covering green tech and cutting-edge technologies [August 9, 2012, “A Glut of Natural Gas Leaves Nuclear Power Stalled,” http://www.technologyreview.com/news/428737/a-glut-of-natural-gas-leaves-nuclear-power/]

Outside the United States, it's a different story. Unconventional sources of natural gas also threaten the expansion of nuclear, although the potential impact is less clear-cut. Around the world, there are 70 plants now under construction, but shale gas also looms as a key factor in planning for the future. Prices for natural gas are already higher in Asia and Europe, and shale gas resources are not as fully developed as they are the United States.

Some countries are also blocking the development of new natural gas resources. France, for instance, which has a strong commitment to nuclear, has banned fracking in shale gas exploration because of concerns over the environmental impact.

Fast-growing China, meanwhile, needs all the energy sources available and is building nuclear power plants as fast as possible.

Even in United States, of course, super cheap natural gas will not last forever. With supply exceeding demand, some drillers are said to be losing money on natural gas, which could push prices back up. Prices will also be pushed upward by utilities, as they come to rely on more natural gas for power generation, says James.

Ali Azad, the chief business development officer at energy company Babcock & Wilcox, thinks the answer is making nuclear power smaller, cheaper, and faster. His is one of a handful of companies developing small modular reactors that can be built in three years, rather than 10 or more, for a fraction of the cost////

of gigawatt-size reactors. Although this technology is not yet commercially proven, the company has a customer in the Tennessee Valley Authority, which expects to have its first unit online in 2021 (see "A Preassembled Nuclear Reactor").

"When we arrive, we will have a level cost of energy on the grid, which competes favorably with a brand-new combined-cycle natural gas plants when gas prices are between $6 to $8," said Azad. He sees strong demand in power-hungry China and places such as Saudia Arabia, where power is needed for desalination.

Even if natural gas remains cheaper, utilities don't want to find themselves with an overreliance on gas, which has been volatile on price in the past, so nuclear power will still contribute to the energy mix. "[Utilities] still continue [with nuclear] but with a lower level of enthusiasm—it's a hedging strategy," says Hans-Holger Rogner from the Planning and Economics Studies section of the International Atomic Energy Agency. "They don't want to pull all their eggs in one basket because of the new kid on the block called shale gas."

## \*\*\* 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.

**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.**

**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**

**AT: No Impact**

**Goes global**

**Glick 7** Caroline Glick 7, deputy managing editor of The Jerusalem Post, Senior Fellow for Middle East Affairs of the Center for Security Policy, “Condi's African holiday”, December 11, http://www.rightsidenews.com/20071211309/editorial/us-opinion-and-editorial/our-world-condis-african-holiday.html

The Horn of Africa is a dangerous and strategically vital place. Small wars, which rage continuously, can easily escalate into big wars. Local conflicts have regional and global aspects. All of the conflicts in this tinderbox, which controls shipping lanes from the Indian Ocean into the Red Sea, can potentially give rise to regional, and indeed global conflagrations between competing regional actors and global powers.

**Same with Central Asia and Russia.**

**Reilly 2** Kristie, Editor for In These Times, a nonprofit, independent, national magazine published in Chicago. We’ve been around since 1976, fighting for corporate accountability and progressive government. In other words, a better world, “NOT A DROP TO DRINK,” <http://www.inthesetimes.com/issue/26/25/culture1.shtml> \*Cites environmental thinker and activist Vandana Shiva Maude Barlow and Tony Clarke—North America’s foremost water experts

The two books provide a chilling, in-depth examination of a rapidly emerging global crisis. “Quite simply,” Barlow and Clarke write, “unless we dramatically change our ways, between one-half and two-thirds of humanity will be living with severe fresh water shortages within the next quarter-century. … The hard news is this: Humanity is depleting, diverting and polluting the planet’s fresh water resources so quickly and relentlessly that every species on earth—including our own—is in mortal danger.” The crisis is so great, the three authors agree, that the world’s **next great wars will be over water**. The Middle East, parts of Africa, China, **Russia**, parts of the United States and several other areas are already struggling to equitably share water resources. Many conflicts over water are not even recognized as such: Shiva blames the Israeli-Palestinian conflict in part on the severe scarcity of water in settlement areas. As available fresh water on the planet decreases, today’s **low-level conflicts** can only **increase in intensity**.

**AT: Desal**

**No offense—fossil fuel based global desal inevitable, but is unsustainable—nuclear shift key**

I. **Khamis**, IAEA, 200**9**, A global overview on nuclear desalination, Int. J. Nuclear Desalination, Vol. 3, No. 4

As desalination and water reuse expansion in the Middle East and the world continues at a rapid pace, these innovations must be integrated into the next generation of water facilities. The integrated nuclear energy systems would lead to considerably lower power and water costs than the corresponding coal-based systems. When external costs for different energies are internalised in power and water costs, the relative cost differences are considerably increased in favour of the nuclear systems. Financial analysis further confirms these conclusions (Nisan et al., 2007; Wade, 2001). Integrated seawater desalination systems are likely to be deployed intensively in the future in view of the very high demands for water and electrical energy in many regions of the world. A future desalination strategy based uniquely on the utilisation of fossil-fuelled systems is not sustainable because of the high carbon footprint from both power generation and desalination. At the moment, the only solution to reduce the carbon footprint of integrated desalination systems appears to be by utilising nuclear and renewable energies (International Atomic Energy Agency, 2008b).

**AT: No Demand**

**Demand for nuclear desalination is increasing worldwide.**

**IAEA 7** (International Atomic Energy Agency, *Economics of Nuclear Desalination: New Developments and Site Specific Studies*, Final Results of a Coordinated Research Project 2002–2006, July 2007, http://www-pub.iaea.org/MTCD/Publications/PDF/te\_1561\_web.pdf)

1.3.2. Why nuclear desalination?

The International Atomic Energy Agency is a specialized organization of the UN system that seeks to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. The institutional basis for the IAEA’s involvement in nuclear desalination is in its Statute and Medium Term Strategy.

Article II of the IAEA Statute provides that: “ The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health

and prosperity throughout the world”.

This refers implicitly to nuclear desalination as an option for the use of nuclear technologies. The same applies to the Article III of the Statute, which authorizes the IAEA:

“ To encourage and assist research on, and development and practical application of, atomic energy for peaceful uses throughout the world....”; (Article III, A.1); and

“To foster the exchange of scientific and technical information on peaceful uses of atomic energy.”

(Article III, A.3).

In addition, Objective A.3 of the Agency’s Medium Term Strategy requires the Agency:

“ To support and facilitate the development of new and emerging applications of nuclear technologies by co-generation and heat applications, including seawater desalination”.

Request of assessing feasibility of using nuclear energy for seawater desalination was first made by the five **North African countries** to the IAEA in 1989 and the General Conference adopted its resolution to resume the study. These countries are located in semi-arid zones and already suffer from water shortages.

In recent years, interests have been also been indicated by Member States in South and **South East Asia** for the feasibility, as well as the demonstration, of nuclear desalination projects. The issue has since then been repeatedly stressed at the General Conference (Committee on the Whole) and supported by many **Member States** including most members of Group-77. The support stems not only from their expectation of its possible contribution to the freshwater issue but has also been motivated by a variety of reasons that include: the economic competitiveness of nuclear desalination in areas lacking cheap hydropower or fossil fuel resources, energy supply diversification, conservation of fossil fuel resources and spin-off effects of nuclear technology for industrial development.

**AT: Grid Resilient**

#### Grid’s not improving---recent outages and lack of maintenance and funding

Cunningham 12 Nicholas, Policy Analyst at American Security Project, "Fragile Electricity Grid a National Security Concern", July 13, americansecurityproject.org/blog/2012/fragile-electricity-grid-a-national-security-concern/

The high winds from the recent “Derecho” storm knocked down trees, utility poles and power lines, leaving an estimated 3 million people without power in the Washington DC metro area. The emergency response, to say the least, was inadequate. Millions of people were left without power for several days, during a sweltering heat wave. Schools and businesses closed. Several people lost their lives in the last week and a half, both from the storm itself, and from heat-related illness. Maryland, Virginia, Ohio, West Virginia, and Washington DC announced a state of emergency.¶ The recent disaster highlights the fragility of our nation’s electricity grid. How could it take nearly a week to restore power to tens of thousands of people and businesses? The reason is that our electric grid is aging, under stress, and suffers from chronic underinvestment.¶ Underinvestment leads to aging infrastructure, which is already suffering from bottlenecks and congestion. The American Society of Civil Engineers (ASCE ) estimates that 70% of the nation’s transmission lines and transformers are more than 25 years old, leaving the grid vulnerable to outages. When power is cut off, businesses can’t open, factories shut down, and the economy takes a hit. Unplanned interruptions will cost the U.S. economy $6 billion in 2012, which is expected to rise to $71 billion by 2020 if investments aren’t made. ASCE estimates that the electric power industry would need to increase investment by $11 billion annually until 2020 to make the grid reliable.¶ The fragility of the grid presents a national security threat to the United States. The recent storm saw threats as ordinary as high winds and trees cripple the nation’s capital. With decades old infrastructure, we are not adequately equipped to handle extreme weather events, let alone greater threats such as coordinated cyber attacks on the electricity grid.¶ Not only have utilities devoted precious little to maintenance, but investment in innovation has been woefully lacking. Investment in R&D for the electric power sector has steadily declined over the past few decades. According to IEEE Spectrum, from 2001 to 2006 utilities dedicated a measly 0.17% of their revenue to R&D, a smaller share than the hotel industry.

**AT: Yes Attacks**

**Old defense doesn’t apply---Stuxnet changed the game**

**Gross 11** Michael Joseph, Vanity Fair contributing editor, he covers topics including politics, technology, and national security, has also written extensively for The New York Times, The Boston Globe, and GQ, attended Williams College, and later studied at Princeton Theological Seminary. After graduating, he wrote speeches for Massachusetts Governor William Weld, “A Declaration of Cyber-War”, April, http://www.vanityfair.com/culture/features/2011/04/stuxnet-201104?currentPage=all

Regardless of how well it worked, there is no question that Stuxnet is something new under the sun. At the very least, it is a blueprint for a new way of **attacking industrial-control systems**. In the end, the most important thing now publicly known about Stuxnet is that Stuxnet is **now publicly known.** That knowledge is, on the simplest level, a warning: **America’s own critical infrastructure is a sitting target for attacks like this**. That aside, if Stuxnet really did attack Iran’s nuclear program, it could be called the first unattributable act of war. The implications of that concept are confounding. Because cyber-weapons pose an almost **unsolvable problem of sourcing**—who pulled the trigger?—war could evolve into something **more and more like terror**. Cyber-conflict makes military action more like a **never-ending game of uncle**, where the fingers of weaker nations are perpetually bent back. The wars would often be secret, waged by members of anonymous, elite brain trusts, none of whom would ever have to look an enemy in the eye. For people whose lives are connected to the targets, the results could be **as catastrophic as a bombing** **raid, but would be even more disorienting**. People would suffer, but would never be certain whom to blame.¶ **Stuxnet is the Hiroshima of cyber-war**. That is its true significance, and all the speculation about its target and its source should not blind us to that larger reality. **We have crossed a threshold, and there is no turning back**.

**2AC—Consult CP**

**Specifications get written into contracts**

**King 11**

Marcus King, Ph.D., Center for Naval Analyses Project Director and Research Analyst for the Environment and Energy TeamLaVar Huntzinger, Thoi Nguyen, March 2011, Feasibility of Nuclear Power on U.S.Military Installations, www.cna.org/sites/default/files/research/Nuclear Power on Military Installations D0023932 A5.pdf

A principal advantage of DoD ownership or operation would be the possibility to tailor a project to best fit needs, objectives, and concerns that might not be adequately expressed in contracts. If the objectives and concerns are simply that the plant is safe and efficient, that can be written into contract terms, and there is little advantage to DoD ownership or operation.

**PerCan’t solve certainty’s is key**

**Trembath 11** Alex, Policy associate in the Energy and Climate Program at Breakthrough. He is the lead or co-author of several Breakthrough publications, including the 2012 report, 2/4/11, [Nuclear Power and the Future of Post-Partisan Energy Policy](http://leadenergy.org/2011/02/the-nuclear-option-in-a-post-partisan-approach-on-energy/), "Beyond Boom and Bust: Putting Clean Tech on a Path to Subsidy Independence" and "Where the Shale Gas Revolution Came From”, <http://leadenergy.org/2011/02/the-nuclear-option-in-a-post-partisan-approach-on-energy/>

**If there is one** field of the energy **sector for which certainty of** political will and **government policy is essential, it is nuclear power. High up front costs for the** private industry, extreme regulatory oversight and public wariness necessitate a committed government partner for private firms investing in nuclear technology. In a new [report](http://www.thirdway.org/publications/370) on the potential for a “nuclear renaissance,” Third Way references the failed cap-and-trade bill, delaying tactics in the House vis-a-vis EPA regulations on CO₂, and the recent election results to emphasize the difficult current political environment for advancing new nuclear policy. The report, “The Future of Nuclear Energy,” makes the case for political certainty: “It is difficult for energy producers and users to estimate the relative price for nuclear-generated energy compared to fossil fuel alternatives (e.g. natural gas)–an essential consideration in making the major capital investment decision necessary for new energy production that will be in place for decades.” Are our politicians willing to match the level of certainty that the nuclear industry demands? Lacking a suitable price on carbon that may have been achieved by a cap-and-trade bill removes one primary policy instrument for making nuclear power more cost-competitive with fossil fuels. The impetus on Congress, therefore, will be to shift from demand-side “pull” energy policies (that increase demand for clean tech by raising the price of dirty energy) to [supply-side “push” policies](http://leadenergy.org/2010/09/supply-demand-energy-innovation/), or industrial and innovation policies. Fortunately, there are signals from political and thought leaders that a package of policies may emerge to incentivize alternative energy sources that include nuclear power. One place to start is the recently deceased American Power Act, addressed above, authored originally by Senators Kerry, Graham and Lieberman. Before its final and disappointing incarnation, the bill [included](http://www.huffingtonpost.com/2010/05/12/american-power-act-photos_n_573643.html#s90041&title=undefined) provisions to increase loan guarantees for nuclear power plant construction in addition to other tax incentives. Loan guarantees are probably the most important method of government involvement in new plant construction, given the high capital costs of development. One wonders what the fate of the bill, or a less ambitious set of its provisions, would have been had Republican Senator Graham not abdicated and removed any hope of Republican co-sponsorship. But that was last year. The changing of the guard in Congress makes this a whole different game, and the once feasible support for nuclear technology on either side of the aisle must be reevaluated. A New York Times [piece](http://www.nytimes.com/2010/11/17/business/energy-environment/17NUCLEAR.html) in the aftermath of the elections forecast a difficult road ahead for nuclear energy policy, but did note Republican support for programs like a waste disposal site and loan guarantees. Republican support for nuclear energy has roots in the most significant recent energy legislation, the Energy Policy Act of 2005, which passed provisions for nuclear power with wide bipartisan support. Reaching out to Republicans on policies they have supported in the past should be a goal of Democrats who wish to form a foundational debate on moving the policy forward. There are also signals that key Republicans, notably [Lindsey Graham](http://washingtonindependent.com/99171/graham-circulating-clean-energy-standard) and [Richard Lugar](http://www.plattsenergyweektv.com/story.aspx?storyid=132784&catid=293), would throw their support behind a clean energy standard that includes nuclear and CCS. Republicans in Congress will find intellectual support from a group that AEL’s Teryn Norris coined [“innovation hawks,”](http://leadenergy.org/2011/01/the-rise-of-innovation-hawks/) among them Steven Hayward, David Brooks and George Will. Will has been [particularly outspoken](http://www.newsweek.com/2010/04/08/this-nuclear-option-is-nuclear.html) in support of nuclear energy, writing in 2010 that “it is a travesty that the nation that first harnessed nuclear energy has neglected it so long because fads about supposed ‘green energy’ and superstitions about nuclear power’s dangers.” The extreme reluctance of Republicans to cooperate with Democrats over the last two years is only the first step, as any legislation will have to overcome Democrats’ traditional opposition to nuclear energy. However, here again there is reason for optimism. Barbara Boxer and John Kerry bucked their party’s long-time aversion to nuclear in a precursor bill to APA, and Kerry continued working on the issue during 2010. Jeff Bingaman, in a speech earlier this week, reversed his position on the issue by calling for the inclusion of nuclear energy provisions in a clean energy standard. The Huffington Post [reports](http://www.huffingtonpost.com/2011/02/01/sen-jeff-bingaman-backs-n_n_816864.html) that “the White House reached out to his committee [Senate Energy] to help develop the clean energy plan through legislation.” This development in itself potentially mitigates two of the largest obstacle standing in the way of progress on comprehensive energy legislation: lack of a bill, and lack of high profile sponsors. Democrats can also direct [Section 48C](http://leadenergy.org/2010/12/clean-energy-financing-first-steps-towards-post-partisan-effort/#more-3320) of the American Recovery and Reinvestment Act of 2009 towards nuclear technology, which provides a tax credit for companies that engage in clean tech manufacturing. Democrats should not give up on their policy goals simply because they no longer enjoy broad majorities in both Houses, and Republicans should not spend all their time holding symbolic repeal votes on the Obama Administration’s accomplishments. The lame-duck votes in December on “Don’t Ask, Don’t Tell,” the tax cut deal and START indicate that at least a few Republicans are willing to work together with Democrats in a divided Congress, and that is precisely what nuclear energy needs moving forward. It will require an agressive push from the White House, and a concerted effort from both parties’ leadership, but the road for forging bipartisan legislation is not an impassable one. **The politician with perhaps the single greatest leverage over the future of nuclear energy is President Obama**, and his rhetoric matches the challenge posed by our aging and poisonous energy infrastructure. “This is our generation’s Sputnik moment,” announced Obama recently. Echoing the calls of presidents past, the President used his [State of the Union](http://www.slate.com/id/2281847/) podium to signal a newly invigorated industrialism in the United States. He advocated broadly for renewed investment in infrastructure, education, and technological innovation. And he did so in a room with many more members of the opposition party than at any point during the first half of his term. The eagerness of the President to combine left and right agendas can hopefully match the hyper-partisan bitterness that dominates our political culture, and nuclear power maybe one sector of our economy **to benefit from his political leadership.**

#### And no public backlash

**King 11**

Marcus King, Ph.D., Center for Naval Analyses Project Director and Research Analyst for the Environment and Energy TeamLaVar Huntzinger, Thoi Nguyen, March 2011, Feasibility of Nuclear Power on U.S.Military Installations, www.cna.org/sites/default/files/research/Nuclear Power on Military Installations D0023932 A5.pdf

Recent surveys show that American public opinion has shifted **toward nuclear** power. In survey results, those who say they favor nuclear energy moved from 49 percent in 1983 **to 74 percent** in 2010 [24]. In 1984, 35 percent gave a high rating to the safety of nuclear plants; today that number is **66 percent** [25]. Increased government and congressional interest Favorable public perception has been one factor leading to greater government and bipartisan congressional interest in building new nuclear capacity. Federal and state governments have implemented policies such as tax relief and loan guarantees to facilitate the construction of new nuclear power plants [9]. President Obama announced that federal government loan guarantees would be awarded to build the first new nuclear power plants in the United States in three decades [26]. Bills have been introduced in Congress to provide funding for new nuclear research. For example, three bills were introduced in 2009 to promote the development of small nuclear reactors. The bills were intended to • Fund a research, development, and demonstration program to reduce manufacturing and construction costs related to small nuclear reactors • Create the right business environment for doubling production of nuclear energy • Carry out programs to develop and demonstrate two small modular nuclear reactor designs [27]. The three bills were referred to committees in the House of Representatives in early 2010. More significantly, funding was approved for the DOE **sm**all **r**eactor program for fiscal year 2011.

**2AC—Prices DA**

**Prices high and rising**

**Williams 11/6** (Glenn, US Power Prices Will Continue to Increase <http://energy.aol.com/2012/11/06/us-power-prices-will-continue-to-increase/>

Consumers or Shareholders Left Holding the Bag)

It is clear Exelon's executives are concerned. In the earnings conference call, they warned that if they cannot achieve higher revenues for their generating assets, Exelon may be forced reduce their dividends. Exelon's CEO Christopher Crane said in his November 1, 2012 conference call, "If [power prices] do not play out favorably, revisiting our dividend policy will be in the range of options for preserving our investment-grade rating that management and the board will need to consider."

Executives managing Texas' grid have a different perspective but have reached a similar conclusion. In order to attract adequate generating assets to their grid, the Electric Reliability Council of Texas decided to lift price caps and let market clearing-prices drift to $9,000 per megawatt-hour, or 900 cents a kilowatt-hour. And, retail consumers will pay even more to have that power delivered to their meters. According to the Fort Worth Star-Telegram, the Texas Public Utility Commission said raising prices is necessary to encourage more plant construction and prevent power outages.

Power prices will go up. At the current price levels, marginal power producers, such as Kewaunee will be forced to exit the market. Shareholders will demand management pare costs by retiring economically unproductive assets and produce earnings. With capacity leaving the market, supply and demand curves will be adjusted and average wholesale prices will drift higher. The consumer will pay the difference.

**Cheap gas is not key.**

**Fahey 12** (“Electricity Prices Rise Despite Cheaper Costs For Utility Companies,” 7/11 < http://www.huffingtonpost.com/2012/07/11/electric-prices-rise-despite-cheap-production\_n\_1665946.html>)

A plunge in the price of natural gas has made it cheaper for utilities to produce electricity. But the savings aren't translating to lower rates for customers. Instead, U.S. electricity prices are going up. Electricity prices are forecast to rise slightly this summer. But any increase is noteworthy because natural gas, which is used to produce nearly a third of the country's power, is 43 percent cheaper than a year ago. A long-term downward trend in power prices could be starting to reverse, analysts say. "It's caused us to scratch our heads," says Tyler Hodge, an analyst at the Energy Department who studies electricity prices. The recent heat wave that gripped much of the country increased demand for power as families cranked up their air conditioners. And that may boost some June utility bills. But the nationwide rise in electricity prices is attributable to other factors, analysts say: \_ In many states, retail electricity rates are set by regulators every few years. As a result, lower power costs haven't yet made their way to customers. \_ Utilities often lock in their costs for natural gas and other fuels years in advance. That helps protect customers when fuel prices spike, but it prevents customers from reaping the benefits of a price drop. \_ The cost of actually delivering electricity, which accounts for 40 percent of a customer's bill on average, has been rising fast. That has eaten up any potential savings from the production of electricity. Utilities are building transmission lines, installing new equipment and fixing up power plants after what analysts say has been years of under-investment. This may reverse what has been a gradual decline in retail electricity prices. Adjusted for inflation, the average retail electricity price has been drifting mostly lower since 1984, when it was 16.7 cents per kilowatt-hour

**2AC—Oil DA**

**There is significant global nuclear growth.**

**Adnani 6/7** (Amir, Founder of Uranium Energy Corp. and has served as the president, CEO and a director since 2005, Under his leadership, Uranium Energy has become North America’s newest uranium-producing company and the first uranium producer in the U.S. in more than seven years. The company has achieved its prime status, including the broad support of major securities analysts and institutional investors, due in large part to Adnani’s early and continuing focus on bringing many of the uranium industry’s most experienced technical personnel into management, *Uranium Investing – Why Nuclear Power Has A Bright Future*, http://oakshirefinancial.com/2012/06/07/uranium-investing-why-nuclear-power-has-a-bright-future/)

If you asked Amir Adnani, chief executive of Uranium Energy Corp., why he was so bullish about uranium in 2007, his answer would be the same as it is today: There is not enough supply to meet demand. Investors might wonder if Fukushima has drawn the curtain on this industry, but Adnani says in this exclusive interview with The Energy Report that this is just the first act for nuclear power. Adnani is taking advantage of what he sees as a once-in-a-lifetime opportunity to grow his Texas-based company, snapping up properties that are now “on sale.”

The Energy Report: More than a year after a tsunami left the Fukushima nuclear reactor in Japan without the ability to sufficiently cool itself, Japan shut down the Tomari 3 nuclear reactor, leaving all 44,200 megawatts (MW) of the country’s nuclear capacity idle with no set date for restart. When investors hear news like that, they might get the impression that nuclear power is a sunset industry. What’s your take?

Amir Adnani: There is no doubt that the nuclear disaster in Japan has been one of the more challenging events facing the industry. Although just a couple weeks after those reactors were taken off-line, a town with two reactors in the western prefecture of Fukui voted in favor of restoring operations. Prime Minister Yoshihiko Noda and the federal government now have to make the final decision and several media outlets are reporting that the government may order the restart of two reactors next week. Many industry observers and analysts are expecting about 20–30 of the reactors to come back on-line over the course of the next year.

Japan is very much dependent on nuclear power. About one-third of Japanese electricity was generated through nuclear power prior to Fukushima. As recently as this February, major industries, like Japan’s steelmakers, have been urging the early restart of nuclear power plants. They fear potential power cuts and the rising costs associated with electricity from fossil fuels could affect their viability. Japan is a major export economy and has very energy-intensive industries to maintain and run competitively. Nuclear power will ultimately, in my opinion, be part of the energy mix in Japan. With time, we’ll see plants come back on-line.

TER: Is that enough to assuage investor concerns? What about what’s happened in Germany, Switzerland and some other European nations that have curtailed energy produced by nuclear reactors?

AA: Certainly investors have sold off uranium holdings based on the situation in Japan and I believe there was both an emotional and political knee-jerk reaction toward the industry. However, if we **take a closer look** at this through a sober vantage point, the effects of Germany phasing its reactors offline by 2022 is not nearly as material as the flip side of it: There remains **significant nuclear growth** in developing markets. Led by China and India, countries like Russia, South Korea and even oil-rich nations like Saudi Arabia and the **U**nited **A**rab **E**mirates are planning to build reactors that would nearly double the world’s installed nuclear capacity by 2030. These countries continue to see nuclear power’s unique ability to generate baseload power in a carbon dioxide-free and low-cost way as a very big advantage in their energy mix.

TER: Where is the growth for nuclear in a post-Fukushima world going to come from?

AA: The growth in the nuclear industry is going to come from exactly where it was going to come from pre-Fukushima. The countries and the economies that are expanding most rapidly are the ones that really need more power. The growth isn’t going to come from the West. In fact, only 3% of the reactors that are under construction right now—there are about 65 reactors under construction—are in G7 countries. The top four markets are China, Russia, India and South Korea. Saudi Arabia plans to build 16 nuclear reactors, which is a $400 billion program. Chinese officials have reiterated the country’s plans to grow its nuclear capacity to about 70 gigawatts (GW) by 2020. India plans to get to about 60–63 GW of installed nuclear capacity by 2030 and it further aims to supply 25% of electricity from nuclear power by 2050.

The plans to develop nuclear power in China and other countries are very much driven by a set of realities that is very different and very acute. People are dying every year in China, literally choking to death, because of all of the nasty toxins that are being put into the environment by burning coal. It takes a lot of infrastructure to get coal into various places in China where some of that infrastructure doesn’t exist yet. No other form of power can match nuclear power’s ability to generate electricity in a low-cost, emission-free manner on a baseload scale.

Having said that, there is incremental growth in the developed world, too. The U.S. Nuclear Regulatory Commission approved four licenses earlier this year for operating nuclear reactors to come on-line in Georgia and South Carolina. They are the first licenses of this type to be issued in the U.S. in almost 30 years. Even in the United Kingdom there have been announcements to build seven or eight new nuclear reactors. It is very positive to see those developments post-Fukushima.

**2AC—Politics DA**

**Government supports for SMRs now.**

**Wang 12** (Ucilia, Contributor @ Forbes, *Feds To Finance Small Nuclear Reactor Designs*, January 20th, http://www.forbes.com/sites/uciliawang/2012/01/20/feds-to-finance-small-nuclear-reactor-designs/)

The U.S. Department of Energy on Friday announced a plan to support the design of so-called “small modular nuclear reactors” and popularize their use for power generation.

The plan is **to fund** two reactor designs that will become available for licensing and production by 2022. The department is first asking for advice from the power industry on crafting the details of this project, and it hasn’t said how much it would dole out. But whoever wins the contracts to design the reactors will have to pony up money as well.

Small reactors are generally about one-third the size of existing nuclear reactors, and a power plant with small reactors promises to be cheaper to build and easier to obtain permits more quickly than a full-size nuclear power plant, proponents say. Utilities should have more flexibility in modifying the size of a power plant with small reactors – if they need more power, then they can add more reactors over time.

Nuclear reactors have historically been designed to be 1-gigawatt or more each because such scale helps to drive down the manufacturing and installation costs. Small reactors can be economical, too, advocates say, because they can be shipped more easily and cheaply around the world.

Energy Secretary Steve Chu has said he’s a big fan of small nuclear reactor technology.

**Triggers the link.**

**Manufacturing World 12** (U.S Invests in Small Nuclear Power Plants, March 2012, http://www.sustainablemanufacturingworld.com/2012/03/27/u-s-invests-in-small-nuclear-power-plants/)

COLUMBUS, Ohio – Today, as President Obama went to Ohio State University to discuss the all-out, all-of-the-above strategy for American energy, the White House announced new funding to advance the development of American-made small modular reactors (SMRs), an important element of the President’s energy strategy. A total of $450 million will be made available to support first-of-its-kind engineering, design certification and licensing for up to two SMR designs over five years, subject to congressional appropriations.

Manufacturing these reactors domestically will offer the United States important export opportunities and will advance our competitive edge in the global clean energy race. Small modular reactors, which are approximately one-third the size of current nuclear plants, have compact, scalable designs that are expected to offer a host of safety, construction and economic benefits.

“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,” said Energy Secretary Steven Chu. “Through the funding for small modular nuclear reactors announced today, the Energy Department and private industry are working to position America as the leader in advanced nuclear energy technology and manufacturing.”

Through cost-share agreements with private industry, the Department will solicit proposals for promising SMR projects that have the potential to be licensed by the Nuclear Regulatory Commission and achieve commercial operation by 2022. These cost-share agreements will span a five-year period and, subject to congressional appropriations, will provide a total investment of approximately $900 million, with at least 50 percent provided by private industry.

SMRs can be made in factories and transported to sites where they would be ready to “plug and play” upon arrival, reducing both capital costs and construction times. The smaller size also makes SMRs ideal for small electric grids and for locations that cannot support large reactors, offering utilities the flexibility to scale production as demand changes.

Today’s announcement builds on the Obama Administration’s efforts to help jumpstart America’s nuclear energy industry that include:

In 2010, the Department signed a conditional commitment for $8 billion in loan guarantees to support the Vogtle project, where the Southern Company and Georgia Power are building two new nuclear reactors, helping to create new jobs and export opportunities for American workers and businesses.

The Energy Department has also supported the Vogtle project and the development of the next generation of nuclear reactors by providing more than $200 million through a cost-share agreement to support the licensing reviews for Westinghouse’s AP1000 reactor design certification. The Vogtle license is the first for new nuclear power plant construction in more than three decades.

**No impact to sequestration.**

**Adams 10/17** Gordon, Professor of International Relations at the School of International Service, American University and a Distinguished Fellow at the Stimson Center, From 1993-97 he was the senior White House budget official for national security, “The Fiscal Slide”, <http://www.foreignpolicy.com/articles/2012/10/17/the_fiscal_slide?page=full>

But does this mean the end of our national security (and domestic well-being), as the political debate suggests? A little careful noodling about the impact of a sequester on the Defense Department suggests it might not be the end of the world. In fact, it might be exactly the fiscal discipline DOD needs.

Let me get technical for a moment, so we can actually see what might go on. First, the law made it clear that the administration could exempt funding for troops and their benefits (including retiree benefits) from the fiscal cliff. The administration has done that, so the troops will be okay. (Their number is coming down anyway as a result of the end of the wars in Iraq and Afghanistan.)

Then, there is the matter of procurement and what some see as the almost cataclysmic level of devastation that such harsh cuts would impose on the defense industry. Except they won't. It turns out the industry is pretty healthy, it has been for a decade, and it is working on contracts that have been funded in prior budget years, which are exempt from sequestration.

As the director of defense procurement put it: "The vast majority of our contracts are fully funded, so there's no need to terminate existing contracts unless the product is no longer needed." Lockheed treasurer Ken Possenriede agreed that sequestration was not a near-term problem: "If sequestration happens, just based on our normal business rhythm, we're comfortable from a cash-on-hand standpoint that we'll endure that.

How about military operations, including the war? Well, the war budget, which has never really been separate from the non-war budget -- that's a political fiction the executive branch and Congress set up, but the funds are, in reality, mixed -- is included in a sequester, which might sound terrible for the troops in Afghanistan.

But, the reality is that the funds for DOD operations (war and much else) are very "fungible," as we budget wonks like to put it, meaning the funds can be moved around among programs pretty flexibly -- from training to education to base operations to the costs of operating troops in the field. And OMB and the Pentagon agree that "PPAs," in operations land, means "accounts." And accounts are things like Army Operations and Maintenance, which can cover all of the above activities. So, the service managers would have 9.4 percent fewer funds than the Congress gave them, but significant flexibility to move them around, setting priorities and making choices. Let's say they have a scalpel to work with, not a bludgeon.

So what about research -- the investments in the future of defense technology? Well, here, too, there would be 9.4 percent fewer dollars than appropriated. But R&D is what they call a "level of effort" area of funding -- you buy as much R&D as the money allows, but you don't have to cut items out of a production contract. And the Pentagon would have some flexibility as well, since most R&D "program elements" cover a variety of R&D projects, so fewer resources means setting priorities and making choices.

Beyond these technical flexibilities, DOD, like other departments, would also have recourse to reprogramming funds and using its general transfer authority. The flexibility here is pretty great; over the past decades some reprogram and transfer totals have been in the tens of billions of dollars. What it takes is making the same tough choices, many of them internal. A few, the transfers, would have to be communicated to Congress, where the senior leadership of the key authorizing and appropriating committees (who don't want to devastate defense) would be likely to agree, especially as they were the most anxious to protect defense.

And OMB could alleviate the short-term urgency by agreeing to hold off on taking the cuts until later in the year, by approving overall funding ("apportionment") at a higher level early in the year, and delaying the cuts until later, when planning in DOD was complete.

It is not a pretty picture; no management expert would say this is the way to do defense (or any other) budgeting. But **it is not doomsday**. In fact, it might be discipline -- exactly the kind of budgetary discipline the Pentagon has not had for the past decade. Good management, priority-setting, and greater efficiency might be the result.

And since the sequester would be a one-off, setting a lower baseline for future defense growth, our national security might just be as safe as it ever was.

**No impact to the economy.**

**CBO 11/8** Congressional Budget Office, non-partisan budget officials, ECONOMIC EFFECTS OF POLICIES CONTRIBUTING TO FISCAL TIGHTENING IN 2013, <http://www.cbo.gov/sites/default/files/cbofiles/attachments/11-08-12-FiscalTightening.pdf>, AM

Substantial changes to tax and spending policies are scheduled to take effect in January 2013, significantly reducing the federal budget deficit. According to the Congressional Budget Office’s (CBO’s) projections, if all of that fiscal tightening occurs, real (inflation-adjusted) gross domestic product (GDP) will drop by 0.5 percent in 2013 (as measured by the change from the fourth quarter of 2012 to the fourth quarter of 2013)—reflecting a decline in the first half of the year and renewed growth at a modest pace later in the year.1 That contraction of the economy will cause employment to decline and the unemployment rate to rise to 9.1 percent in the fourth quarter of 2013. After next year, by the agency’s estimates, economic growth will pick up, and the labor market will strengthen, returning output to its potential level (reflecting a high rate of use of labor and capital) and shrinking the unemployment rate to 5.5 percent by 2018.

#### Congress will kick the can

Schiff 11/10 (Peter, president and chief global strategist of Euro Pacific Capital, /2011 “Going Over The Fiscal Cliff Isn't The Problem, It's The Solution,” http://www.businessinsider.com/extend-and-pretend-2012-11)

If you recall, the cliff was created by a deal last year when Congress couldn't find ways to trim the deficit in exchange for raising the debt ceiling. When they failed to reach an agreement, Congress knew they had to raise the debt ceiling anyway. The resulting Budget Control Act of 2011, signed in August of that year, offered the pretense that they were dealing with our long-term fiscal crisis and not simply raising the debt ceiling with no strings attached. This was done not only to appease some House Republicans, who had threatened to vote against a debt ceiling increase, but to satisfy the bond rating agencies that had threatened (I would choose a different word or provide a source to back this up)a down-grade if Congress failed to act.

Now the focus turns to how Congress will dismantle the structure it created just 16 months ago. There can be **little doubt that they will** as economists are assuring politicians that driving over the fiscal cliff will immediately bring on a recession. The expiration of the Bush era tax cuts for all taxpayers will cost Americans an estimated $423 billion in 2013 alone. Hundreds of billions of across the board spending cuts, including the military, have been delineated. **No politician would allow that to happen**.

It is amazing that members of Congress can keep a straight face as they claim to want to address our long-term deficit problem while simultaneously working to avoid any substantive action. **No doubt an agreement will be reached that will replace the looming fiscal cliff with another one farther down the road** (which they can **easily dismantle** before we actually reach the precipice). Will the rating agencies buy this bill of goods a second time? If we lack the political courage to go over this fiscal cliff, why should anyone think we will be able to stomach going over the next one? Especially since each time we delay going over the cliff, we simply increase its future size, making it that much harder to actually go over it.

**No grand bargain and PC’s not key**

**Yglesias 11/9** Matthew /12, Boehner Is Bluffing, www.slate.com/articles/business/moneybox/2012/11/boehner\_and\_the\_fiscal\_cliff\_the\_house\_speaker\_is\_bluffing\_about\_the\_bush.html

Remember the famous scene from Raiders of the Lost Ark when Indiana Jones faces off against a guy who unsheathes a scimitar and wows the audience with his fancy swordsmanship--only to get shot in the chest by Indy? The swordsman—that’s House Speaker John Boehner right now on the Bush tax cuts. Whether it’s out of deference to the office, eagerness to have an interesting story to write about, or plain gullibility, every congressional reporter in town is now dutifully reporting on his negotiating strategy. But this fight is over. Boehner has brought a knife to a gunfight, only nobody seems to have told anyone in the conservative movement. To recap, the basic situation is this. Back when George W. Bush was in office, he wanted to cut taxes. And he wanted to disguise the cost of his tax cuts. So he had his allies on Capitol Hill write the legislation so that the tax cuts would automatically expire at the end of a 10-year window. That window closed at the end of 2010. But during the 2010 lame-duck session, Republicans were riding high on electoral victory and the Obama administration was concerned that tax hikes would hurt the economy. So they cut a deal to extend the Bush tax cuts two more years into the 2012 lame-duck session. It was a smart idea for everyone concerned. With the economy weak, there really was no case for a short-term tax increase, and this way the presidential election would resolve everything. If Obama lost, his GOP opponent would surely sign a permanent extension of the Bush tax cuts. But if Obama won, then he’d block any extension. As you probably heard Tuesday night, Obama won. Obama’s party also gained two Senate seats and a handful of seats in the United States House of Representatives. Consequently, the Bush tax cuts are toast. This is a question of fact, not of interpretation. The American political system is full of checks and balances, and the way the game works is that tie goes to the status quo. And in this case, the status quo is that the tax cuts expire. Conservatives can perhaps console themselves with the realization that the expiration isn’t an underhanded liberal trick. It’s their own trick, undertaken to make the apparent cost of the tax cuts smaller. Next time, having learned their lesson, they should just pass a smaller, but more permanent, reduction in taxes. If they’d done that, then Obama would have no power to force higher rates on the country. He could beg and plead for a grand bargain day and night and it still wouldn’t happen. The cold hard reality is he doesn’t have the votes in the House to raise taxes and he can’t get the votes because the House is locked down for the GOP thanks to well-drawn district boundaries. But Republicans didn’t create permanent cuts when they had the chance in 2002. Their daring strategy raised the stakes, but they didn’t get the cards they need. Game over. Yet the conservative movement, Boehner, the media, and—most amazingly of all, many leaders in the Democratic Party—are still playing. Boehner delivered a post-election speech calling for tax reform that would put the top marginal income tax rate even lower than it is today. Sen. Chuck Schumer says Democrats will work with the business community to persuade Boehner to change his mind. The conceit here is the frankly bizarre idea that since Obama wants to extend the Bush tax cuts for the middle class, he needs to engage in some kind of bargaining process. But this is silly. The Senate already passed a plan to extend the middle-class tax cuts. Now the choice before the House of Representatives is whether they want to vote to pass that plan before the new year or after the new year. Grover Norquist, the conservative Solon on taxes, appears to have made a metaphysical ruling that a vote for partial extension (before the new year) is a vote for higher taxes. That’s silly, but the dictates of holy writ are often a bit arbitrary. All Republicans need to do is wait until the Bush tax cuts have already expired. At that point, a vote for a tax cut that Obama will sign—i.e., the middle-class tax cuts only—would clearly be a vote to cut taxes rather than raise them. To take the bargaining process seriously at this point you have to believe that come 2013, House Republicans would actually refuse to cut taxes on the grounds that the president’s tax-cut proposal doesn’t cut taxes enough. Then they would blame the economic drag and middle-class pain that their own refusal to cut taxes had caused on the Democrats. But that doesn’t pass the laugh test as a political argument. It ignores the fact that the GOP quite genuinely wants to see rich people pay lower taxes. And since rich people have lots of income that falls below the top bracket cutoff, they actually benefit massively from the middle-class tax cuts Obama favors. There’s no political or substantive reason for Republicans to resist a post-new-year tax cut proposal. That means there’s no leverage on the GOP side and nothing for the parties to negotiate over. Republicans took a risk with the tax sunsets, and they lost. Boehner is bluffing, and it’s time for everyone to recognize that, take the next couple of months off, and pass the Obama middle-class tax cuts in January.

**Plan popular --- appropriations cover.**

**Sullivan 10** (Mary Anne Sullivan – Partner in Hogan Lovells' energy practice in Washington, D.C., Daniel F. Stenger – Partner in Hogan Lovells' energy practice in Washington, D.C., Amy C. Roma – Senior associate in Hogan Lovells' energy practice in Washington, D.C., *Are Small Reactors the Next Big Thing in Nuclear?*, November 2010, Electric Light & Power, Nov/Dec2010, Vol. 88 Issue 6, p46)

Congress

SMRs have enjoyed **bipartisan support** in Congress. The House Committee on Science and Technology and the Senate Energy and Natural Resources Committee have approved similar legislation designed to promote the development and deployment of SMRs along the lines the DOE has proposed. Promoting SMR development in legislation has its price.

The Congressional Budget Office recently estimated that the Senate bill would cost $407 million over the next five years to support cost-sharing programs with private companies for the development of two standard SMR designs. Costs for the out-years were not included in the estimate, but the bill would require the DOE to obtain NRC design certifications for the reactors by 2018 and to secure combined construction and operating licenses by Jan. 1, 2021.

If Congress can pass an energy bill, it seems likely the bill **will support SMRs**. Even in the absence of new authorizing legislation, however, **appropriations bills** that must be passed to **keep the government running** almost certainly will contain strong support for the DOE's research and development program for SMRs.

SMRs respond to a critical suite of power needs: reliable, low-carbon, baseload generation at a manageable capital cost for even small utilities. But as with many other power solutions, much still needs to happen to realize the promise.

### 2ac—Security

**No prior questions.**

**Owen 2** (David, Reader of Political Theory at the University of Southampton, Reader of Political Theory at the Univ. of Southampton, Millennium Vol 31 No 3 p. 655-657)

Commenting on the ‘philosophical turn’ in IR, Wæver remarks that ‘[a] frenzy for words like “epistemology” and “ontology” often signals this philosophical turn’, although he goes on to comment that these terms are often used loosely.4 However, loosely deployed or not, it is clear that debates concerning ontology and epistemology play a central role in the contemporary IR theory wars. In one respect, this is unsurprising since it is a characteristic feature of the social sciences that periods of disciplinary disorientation involve recourse to reflection on the philosophical commitments of different theoretical approaches, and there is no doubt that such reflection can play a valuable role in making explicit the commitments that characterise (and help individuate) diverse theoretical positions. Yet, such a philosophical turn is not without its dangers and I will briefly mention three before turning to consider a confusion that has, I will suggest, helped to promote the IR theory wars by motivating this philosophical turn. The first danger with the philosophical turn is that it has an inbuilt tendency to prioritize issues of ontology and epistemology over explanatory and/or interpretive power as if the latter two were merely a simple function of the former. But while the explanatory and/or interpretive power of a theoretical account is not wholly independent of its ontological and/or epistemological commitments (otherwise criticism of these features would not be a criticism that had any value), it is by no means clear that it is, in contrast, wholly dependent on these philosophical commitme

nts. Thus, for example, one need not be sympathetic to rational choice theory to recognise that it can provide powerful accounts of certain kinds of problems, such as the tragedy of the commons in which dilemmas of collective action are foregrounded. It may, of course, be the case that the advocates of rational choice theory cannot give a good account of why this type of theory is powerful in accounting for this class of problems (i.e., how it is that the relevant actors come to exhibit features in these circumstances that approximate the assumptions of rational choice theory) and, if this is the case, it is a philosophical weakness—but this does not undermine the point that, for a certain class of problems, rational choice theory may provide the best account available to us. In other words, while the critical judgement of theoretical accounts in terms of their ontological and/or epistemological sophistication is one kind of critical judgement, it is not the only or even necessarily the most important kind. The second danger run by the philosophical turn is that because prioritisation of ontology and epistemology promotes theory-construction from philosophical first principles, it cultivates a theory-driven rather than problem-driven approach to IR. Paraphrasing Ian Shapiro, the point can be put like this: since it is the case that there is always a plurality of possible true descriptions of a given action, event or phenomenon, the challenge is to decide which is the most apt in terms of getting a perspicuous grip on the action, event or phenomenon in question given the purposes of the inquiry; yet, from this standpoint, ‘theory-driven work is part of a reductionist program’ in that it ‘dictates always opting for the description that calls for the explanation that flows from the preferred model or theory’.5 The justification offered for this strategy rests on the mistaken belief that it is necessary for social science because general explanations are required to characterise the classes of phenomena studied in similar terms. However, as Shapiro points out, this is to misunderstand the enterprise of sciencesince ‘whether there are general explanations for classes of phenomena is a question for social-scientific inquiry, not to be prejudged before conducting that inquiry’.6 Moreover, this strategy easily slips into the promotion of the pursuit of generality over that of empirical validity. The third danger is that the preceding two combine to encourage the formation of a particular image of disciplinary debate in IR—what might be called (only slightly tongue in cheek) ‘the Highlander view’—namely, an image of warring theoretical approaches with each, despite occasional temporary tactical alliances, dedicated to the strategic achievement of sovereignty over the disciplinary field. It encourages this view because the turn to, and prioritisation of, ontology and epistemology stimulates the idea that there can only be one theoretical approach which gets things right, namely, the theoretical approach that gets its ontology and epistemology right. This image feeds back into IR exacerbating the first and second dangers, and so a potentially vicious circle arises.

**Perm solves best.**

**Murry 97** (Alastair J.H., Professor of Politics at the University of Wales, *Reconstructing Realism: Between Power Politics and Cosmopolitan Ethics*, p. 193-196)

For realism, man remains, in the final analysis, limited by himself. As such, it emphasizes caution, and focuses not merely upon the achievement of long-term objectives, but also upon the resolution of more immediate difficulties. Given that, in the absence of a resolution of such difficulties, longer-term objectives are liable to be unachievable, realism would seem to offer a more effective strategy of transition than reflectivism itself. Whereas, in constructivism, such strategies are divorced from the current realities of international politics altogether, realism’s emphasis on first addressing the immediate obstacles to development ensures that it at least generates strategies which offer us a tangible path to follow. If these strategies perhaps lack the visionary appeal of reflectivist proposals, emphasizing simply the necessity of a restrained, moderate diplomacy in order to ameliorate conflicts between states, to foster a degree of mutual understanding in international relations, and, ultimately, to develop a sense of community which might underlie a more comprehensive international society, they at least seek to take advantage of the possibilities of reform in the current international system without jeopardizing the possibilities of order. Realism’s gradualist reformism, the careful tending of what it regards as an essentially organic process, ultimately suggests the basis for a more sustainable strategy for reform than reflectivist perspectives, however dramatic, can offer. For the realist, then, if rationalist theories prove so conservative as to make their adoption problematic, critical theories prove so progressive as to make their adoption unattractive. If the former can justifiably be criticized for seeking to make a far from ideal order work more efficiently, thus perpetuating its existence and legitimating its errors, reflectivist theory can equally be criticized for searching for a tomorrow which may never exist, thereby endangering the possibility of establishing any form of stable order in the here and now. Realism’s distinctive contribution thus lies in its attempt to drive a path between the two, a path which, in the process, suggests the basis on which some form of synthesis between rationalism and reflectivism might be achieved. Oriented in its genesis towards addressing the shortcomings in an idealist transformatory project, it is centrally motivated by concern to reconcile vision with practicality, to relate utopia and reality. Unifying technical and a practical stance, it combines aspects of the positivist methodology employed by problem-solving theory with the interpretative stance adopted by critical theory, avoiding the monism of perspective which leads to the self-destructive conflict between the two. Ultimately, it can simultaneously acknowledge the possibility of change in the structure of the international system and the need to probe the limits of the possible, and yet also question the proximity of any international transformation, emphasize the persistence of problems after such a transformation, and serve as a reminder of the need to grasp whatever semblance of order can be obtained in the mean time. Indeed, it is possible to say that realism is uniquely suited to serve as such an orientation. Simultaneously to critique contemporary resolutions of the problem of political authority as unsatisfactory and yet to support them as an attainable measure of order in an unstable world involves one in a contradiction which is difficult to accept. Yet, because it grasps the essential ambiguity of the political, and adopts imperfectionism as its dominant motif, realism can relate these two tasks in a way which allows neither to predominate, achieving, if not a reconciliation, that is at least a viable synthesis. Perhaps the most famous realist refrain is that all politics are power politics. It is the all that is important here. Realism lays claim to a relevance across systems, and because it relies on a conception of human nature, rather than a historically specific structure of world politics, it can make good on this claim. If its observations about human nature are even remotely accurate, the problems that it addresses will transcend contingent formulations of the problem of political order. Even in a genuine cosmopolis, conflict might become technical, but it would not be eliminated altogether.67 The primary manifestations of power might become more economic or institutional rather than (para) military but, where disagreements occur and power exists, the employment of the one to ensure the satisfactory resolution of the other is inevitable short of a wholesale transformation of human behaviour. Power is ultimately of the essence of politics; it is not something which can be banished, only tamed and restrained. As a result, realism achieves a universal relevance to the problem of political action which allows it to relate the reformist zeal of critical theory, without which advance would be impossible, with the problem-solver’s sensible caution that, before reform is attempted, whatever measure of security is possible under contemporary conditions must first be ensured.

**The state will co-opt the alternative and make things worse.**

**McCormack 10** (Tara, Lecturer in International Politics at the University of Leicester and has a PhD in International Relations from the University of Westminster, *Critique, Security and Power: The political limits to emancipatory approaches*, page 137-138)

In chapter 7 I engaged with the human security framework and some of the problematic implications of ‘emancipatory’ security policy frameworks. In this chapter I argued that the shift away from the pluralist security framework and the elevation of cosmopolitan and emancipatory goals has served to **enforce international power inequalities** rather than lessen them. Weak or unstable states are subjected to greater international scrutiny and international institutions and other states have greater freedom to intervene, but the citizens of these states have no way of controlling or influencing these international institutions or powerful states. This shift away from the pluralist security framework has not challenged the status quo, which may help to explain why major international institutions and states can easily adopt a more cosmopolitan rhetoric in their security policies. As we have seen, the shift away from the pluralist security framework has entailed a shift towards a more openly hierarchical international system, in which states are differentiated according to, for example, their ability to provide human security for their citizens or their supposed democratic commitments. In this shift, the old pluralist international norms of (formal) international sovereign equality, non-intervention and ‘blindness’ to the content of a state are overturned. Instead, international institutions and states have more freedom to intervene in weak or unstable states in order to ‘protect’ and emancipate individuals globally. Critical and emancipatory security theorists argue that the goal of the emancipation of the individual means that security must be reconceptualised away from the state. As the domestic sphere is understood to be the sphere of insecurity and disorder, the international sphere represents greater emancipatory possibilities, as Tickner argues, ‘if security is to start with the individual, its ties to state sovereignty must be severed’ (1995: 189). For critical and emancipatory theorists there must be a shift towards a ‘cosmopolitan’ legal framework, for example Mary Kaldor (2001: 10), Martin Shaw (2003: 104) and Andrew Linklater (2005). For critical theorists, one of the fundamental problems with Realism is that it is unrealistic. Because it prioritises order and the existing status quo, Realism attempts to impose a particular security framework onto a complex world, ignoring the myriad threats to people emerging from their own governments and societies. Moreover, traditional international theory serves to obscure power relations and omits a study of why the system is as it is: [O]mitting myriad strands of power amounts to exaggerating the simplicity of the entire political system. Today’s conventional portrait of international politics thus too often ends up looking like a Superman comic strip, whereas it probably should resemble a Jackson Pollock. (Enloe, 2002 [1996]: 189) Yet as I have argued, contemporary critical security theorists seem to show a marked lack of engagement with their problematic (whether the international security context, or the Yugoslav break-up and wars). Without concrete engagement and analysis, however, the critical project is undermined and critical theory becomes nothing more than a **request that people behave in a nicer way** to each other. Furthermore, whilst contemporary critical security theorists argue that they present a more realistic image of the world, through exposing power relations, for example, their lack of concrete analysis of the problematic considered renders them actually **unable to engage** with existing power structures and the way in which power is being exercised in the contemporary international system. For critical and emancipatory theorists the central place of the values of the theorist mean that it cannot fulfil its promise to critically engage with contemporary power relations and emancipatory possibilities. Values must be joined with engagement with the material circumstances of the time.

**Your K doesn’t matter because water war is as real as it gets**

**Dinar 2** SAIS Review 22.2 (2002) 229-253Water, Security, Conflict, and CooperationShlomi Dinar is a Ph.D. candidate at the Johns Hopkins University School of Advanced International Studies. He is concentrating in environment, negotiation, conflict, and cooperation. This paper is dedicated to the memory of Captain Jerome E. Levy. This paper benefited from the Anna Sobol Levy Fellowship, a fellowship supported by Captain Levy. The author would also like to thank Benjamin Miller, Emanuel Adler, and the editors of this journal for very constructive comments. This article was originally inspired from an essay that originally appeared in International Negotiation. Shlomi Dinar, "Negotiation and International Relations: A Framework for Hydropolitics," International Negotiation 5, no. 2 (2000).

The dichotomy of conflict and cooperation over water and its relationship to national and regional security reflects the **reality** of **hydropolitics**. While military clashes have been associated with water, the concept of security does not end with nor does it only imply armed conflict. Because the pursuit of peace, and thus conflict and cooperation, constitutes the flip side of security, water is indeed relevant to the concept of security. It is this phenomenon that traditionalists have cast off as irrelevant and other rejectionists of the environment-security link have ignored.

Linking **security** with the **environment** does **not i**ncrease the possibility that nations will engage in more armed action against other states for the sake of natural resources such as water. Albeit minimal, evidence already exists as to the military skirmishes and military threats that have taken place over water. Nations will engage in armed conflict and political disputes over water **whether or not scholars acknowledge the link** between the environment and security. Similarly, the existence of more than 3,600 water treaties, the oldest dating to 805 AD, demonstrates a rich history of cooperation [End Page 239] over water regardless of scholarly debate on cooperation and the environment. The **debate** regarding the link between water, conflict, and cooperation is thus futile and has become a scholarly debate marred by **polemics** and **semantics.**

Given its geographical attributes, freshwater truly straddles the notion of sovereignty that traditionalists cherish so deeply and the international or regional conception that environmental globalists hold true. The problems that arise from shared water resources are both national and regional in nature. Similarly, the solutions that are needed to solve such problems are both national and regional. Most importantly for the debate on the environment and security, however, the impediments to cooperation and the instigation of conflict over water are both national and international in their sources. **States** in particular regions will **continue** to see water as a national security concern. Even though a regional agreement may be the best solution to states' water problems, they will **continue** to couch their need to access.

## \*\*\* 1AR

### 1AR—CP

**Perm—do the plan unconditionally, and include CPs condition in the procurement contract**

**Webb, 93**

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

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 behaviours 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 behaviour 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.

### Case o/w

Joshua S. Goldstein, Professor of International Relations at American University, 2001 (“Reflections: The Mutuality of Gender and War," *War and Gender*, Published by Cambridge University Press, ISBN 0521001803, p. 411-412)

First, peace activists face a dilemma in thinking about causes of war and working for peace. Many peace scholars and activists support the approach, "if you want peace, work for justice." Then, if one believes that sexism contributes to war, one can work for gender justice specifically (perhaps among others) in order to pursue peace. This approach brings strategic allies to the peace movement (women, labor, minorities), but rests on the assumption that injustices cause war. The evidence in this book suggests that causality runs at least as strongly the other way. War is not a product of capitalism, imperialism, gender, innate aggression, or any other single cause, although all of these influence wars' outbreaks and outcomes. Rather, war has in part fueled and sustained these and other injustices. 9 So, "if you want peace, work for peace." Indeed, if you want justice (gender and others), work for peace. Causality does not run just upward through the levels of analysis, from types of individuals, societies, and governments up to war. It runs downward too. Enloe suggests that changes in attitudes towards war and the military may be the most important way to "reverse women's oppression." The dilemma is that peace work focused on justice brings to the peace movement energy, allies, and moral grounding, yet, in light of this book's evidence, the emphasis on injustice as the main cause of war seems to be empirically inadequate. 10

**There is no single root cause of war—complexity dooms monocausal explanations.**

Vivienne **Jabri**, Lecturer in International Relations at the University of Kent, **1996** (“Introduction: Conflict Analysis Reconsidered,” *Discourses on Violence: Conflict Analysis Reconsidered*, Published by Manchester University Press ND, ISBN 0719039592, p. 3)

The study of war has produced a number of often conflicting answers to Quincy Wright's question, "Why is war thought? Why is war fought?"1 The history of human political violence has shown that **we cannot produce monocausal explanations of war**. Studies which concentrate on assumed innate human characteristics **fail** to account for the societal factors which are implicated in what is essentially an interactive and dynamic process. Similarly, investigations which link attributes of the international system, such as balances of power, not only produce contradictory findings, but seem to **negate** human decision-making and psychological processes in the onset of war **in specific conditions**. Studies of violent conflict aspire to uncover, through empirical investigation, patterns of behaviour which lead to war. As indicated by Holsti, studies of war may be divided into those which emphasise structural or "ecological" variables, such as the distribution of power capabilities within the system, and those which emphasise "decision-making, values, and perceptions of policy-makers" in attempts to isolate common features leading up to the decision for war.2

### 1AR Perm – Do Both

#### Realism solves

Murray 97—Alastair J. H. Murray, Professor of Politics at the University of Wales Swansea, 1997 [“Part II: Rearticulating and Re-Evaluating Realism,” Reconstructing Realism: Between Power Politics and Cosmopolitan Ethics, Keele University Press, ISBN 1853311960, Available Online to Subscribing Institutions via Net-Library, p. 195]

For the realist, then, if rationalist theories prove so conservative as to make their adoption problematic, critical theories prove so progressive as to make their adoption unattractive. If the former can justifiably be criticised for seeking to make a far from ideal order work more efficiently, thus perpetuating its existence and legitimating its errors, reflectivist theory can equally be criticised for searching for a tomorrow which may never exist, thereby endangering the possibility of establishing any form of stable order in the here and now. Realism's distinctive contribution thus lies in its attempt to drive a path between the two, a path which, in the process, suggests the basis on which some form of synthesis between rationalism and reflectivism might be achieved. Oriented in its genesis towards addressing the shortcomings in an idealist transformatory project, it is centrally motivated by a concern to reconcile vision with practicality, to relate utopia and reality. Unifying a technical and a practical stance, it combines aspects of the positivist methodology employed by problem-solving theory with the interpretative stance adopted by critical theory, avoiding the monism of perspective which leads to the self-destructive conflict between the two. Ultimately, it can simultaneously acknowledge the possibility of change in the structure of the international system and the need to probe the limits of the possible, and yet also question the proximity of any international transformation, emphasise the persistence of problems after such a transformation, and serve as a reminder of the need to grasp whatever semblance of order can be obtained in the mean time. Indeed, it is possible to say that realism is uniquely suited to serve as such an orientation. Simultaneously to critique contemporary resolutions of the problem of political authority as unsatisfactory and yet to support them as an attainable measure of order in an unstable world involves one in a contradiction which is difficult to accept. Yet, because it grasps the essential ambiguity of the political, and adopts imperfectionism as its dominant motif, realism can relate these two tasks in a way which allows neither to predominate, achieving, if not a reconciliation, then at least a viable synthesis. 66

#### Realism has critical potential—only the perm solves

Cozette 8 [Murielle Cozette\* BA (Hons) (Sciences Po Paris), MA (King's College London), MA (Sciences Po Paris), PhD (LSE) is a John Vincent Postdoctoral fellow in the Department of International Relations. Review of International Studies (2008), 34, 5–27]

This article concentrates on Morgenthau’s views on the ethics of scholarship and argues that all his works must be read in the light of his central goal: speaking truth to power. Morgenthau wrote at length, and held very specific views about, the role and function of scholars in society. It is therefore legitimate to claim that, as a scholar himself, Morgenthau attempted to live up to his very demanding definition of scholarly activity, and his assertion that scholars have the moral responsibility to speak truth to power informed all his major works. While Morgenthau’s conception of the ethics of scholarship is generally ignored or neglected, it is, however, indispensable to take it into account when approaching his writings. Indeed, it demonstrates that for Morgenthau, a realist theory of international politics always includes two dimensions, which are intrinsically linked: it is supposed to explain international relations, but it is also, **fundamentally,** a normative and critical project which **questions the existing status quo.** While the explanatory dimension of realism is usually discussed at great length, its critical side is consistently – and conveniently – forgotten or underestimated by the more recent, self-named ‘critical’ approaches. However diverse these recent approaches may be in their arguments, what unites them all is what they are supposedly critical of: the realist tradition. The interpretation they provide of realism is well known, and rarely questioned. Although it is beyond the scope of this article to review it at length, it is worth stressing some of the main features which are constantly emphasised. First then, realism is a state-centric approach, by which is meant that it stresses the importance of anarchy and the struggle for power among states. From this, most critical approaches jump to the conclusion that realism is therefore strikingly ill-equipped to deal with the contemporary era where the state is increasingly regarded as outdated and/or dangerous, because it stands in the path of different, more emancipatory modes of political organisation. Realism, it is also argued, pretends to be objective and to depict ‘things as they are’: but this cannot obscure the fact that theories are never value-neutral and constitute the very ‘reality’ they pretend to ‘describe’. This leads to the idea that realism is in fact nothing but conservatism: it is portrayed as the voice of (great) powers, with the effect of reifying (and therefore legitimising) the existing international order. This explains why Rothstein can confidently argue that realism ‘is . . . implicitly a conservative doctrine attractive to men concerned with protecting the status quo’, and that it is a ‘deceptive and dangerous’ theory, not least because it ‘has provided the necessary psychological and intellectual support to resist criticism, to persevere in the face of doubt, and to use any means to outwit or to dupe domestic dissenters’.2 Such views represent a **fundamental misunderstanding** of the realist project, but are nonetheless widely accepted as commonsense in the discipline. A typical example of this is the success of Cox’s famous **distinction between ‘problem solving’ and ‘critical’ theory**. Unsurprisingly, realism is the archetypal example of a problem-solving theory for Cox. His account of the realist tradition sweepingly equates Morgenthau and Waltz, who are described as ‘American scholars who transformed realism into a form of problem-solving theory’.3 Thereafter in his famous article ‘Social Forces, States and World Orders’, Cox refers to the works of both scholars by using the term ‘neo-realism’. Problem solving theory (and therefore realism) ‘takes the world as it finds it . . . as the given framework for action’, while by contrast, the distinctive trait of ‘critical theory’ is to ‘stand apart from the prevailing order of the world and asks how that order came about’.4 Problem-solving theory, says Cox, ‘serves particular national sectional or class interests, which are comfortable within the given order’, which therefore means that its purpose is ‘conservative’.5 Problem-solving theory also pretends to be ‘value free’, while Cox is keen to remind his reader that it contains some ‘latent normative elements’, and that its ‘non normative quality is however, only superficial’.6 By contrast to what Cox presents as a problem-solving theory, being ‘critical’ in IR means being openly normative, challenging the status quo, and seeking to advance human emancipation( s), however this concept is to be defined.7 The picture Cox proposes is therefore simple: critical theory is named as such because of its commitment to ‘bringing about an alternative order’ and because of its openly normative stance, while realism, by contrast, is presented as a theory which in effect reproduces and ‘sustain[s] the existing order’.8 To be fair, not all critical theorists promote such a simplistic vision of what realism stands for – Cox himself, in some of his later works, recognised that classical realism possesses an undeniable critical dimension. In 1992, providing a more nuanced analysis of the school, he thus accepted that ‘classical realism is to be seen as a means of empowerment of the less powerful, a means of demystification of the manipulative instruments of power’.9 He did not, however, investigate the critical dimension of realism in much depth, and failed to identify its emancipatory dimension. Other critical theorists demonstrate an awareness of the richness and subtlety of Morgenthau’s ideas. The best example remains Ashley’s famous piece on the poverty of neorealism, where he justly argues that the triumph of the latter has obscured the insights provided by classical realism. Ashley’s analysis remains, however, problematic as his interpretation of Morgenthau does not identify all the critical dimensions of his writings, and ultimately continues to present classical realism as the ‘ideological apparatus’ of one particular ruling group, that of statesmen, which remains essentially incapable of realising its own limitations. As he writes: It is a tradition whose silences and omissions, and failures of self critical nerve join it in secret complicity with an order of domination that reproduces the expectation of inequality as a motivating force, and insecurity as an integrating principle. As the ‘organic intellectuality of the world wide public sphere of bourgeois society, classical realism honors the silences of the tradition it interprets and participates in exempting the ‘private sphere’ from public responsibility.10 (emphasis added) The ‘picture’ of classical realism which is provided by Ashley therefore does not adequately capture its inherent critical dimension, as it ultimately presents it as reproducing the existing order and silencing dissent. Cox’s distinction clearly echoes the now classic one between ‘orthodox’ and ‘critical’ approaches (a label broad enough to include the self-named Critical Theory, Feminism, Normative theory, Constructivism and Post-Structuralism). The diversity of critical approaches should not obscure the fact that crucially, what allows them to think of themselves as critical is not simply a set of epistemological (usually ‘post-positivist’) or ontological assumptions they may share. It is also, fundamentally, the **image they think lies in the mirror** when they turn it to realism. In most cases then, it seems to be enough to oppose a **simplistic picture** of realism like that provided by Cox to deserve the much coveted label ‘critical’. This leads to the idea that it is impossible to be at the same time a **realist scholar and critica**l, as the two adjectives are implicitly presented as antithetical. This clearly amounts to an **insidious high-jacking** of the very adjective ‘critical’, which more often than not merely signals that one does not adopt a realist approach. The meaning of the adjective is therefore presented as self-evident, and realism is denied any critical dimension. This is highly **problematic** as this reinforces a typical ‘self-righteousness’ from these ‘critical’ approaches, which tend to rely on a **truncated and misleading** picture of what realism stands for and conveniently never properly engage with realists’ arguments. The fact that Waltz is always the primary target of these approaches is no coincidence: this article demonstrates that realism as expressed by Morgenthau is at its very core a critical project. In order to challenge the use of the adjective ‘critical’ by some who tend to think of themselves as such simply by virtue of opposing what they mistakenly present as a conservative theoretical project, the article highlights the central normative and critical dimensions underlying Morgenthau’s works. It does so by assessing his views about the ethics of scholarship. The article is divided into two parts. First, it investigates Morgenthau’s ideal of the scholarly activity, which rests upon a specific understanding of the relationship between truth and power. Second, it focuses on some features which, for Morgenthau, constitute a ‘betrayal’ of this ideal (a term he borrowed from Julien Benda). The article demonstrates that contrary to the common interpretation of realism as a theoretical outlook that holds an implicit and hidden normative commitment to the preservation of the existing order, Morgenthau’s formulation of realism is rooted in his claim that political science is a **subversive force, which should ‘stir up the conscience of society’, and in doing so, challenge the status quo**. For Morgenthau, IR scholars have the responsibility to seek truth, against power if needed, and then to speak this truth to power even though power may try to silence or distort the scholar’s voice.11 Giving up this responsibility leads to ideology and blind support for power, which is something that Morgenthau always saw as dangerous, and consistently opposed. His commitment to truth in turn explains why, according to him, political science is always, by definition, a revolutionary force whose main purpose is to bring about ‘change through action’. In complete contrast to what ‘critical approaches’ consistently claim, the realist project is therefore best understood as a critique of the powers-that-be

### 1AR—Securitization Good

#### Threat con isn’t a link—the alternative results in war.

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Although it seems attractive to focus on exclusionary concepts that insist on desecuritization, privileged referent objects, and the ‘belief’ that threats and vulnerabilities are little more than social constructions (Grayson, 2003), all these concepts work in theory but fail in practice. While it may be true that national security paradigms can, and likely will, continue to dominate issues that involve human security vulnerabilities – and even in some instances mistakenly confuse ‘vulnerabilities’ as ‘threats’ – there are distinct linkages between these security concepts and applications. With regard to environmental security, for example, Myers (1986: 251) recognized these linkages nearly two decades ago: National security is not just about fighting forces and weaponry. It relates to watersheds, croplands, forests, genetic resources, climate and other factors that rarely figure in the minds of military experts and political leaders, but increasingly deserve, in their collectivity, to rank alongside military approaches as crucial in a nation’s security. Ultimately, we are far from what O’Hanlon & Singer (2004) term a global intervention capability on behalf of ‘humanitarian transformation’. Granted, we now have the threat of mass casualty terrorism anytime, anywhere – and states and regions are responding differently to this challenge. Yet, the global community today also faces many of the same problems of the 1990s: civil wars, faltering states, humanitarian crises. We are nowhere closer toaddressing how best to solve these challenges, even as they affect issues of environmental, human, national (and even ‘embedded’) security. Recently, there have been a number of voices that have spoken out on what the International Commission on Intervention and State Sovereignty has termed the ‘responsibility to protect’:10 the responsibility of some agency or state (whether it be a superpower such as the United States or an institution such as the United Nations) to enforce the principle of security that sovereign states owe to their citizens. Yet, the creation of a sense of urgency to act – even on some issues that may not have some impact for years or even decades to come – is perhaps the only appropriate first response. The real cost of not investing in the right way and early enough in the places where trends and effects are accelerating in the wrong direction is likely to be decades and decades of economic and political frustration – and, potentially, military engagement. Rather than justifying intervention (especially military), we ought to be justifying investment. Simply addressing the immensities of these challenges is not enough. Radical improvements in public infrastructure and support for better governance, particularly in states and municipalities (especially along the Lagos–Cairo–Karachi–Jakarta arc), will both improve security and create the conditions for shrinking the gap between expectations and opportunity. A real debate ought to be taking place today. Rather than dismissing ‘alternative’ security foci outright, a larger examination of what forms of security are relevant and right among communities, states, and regions, and which even might apply to a global rule-set – as well as what types of security are not relevant – seems appropriate and necessary. If this occurs, a truly remarkable tectonic shift might take place in the conduct of international relations and human affairs. Perhaps, in the failure of states and the international community to respond to such approaches, what is needed is the equivalent of the 1972 Stockholm conference that launched the global environmental movement and established the United Nations Environmental Programme (UNEP), designed to be the environmental conscience of the United Nations. Similarly, the UN Habitat II Conference in Istanbul in 1996 focused on the themes of finding adequate shelter for all and sustaining human development in an increasingly urbanized world. Whether or not these programs have the ability to influence the future’s direction (or receive wide international support) is a matter of some debate. Yet, given that the most powerful states in the world are not currently focusing on these issues to a degree sufficient to produce viable implementation plans or development strategies, there may well need to be a ‘groundswell’ of bottom-up pressure, perhaps in the form of a global citizenry petition to push the elusive world community toward collective action.Recent history suggests that military intervention as the first line of response to human security conditions underscores a seriously flawed approach. Moreover, those who advocate that a state’s disconnectedness from globalization is inversely proportional to the likelihood of military (read: US) intervention fail to recognize unfolding realities (Barnett, 2003, 2004). Both middle-power and major-power states, as well as the international community, must increasingly focus on long-term creeping vulnerabilities in order to avoid crisis responses to conditions of extreme vulnerability. Admittedly, some human security proponents have recently soured on the viability of the concept in the face of recent ‘either with us or against us’ power politics (Suhrke, 2004). At the same time, and in a bit more positive light, some have clearly recognized the sheer impossibility of international power politics continuing to feign indifference in the face of moral categories. As Burgess (2004: 278) notes, ‘for all its evils, one of the promises of globalization is the unmasking of the intertwined nature of ethics and politics in the complex landscape of social, economic, political and environmental security’. While it is still not feasible to establish a threshold definition for human security that neatly fits all concerns and arguments (as suggested by Owen, 2004: 383), it would be a tragic mistake to assume that national, human, and environmental security are mutually harmonious constructs rather than more often locked in conflictual and contested opposition with each other. Moreover, aspects of security resident in each concept are indeed themselves embedded with extraordinary contradictions. Human security, in particular, is not now, nor should likely ever be, the mirror image of national security. Yet, these contradictions are not the crucial recognition here. On the contrary, rather than focusing on the security issues themselves, we should be focusing on the best multi-dimensional approaches to confronting and solving them. One approach, which might avoid the massive tidal impact of creeping vulnerabilities, is to sharply make a rudder shift from constant crisis intervention toward strategic planning, strategic investment, and strategic attention. Clearly, the time is now to reorder our entire approach to how we address – or fail to address – security.

### AT: Genocide

#### No impact—democracy checks.

O’Kane 97 [“Modernity, the Holocaust, and politics”, Economy and Society, February, ebsco]

Chosen policies cannot be relegated to the position of immediate condition (Nazis in power) in the explanation of the Holocaust. Modern bureaucracy is not ‘intrinsically capable of genocidal action’ (Bauman 1989: 106). Centralized state coercion has no natural move to terror. In the explanation of modern genocides it is chosen policies which play the greatest part, whether in effecting bureaucratic secrecy, organizing forced labour, implementing a system of terror, harnessing science and technology or introducing extermination policies, as means and as ends. As Nazi Germany and Stalin’s USSR have shown, furthermore, those chosen policies of genocidal government turned away from and not towards modernity. The choosing of policies, however, is not independent of circumstances. An analysis of the history of each case plays an important part in explaining where and how genocidal governments come to power and analysis of political institutions and structures also helps towards an understanding of the factors which act as obstacles to modern genocide. But it is not just political factors which stand in the way of another Holocaust in modern society. Modern societies have not only pluralist democratic political systems but also economic pluralism where workers are free to change jobs and bargain wages and where independent firms, each with their own independent bureaucracies, exist in competition with state-controlled enterprises. In modern societies this economic pluralism both promotes and is served by the open scientific method. By ignoring competition and the capacity for people to move between organizations whether economic, political, scientific or social, Bauman overlooks crucial but also very ‘ordinary and common’ attributes of truly modern societies. It is these very ordinary and common attributes of modernity which stand in the way of modern genocides.